



# GLP systems Track

## Operations Manual

For use with the GLP systems Track Laboratory Automation System, the Track Sample Manager, the Track Workflow Manager, and the Input/Output Module

80003968-102 DRAFT



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## NOTES

# Foreword

This operations manual is intended for the relevant laboratory staff operating the Abbott Automation Solutions GLP systems Track.

Ensure that this operations manual is read and understood before laboratory automation system (LAS) startup is performed.

This operations manual contains information on the LAS properties and handling, and instructions and measures for maintaining its operational readiness.

The LAS is a modular, customer-specific design. This operations manual is the base system manual of the LAS. The manuals for other modules are supplemental information to this operations manual. Ensure that the manuals relating to each single component are observed. In addition, observe the manuals for the connected analyzers.

The features in this manual were introduced in Track Manager Operating System 4.0.X, Track Sample Manager 4.0.X, Track Workflow Manager 2.0.X, and Input/Output Module 2.4.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](http://corelaboratory.abbott/ifu).

For laboratory professional use only.

Only use the operating instructions in this manual with an Input/Output Module with list number (LN) 04Z96-02 or higher or a Tube Assessment Module with LN 04Z99-02 or higher. If necessary, contact an Abbott Laboratories representative or an authorized service representative.

### **Related information...**

*What's new*, page 8

*General safety information*, page 9

*System security*, page 10

*Customer service*, page 11

*Intended use*, page 12

*Proprietary statement*, page 13

*Disclaimers*, page 14

*GLP systems Track warranty statement for USA customers only*, page 15

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## What's new

New features and changes were introduced in the following software.

### Track Sample Manager 4.0.X

A new operation mode is available to improve module inventory exchange during disaster recovery. A new **Module Data Recovery** item in the drop-down list of operation modes for TSM is available on the **Operation mode** tab. See the following new and updated topics:

- [Main menu screen element descriptions \(TSM\)](#), page 124
- [Operation mode tab element descriptions \(TSM\)](#), page 143
- [70015](#), page 309
- [70016](#), page 309
- [81030](#), page 353

### Track Workflow Manager 2.1.X

#### Input/Output Module 2.4.X

See the updated topic [Information screen](#), page 70

#### Related information...

[Read me first](#), page 7



## General safety information

Before operating the GLP systems Track, read and understand the safety information in this manual.

For information about actions or conditions that can affect system performance, carefully review operational precautions and limitations in this manual.

To become familiar with safety icons on the instrument and in this manual that indicate potentially hazardous situations, review hazards in this 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 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.

The GLP systems Track 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.

### **Related information...**

*Read me first*, page 7

*Operational precautions and limitations*, page 207

*Hazards*, page 211

## System security

Abbott Laboratories is committed to the security of the laboratory automation system (LAS) and reducing cybersecurity risks associated with our medical devices.

Abbott Laboratories recognizes the importance of incorporating cybersecurity considerations early and throughout our product design and development process. Our cybersecurity controls were designed, developed, and implemented based on leading practices, regulatory guidance, and government agencies.

As part of our proactive efforts, Abbott monitors third-party software components integrated into our products and communicates with software users regarding any third-party software components that have reached end of life/end of support by their manufacturer. Abbott will continue to monitor and assess third-party software components for potential vulnerabilities for supported Abbott products. This information can be accessed at [corelaboratory.abbott](http://corelaboratory.abbott) and will be updated as new information is available.

Although we have designed the LAS with cybersecurity controls, our customers also play a vital role in protecting information security:

- Use of good laboratory practices and adherence to applicable regulations is recommended at all times.
- The system should be installed in a secure location, including workstations used to access the Track Sample Manager (TSM) and Track Workflow Manager (TWM) user interfaces remotely.
- Only authorized users should have access to the system because the system may contain protected health information (PHI) or sensitive data.
- Although the LAS incorporates cybersecurity risk mitigation controls relating to network connectivity, each system should be installed on a secure network that adheres to best practices from a network security perspective to prevent unauthorized access to data transmission between the LAS and external systems, such as a printer or host.
- The LAS also incorporates cybersecurity risk mitigation controls relating to connecting USB storage devices. Reports or other data exported to USB storage devices should be controlled with appropriate laboratory practices.
- When a customer-owned server with the Track Manager Operating System hosting the TSM or TWM application is decommissioned or disposed, the customer should remove all PHI or sensitive data from the server.
- Operators should log off from the TSM and TWM user interfaces after each session.

### Related information...

[Read me first](#), page 7

## Customer service

For questions about the GLP systems Track, contact the local representative or find country-specific contact information at [corelaboratory.abbott](https://corelaboratory.abbott).

In addition, contact the local representative or use country-specific contact information to request instructions for use.

### **Related information...**

*[Read me first, page 7](#)*

## Intended use

The GLP systems Track is a modular laboratory automation system 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.

### **Related information...**

*Read me first*, page 7

## Proprietary statement

The GLP systems Track 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 7

## Disclaimers

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Incremental manual updates may cause the page numbering of the Master Table of Contents and the Master Index to change.

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### **Related information...**

*[Read me first](#), page 7*

## GLP systems Track warranty statement for USA customers only

Abbott Laboratories warrants new instruments sold by Core Diagnostics to be free from defects in workmanship and materials during normal use by the original purchaser. This warranty shall continue for a period of one year from the date of shipment to the original purchaser, or until title is transferred from the original purchaser, whichever occurs first (the "Warranty Period").

If any defects occur during the Warranty period, contact your Abbott Customer Service Representative immediately, and be prepared to furnish information including the serial number, the model number, and pertinent details concerning the defect.

This Warranty does not cover defects or malfunctions which: (1) are not reported to Abbott during the Warranty Period and within one week of occurrence; (2) result from chemical decomposition or corrosion; (3) are caused primarily by misuse, alteration, damage or failure to comply with any requirements or instruction contained in the applicable Abbott Operations Manual (including the substitution of any reagent not authorized by Abbott); or (4) result from maintenance, repair, or modification, performed or attempted by personnel not authorized by Abbott without Abbott's authorization.

Abbott's liability for all matters arising from the supply, installation, use, repair, and maintenance of the instrument, whether arising under this Warranty or otherwise, shall be limited solely to the repair or (at Abbott's sole discretion) replacement of the instrument or of components thereof. Replaced parts shall become the property of Abbott Laboratories. In no event shall Abbott be liable for injuries sustained by third parties.

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### **Related information...**

[Read me first, page 7](#)

## GLP systems Track agency approvals

The GLP systems Track has been tested and found to comply with the following agency standards, European Union (EU) directives, and regulations:

- UL 61010-1 Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 1: General Requirements
- IEC/EN 61010-1 Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 1: General Requirements
- CAN/CSA-C22.2 No. 61010-1 Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 1: General Requirements
- IEC/EN 61010-2-101 Safety requirements for electrical equipment for measurement, control and laboratory use - Part 2-101: Particular requirements for in vitro diagnostic (IVD) medical equipment
- IEC/EN 61010-2-020 Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 2-020: Particular requirements for laboratory centrifuges
- IEC 60825-1 Safety of laser products - Part 1: Equipment classification and requirements
- IEC/EN 61010-2-011 Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 2-011: Particular requirements for refrigerating equipment
- DIRECTIVE 2012/19/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 on waste electrical and electronic equipment (WEEE)
- DIRECTIVE 2011/65/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment
- COMMISSION DELEGATED DIRECTIVE (EU) 2015/863 of 31 March 2015 amending Annex II to Directive 2011/65/EU of the European Parliament and of the Council as regards the list of restricted substances
- REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC
- DIRECTIVE 2006/42/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 May 2006 on machinery, and amending Directive 95/16/EC (recast)
- IEC/EN 61326-1 Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements
- IEC/EN 61326-2-6 Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 2-6: Particular requirements - In vitro diagnostic (IVD) medical equipment



- DIRECTIVE 2014/53/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC
- Federal Communications Commission (FCC) Part 15.225: Operation within the band 13.110-14.010 MHz
- Radio Standards Specification 210 (RSS-210) Issue 10: License-Exempt Radio Apparatus: Category I Equipment



Legal Manufacturer	Abbott Automation Solutions GmbH Sachsenkamp 5 20097 Hamburg Germany +49 40 809051-111
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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.

Changes or modifications not expressly approved by Abbott Automation Solutions for compliance could void the user's authority to operate the equipment.

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.

**NOTE:** The software has not been evaluated to UL 1998, *Standard for Software in Programmable Components*.

**Related information...**

[Read me first, page 7](#)

## Intellectual Property statement

GLP systems Track and related brand marks are trademarks of Abbott. Other trademarks are the property of their respective owners.

### **Related information...**


*Read me first*, page 7

## Key to symbols


Symbols must not be removed, painted over, or rendered illegible. Damaged notices must be replaced. The following symbols may be attached to the GLP systems Track.

### Harmonized symbols


#### Directive 2012/19/EU

Symbol	Description
	WEEE: Waste Electrical and Electronic Equipment <b>NOTE:</b> 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.




#### IEC 60417-5009


Symbol	Description
	Standby

#### IEC 60825-1




Symbol	Description
	Caution: Embedded Class 2 Lasers. Do not open module covers while the bar code readers are turned on. Do not stare into the beam.

#### IEC 61010-1


Symbol	Description
	Caution: Consult accompanying documents
	Caution: Hot surface
	Caution: Possibility of electric shock

Symbol	Description
	Caution: Protective conductor terminal


**IEC 61010-2-101**

Symbol	Description
	Caution: Biological RISKS
	
	<i>In Vitro</i> Diagnostic Medical Device


**ISO 3864**

Symbol	Description
	Caution: Mind or watch your hands


**ISO 7010-M002**

Symbol	Description
	Observe operations manual


**ISO 7010-M006**

Symbol	Description
	Caution: Power off mains disconnect switch from electrical supply


**ISO 7010-P015**

Symbol	Description
	Caution: Do not reach inside







## ISO 7010-W020

Symbol	Description
	Caution: Overhead obstruction


## ISO 7010-W022

Symbol	Description
	Caution: Sharp element



## ISO 15223-1

Symbol	Description
	Date of manufacture
	Do not reuse
	Keep dry
	Manufacturer
	Temperature limitation
	Use by/Expiration date
<b>LOT</b>	Batch code/Lot number
<b>REF</b>	Catalog number/List number
<b>SN</b>	Serial number

## ISO 15223-1, ISO 7000

Symbol	Description
	Fragile, handle with care

## Nonharmonized symbols

Symbol	Description
	"Conformité Européenne," compliance of a product with the applicable European Union legal provisions.
<b>DISTRIBUTED BY</b>	Distributed by
<b>DISTRIBUTED IN THE USA BY</b>	Distributed in the USA by
<b>FOR USE WITH</b>	For use with
	Play/Pause
<b>PRODUCT OF GERMANY</b>	Product of Germany
<b>Rx ONLY</b>	Caution: Federal law restricts this device to sale by or on the order of a physician.
<b>UNIT</b>	Unit

**NOTE:** The precise location of the symbols is specific to each module. For module-specific information, refer to the appropriate manual.

## Related information...

[Read me first](#), page 7

# Manufacturer and distributor

## Manufacturer

Abbott Automation Solutions GmbH  
Sachsenkamp 5  
20097 Hamburg  
Germany  
+49 40 809051-111

As the manufacturer of the GLP systems Track components, Abbott Automation Solutions GmbH is responsible for the general functionality and performance of each single component. Any additional responsibilities are subject to the written contractual agreements between the distributor and the owner.

## Sales partners

The distributor is the contractual partner of the owner.

Acting as the middleman between the manufacturer and the owner, the distributor is responsible for the customer-specific system design, system installation, and all maintenance performed according to the service requirements of the manufacturer.

## Owner

The owner is the natural or legal person who operates or owns the laboratory automation system.

## Related information...

[Read me first, page 7](#)

# NOTES



## Introduction

This section provides information on the purpose and structure of the operations manual as well as reading and orientation aids for the operations manual.

**Related information...**

*Organization of the operations manual*, page 26

*Conventions for the operations manual*, page 28

*Operations manual description*, page 30

*Operations manual use*, page 31

# Organization of the operations manual

Section	Description
Read me first	<ul style="list-style-type: none"> <li>• General safety information</li> <li>• Customer service contact information</li> <li>• Intended use of the system</li> </ul>
System documentation	<ul style="list-style-type: none"> <li>• Content organization and conventions</li> <li>• Use of the operations manual</li> </ul>
Section 1: Use or function	<ul style="list-style-type: none"> <li>• GLP systems Track overview</li> <li>• Track overview</li> <li>• CAR overview</li> <li>• Track Sample Manager (TSM) overview</li> <li>• Track Workflow Manager (TWM) overview</li> <li>• Input/Output Module (IOM) overview</li> <li>• RackPorts overview</li> <li>• FlexRacks overview</li> </ul>
Section 2: Installation procedures and special requirements	<ul style="list-style-type: none"> <li>• Transportation, installation, disassembly, and disposal</li> <li>• IOM configuration</li> </ul>
Section 3: Principles of operation	<ul style="list-style-type: none"> <li>• General operation</li> <li>• Control system</li> <li>• TSM functional description</li> <li>• TWM functional description</li> <li>• IOM procedures</li> </ul>
Section 4: Performance characteristics and specifications	Technical data
Section 5: Operating instructions	Procedures for routine system operation
Section 6: Calibration procedures	Not required
Section 7: Operational precautions and limitations	Operational requirements, precautions, and limitations to ensure optimal operator safety and accurate test results
Section 8: Hazards	Hazard and safety information
Section 9: Service, maintenance, and diagnostics	Procedures for cleaning and maintenance
Section 10: Troubleshooting	<ul style="list-style-type: none"> <li>• Troubleshooting basics</li> <li>• Probable causes and corrective actions for message codes</li> <li>• Probable causes and corrective actions for observed problems</li> </ul>
Revision history	History of revisions to the operations manual
Glossary	Alphabetical listing of terms that are used in the operations manual

Section	Description
Index	Alphabetical listing of subject matter with references to the location of information

**Related information...**

[System documentation](#), page 25

# Conventions for the operations manual

Conventions are a set of defined standards that are used to communicate meaning in an expected manner.

**Table 1: Text conventions**

Description	Use
Italic font style	Indicates a reference to related information.
Bold font style	Emphasizes key words in procedures. For example, in the numbered steps, bold font style is applied to the following elements: <ul style="list-style-type: none"> <li>• Toolbar, icon, and menu items</li> <li>• Buttons</li> <li>• Commands</li> <li>• Lists and tabs</li> <li>• Dialog box titles and options</li> </ul>
Numbers in brackets (for example, [1] and [2])	Reference specific areas of a graphic within a procedure.

**Table 2: Number format conventions**

Description	Use
Comma in numbers	Separates thousands in numbers that are greater than 9999 (for example, 10,000 specimens).
Period in numbers	Separates the integer part from the fractional part of a number written in decimal form (for example, 3.12%).

**Table 3: Content conventions**

Description	Use
Safety symbols and the <b>CAUTION</b> signal word	Identify activities that expose the operator to potentially dangerous conditions.
<b>IMPORTANT</b> signal word	Advises the operator to comply with precautions to prevent a negative impact on system operations or results.
<b>NOTE</b> signal word	Provides information that is relevant to the topic content.
Related information list	Provides references at the end of a topic that are related to the topic.

**Table 4: Graphic conventions**

Description	Use
Numerical references on graphics	Indicate items in a graphic that are described in the legend.

**Related information...**

[System documentation](#), page 25

## Operations manual description

The operations manual is designed to be the quickest and most accurate resource for informational needs.

**Related information...**

*System documentation*, page 25

## Operations manual use

The operations manual is designed for quick access to information needed to:

- Understand the concepts behind system operation and performance.
- Accomplish a task.
- Recover from an error.
- Troubleshoot a problem.

### **Related information...**

[System documentation](#), page 25

# NOTES



## Introduction

The GLP systems Track is a modular laboratory automation system (LAS) used to perform multiple pre-analytic and post-analytic steps to automate sample preparation and distribution processes in clinical laboratories. These processes include bar code identification of samples, centrifugation, aliquoting of samples, transport of samples between processes (modules), and delivery of samples to one or more Abbott and third-party commercially available laboratory analyzers. Each module includes a built-in touchscreen, a user interface that functions as a central operating and display element.

After samples have been loaded onto the LAS, they are loaded into transport vehicles (CARs) that run on an intermodule track system. Samples are then directed to the sample preparation modules and connected analyzers. After the analysis process is completed, the samples are available to be removed, archived, or disposed.

The system can perform the following sample processing steps:

- Loading in racks
- Identification by using bar codes
- Transporting and tracking
- Preparation for removal

Optional sample processing steps are available with additional modules.

**NOTE:** Sample integrity and adequate sample volume after centrifugation are not automatically evaluated by the LAS. Sample integrity and adequate sample volume are necessary to prevent errors on the sample. Laboratory personnel have the responsibility to verify sample integrity and sample volume before testing.

The Track Sample Manager (TSM) offers features including workload management, sample-to-analyzer routing (based on sample orders from the laboratory information system and the Track Workflow Manager), and module operating mode monitoring by using communication links between TSM, analyzers, and middleware.

The GLP systems Track does not modify the intended use of the analytic functionality of connected equipment. Test results and sample-related data are not transferred.

### Related information...

[GLP systems Track overview](#), page 35

[Track overview](#), page 37

[CAR overview](#), page 42

[Track Sample Manager overview](#), page 47

[Track Workflow Manager overview](#), page 48

[Input/Output Module overview](#), page 49

[RackPorts overview](#), page 58

*FlexRacks overview*, page 59

## GLP systems Track overview

The CARs on the GLP systems Track transport the samples to the various modules. External analyzers are connected to the track through specific interfaces.

The following list describes the main components of the laboratory automation system (LAS):

<b>Track sections</b>	Include floor and ceiling sections and provide space for laboratory utility lines carrying electricity, water, or wastewater.
<b>Lane elements</b>	Include straight lanes, curves, cross switches, charge lanes for charging of the CARs, maintenance lanes for defective or faulty CARs, and pass points for CAR identification recognition and location identification.
<b>AccessPoints</b>	Hold CARs and samples in place, allowing for secure sample processing.
<b>Spirals</b>	Provide interconnection between floors and elevated sections.
<b>CARs</b>	Transport the samples to the modules. The Track Sample Manager ensures that the CARs navigate smoothly in the LAS.
<b>Input/Output Module (IOM)</b>	The IOM is the central module for the input and output of sample tubes. In addition, areas of the drawers can be configured as an archive or for loading and unloading racks.

### Related information...

[Use or function](#), page 33

[Communication paths](#), page 35

## Communication paths

The following figure shows the communication paths.

**Figure 1: Flowchart of communication paths**



### Legend:

1. Laboratory information system (LIS) with middleware
2. Track Workflow Manager (TWM)

3. Track Sample Manager (TSM)
4. GLP systems Track

The following list describes the communication paths:

1. The LIS sends the requested analyses to the middleware. The middleware then forwards these analyses to TWM.
2. Using these analyses, TWM creates targets on the GLP systems Track, which are then communicated to TSM.
3. TSM sends detailed instructions for where the sample should be processed on the track.
4. The track notifies TSM of the current location of the sample and the processing steps that have been performed.
5. TSM sends this information to TWM. If necessary, this information is also forwarded to the LIS with the middleware.

**NOTE:** Analysis results are sent from the analyzers directly to the middleware and not to the track.

**Related information...**

*GLP systems Track overview*, page 35

*Track Workflow Manager interface*, page 86

## Track overview

CARs travel on the track to transport the samples to the various modules.

Externally supplied analyzers are connected to the track by specific interfaces such as the Sample Access Line.

The track structure is customizable and can be extended as required. The track comprises the support system and lane elements.



**CAUTION:** The support system houses electronic components and customer-specific supply lines. To avoid a tripping hazard, ensure that cords and cables in high-traffic areas are routed safely.

The support system and several track sections compose a track segment, which is controlled by a segment controller. The Track Sample Manager (TSM) controls the active lane elements and enables the CARs to move individually on the track. TSM is configured with the custom layout of the track.



**CAUTION:** Finger pinches can occur if the track hoods close during work on the track. Use caution when working on the track.



**CAUTION:** Injury can occur when track hoods are opened and closed or when they are open during work on the track. When working on the track with the track hoods open, be aware of moving parts. Do not reach into the path of moving parts.



**CAUTION: Possibility of electric shock.** The track is high voltage. Therefore, side casings must stay in place.

### Related information...

[Use or function](#), page 33

[Track sections](#), page 37

[Lane elements](#), page 39

[Layout tab element descriptions \(TSM\)](#), page 137

[Open and close the track hoods](#), page 112

[Open and close the front and rear module covers](#), page 187

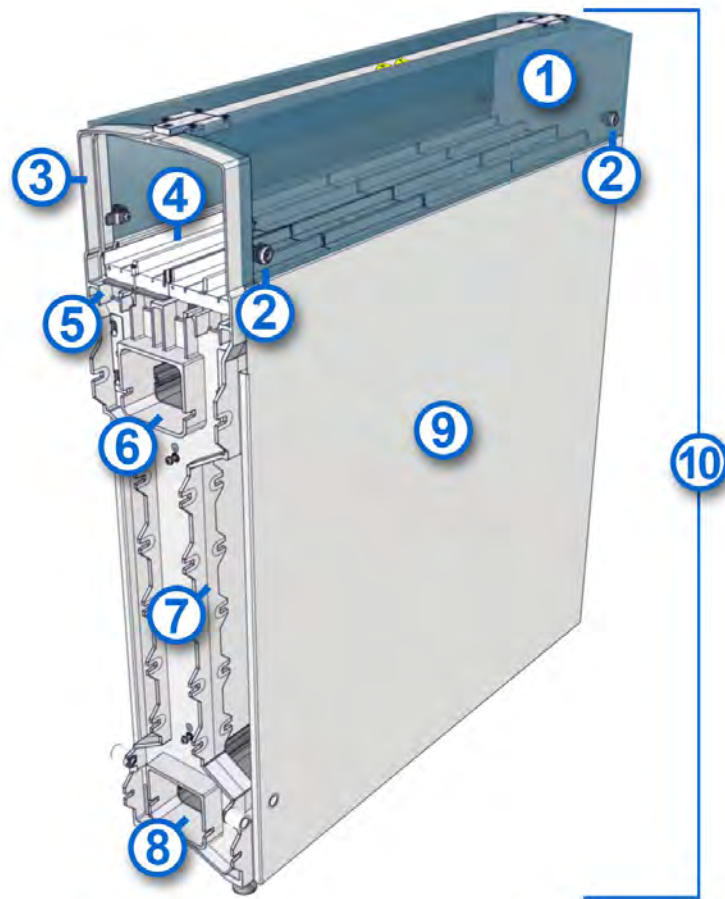
## Track sections

The modular design of the track sections allows the laboratory automation system to support a customer-specific structure.

The track hoods include locks and side casing to protect the electronic components, lane elements, and CARs from dust and manual access.

**NOTE:** The width of a track section can be 20 cm, 40 cm, or 80 cm.

Figure 2: Track section and support system



**Legend:**

1. Track hood  
**NOTE:** Accessible segments of the track have track hood locks.
2. Track hood locks
3. Track hood bracket
4. Lane element
5. Positioning plate for lane elements
6. Support rail for cables
7. Support pillar
8. Support rail for customer-specific cables and equipment
9. Side casing
10. Track section

**Related information...**

[Track overview](#), page 37

[Open and close the track hoods](#), page 112

## Lane elements

All lane elements are composed of a plastic body and two lanes. The guiding slot in the lane element is used to guide the CARs.

The track has two types of lane elements: active and passive.

### Related information...

[Track overview](#), page 37

[Active lane elements](#), page 39

[Passive lane elements](#), page 40

[Special lane elements](#), page 40

### Active lane elements

Active track elements communicate with CARs and the Track Sample Manager to perform actions, have a printed circuit board, and can be actively controlled.

Active lane elements include the following examples:

<b>Cross switch</b>	Enables CARs to switch lanes.
<b>AccessPoint</b>	Enables CARs to stop. With the guiding pin, the CAR moves against the horizontal holding pin in the guiding slot. The side-clamping jaws clamp the CAR.
<b>Charge lane</b>	Receives CARs with batteries that need to be charged and empty CARs that have not been requested. Generally, a maximum of four charge lane elements can be placed together to form a charge lane. Each charge lane element accommodates a maximum of three CARs. When the CAR is in the charging position, the charging contacts move up and out of the floor and connect to the charging contacts on the CAR.
<b>Switch 90 divergent</b>	Switches a CAR from the track to a module for sample processing.
<b>Track T-Element</b>	Allows CARs to change directions.
<b>SpiralSwitch</b>	Switches a CAR from the track to a spiral tower. The segment controller contains a radio-frequency identification (RFID) reader to verify the identity and location of each CAR entering the spiral tower.

**Related information...**

[Lane elements](#), page 39

**Passive lane elements**

Passive lane elements are used for the track component transport functions, have no printed circuit board, and cannot be controlled.

Passive lane elements include the following examples:

**Straight lane**                      Has two lanes.

**Maintenance lane**                Receives released defective CARs without samples.

**Related information...**

[Lane elements](#), page 39

**Special lane elements**

Special lane elements can be used to meet customer-specific requirements for laboratory automation. Special lane elements are passive lane elements.

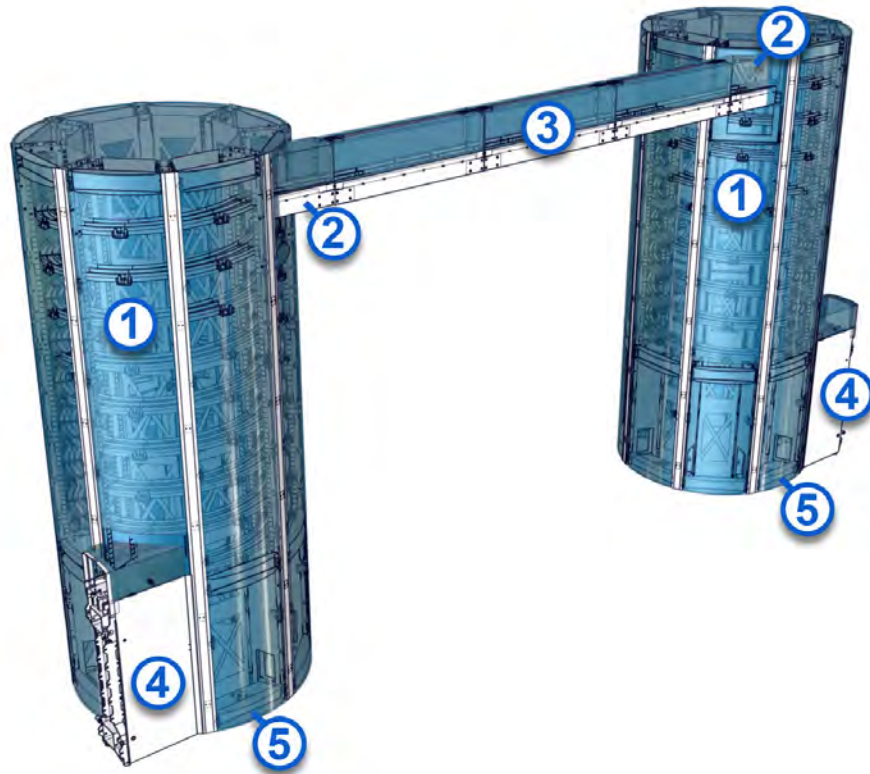
**Roundabout**                      This lane element combines the attributes of both the active and passive T-elements, which allow CARs to change direction, and includes U-turn capabilities. Roundabouts include the following variations:

- Roundabout 3-entry
- Roundabout 3-entry HL
- Roundabout 4-entry HL

**Spiral towers**                    Several of these lane elements are connected in the form of a spiral to bridge height differences.



Figure 3: Spiral towers overview

**Legend:**

1. Spiral towers
2. Spiral exits
3. Spiral connection bridge
4. Spiral entrances
5. Spiral doors

**Related information...**

[Lane elements](#), page 39

## CAR overview

CARs transport the samples to the modules.

The Track Sample Manager ensures that the CARs navigate smoothly in the laboratory automation system. Various speed profiles are available. A rechargeable lithium battery is the energy source for the CAR. To charge the rechargeable lithium battery, the CARs automatically move into the charge lane.

### Related information...

*Use or function*, page 33

*CAR design and function*, page 42

*Descriptions of CAR charge statuses*, page 45

## CAR design and function

The CAR is an autonomous means of transport.

Figure 4: CAR (isometric view)

**Legend:**

1. Serial number: Preassigned by the manufacturer.
2. Chassis: Houses the CAR.
3. Collision sensors: Measure the distance from the preceding CAR and send this information to the control electronics of the CAR. The CAR brakes as necessary.
4. Light-emitting diodes: Indicate the operational status of the CAR.
5. Sample holder with clips: Holds a standard sample tube in a fixed, vertical position. The sample holder is a nonremovable, plastic component with four arms.

Figure 5: CAR (bottom view)



**Legend:**

1. Drive wheel: Uses an electric drive with a rechargeable lithium battery. The electric drive enables individual driving on the track. The drive wheel is a centrally installed, plastic component.
2. On/Off switch: Turns on and turns off the CAR, and is located at the rear of the CAR. CARs are turned on only during installation.  
**NOTE:** The On/Off switch can be damaged due to inappropriate handling. To avoid component damage, only move the On/Off switch if necessary.
3. Charging contacts: Enable the rechargeable lithium battery of the electric drive to be charged, and are located on the bottom of the CAR.
4. Guiding pin: Keeps the CAR in the guiding slot of the lane elements.
5. Sliders: Push the CAR over the track.
6. Front underseal: Contains the sliders, guiding pin, and permanent magnet. The front underseal can be replaced if damaged or worn.
7. Drive operation sensor: Receives the signals from the active lane elements. The signals may include Start, Stop, Curve, and Speed.
8. Permanent magnet: Registers the CAR on the active lane element.

**Related information...**[CAR overview](#), page 42[Clean the sample holder](#), page 233[Clean the drive wheel and the wheel arch](#), page 233[Sample tube technical data](#), page 95[Start the GLP systems Track](#), page 104[CAR maintenance](#), page 234**Descriptions of CAR charge statuses**

CAR charge status refers to the operational status of a CAR. Light-emitting diodes (LEDs) indicate the following charge statuses:

**On the track****LED off**

Indicates normal operation.

**LED yellow**

- Blinks five times per second in a left curve.
- Blinks two times per second in a right curve.

**LED red**

- Blinks one time per second if the charge status is 30% or less.
- Blinks two times per second if the charge status is 20% or less.
- Blinks five times per second if the charge status is 10% or less.
- Illuminates steadily if the CAR has an error.

**In the charge lane****LED green**

Illuminates or blinks one time per second if there is a charge voltage and the lithium battery is fully charged.

**LED yellow**

- Illuminates steadily during charging.
- Blinks one time per second when the charge voltage is applied, but the lithium battery is no longer being charged (less than 4 V).

**LED red**

- Blinks one time per second if the charge status is 30% or less.
- Blinks two times per second if the charge status is 20% or less.
- Blinks five times per second if the charge status is 10% or less.
- Illuminates steadily if the CAR has an error.

**NOTE:** If the charge status of the CAR is 10% or less and this status continues for more than 15 minutes, the CAR turns off.

**Related information...**

[CAR overview](#), page 42

## Track Sample Manager overview

The Track Sample Manager (TSM) is the central software application of the GLP systems Track and runs on a dedicated operating system, the Track Manager Operating System.

TSM is installed on a separate computer and is connected to the laboratory automation system (LAS) and the Track Workflow Manager (TWM). TSM provides the modules with sample-specific information and instructions. TWM receives orders from the laboratory information system (LIS), an external component that provides TWM with sample information. TWM relays the information from the LIS to TSM for sample routing.

TSM provides access to configuration parameters for the LAS. The configuration parameters control the routing of samples and CARs in detail.

TSM controls and monitors sample transport on CARs. CARs are used to route the samples to the connected modules. Modules provide information to TSM if new samples are placed on the LAS. Empty CARs must be routed to the appropriate points to load new samples onto the LAS.

TSM reports the location of the CARs on the track at defined locations. The user interface displays comprehensive status information from the communication of the CARs with active lane elements such as switches, charge lanes, and stopping points. The user interface also provides detailed statistics on the actions that have been performed. Sample IDs are linked to the required sample routes received from TWM. Assay information is not transmitted to TSM.

The following list provides key features of TSM:

- Configuration based on the provided track layout of the laboratory for a specific LAS
- Various options to adapt sample and CAR routing based on laboratory needs
- Status display of all active components of the LAS in list views and visual track schematics
- Statistics on performance, throughput, and system events
- Web-based application with a user interface that can be accessed from any workplace in the network by using a browser

### Related information...

[Use or function](#), page 33

[Track Workflow Manager overview](#), page 48

[Control system](#), page 84

## Track Workflow Manager overview

The Track Workflow Manager (TWM) uses an algorithm to translate individual sample orders into pre-analytical processing steps and target destinations (target plan). Order input, test sequence, and results validation are managed through the laboratory information system (LIS) and middleware. The Track Sample Manager (TSM) controls the transportation of samples on CARs to their destinations (for example, modules and analyzers) along the laboratory automation system (LAS). TWM is located between the LIS, middleware, and TSM, and has the following functions:

- Receives the orders from the LIS through the middleware
- Receives test or instrument availability from the middleware and instrument status from TSM
- Reports information about the modules installed on the LAS
- Computes sample routes according to customer-defined configuration for specific laboratory needs and requirements

The following list provides the key features of TWM:

- Target plan creation for samples
- Customer-specific calculation of sample routing
- Customizable specification of laboratory requirements
- Ability to activate or deactivate one or more tests or instruments
- Web-based application with a user interface that can be accessed from any workplace in the network by using a browser
- Ability to receive the orders from the LIS through the middleware

### Related information...

*Use or function*, page 33

*Track Sample Manager overview*, page 47



## Input/Output Module overview

The Input/Output Module (IOM) is used to load and unload samples to and from the laboratory automation system. The IOM has the following key features:

- Processes a minimum of 900 capped sample tubes per hour
- Allows configurable areas in drawers for sample input and output, input only, or output only
- Allows configurable areas in drawers for loading and unloading analyzer-specific racks
- Uses RackPorts to accommodate various rack types
- Allows customer-definable input areas
- Allows manual archiving

Input configuration includes the following features:

- Manual input of samples into racks with configurable area assignment for different routes
- Input of samples into FlexRacks or analyzer-specific racks
- Sample assignment (such as tube type, fluid type, capped or uncapped, or centrifuged or uncentrifuged) according to customer specification
- Loading of samples into CARs from racks after the samples are identified by reading their bar codes

Output configuration includes the following features:

- Configurable areas for samples with errors, such as bar code reader errors, and for sorting of samples according to customer specification
- Unloading of samples from CARs into racks, followed by the reading of sample bar codes and, if required, the transport of the samples to the appropriate output areas
- Distribution of samples within racks according to customer specification
- Distribution of samples into specified racks for manual archiving
- Automatic sorting of samples that have error messages (such as unreadable bar codes, no orders, or other errors) into specified error areas

### Related information...

*Use or function*, page 33

*Input/Output Module design and function*, page 50

*Descriptions of module statuses*, page 56

*Descriptions of drawer statuses*, page 56

## Input/Output Module design and function

The Input/Output Module consists of the following components.

Figure 6: Exterior front view of the IOM



### Legend:

1. 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.**

2. 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.

3. 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.
4. On/Off push button: Powers on and powers off the module. The On/Off push button is located on the front of the module.
5. Drawer push buttons: Open and close the drawers. The drawer push buttons are located on the front of the module above the drawers.
6. Lock: Secures the front and rear module covers and the module flap. A key unlocks any module cover.
7. Drawer: Contains RackPorts and racks. Drawers can be opened individually on the front of the module by using the corresponding push buttons or from the touchscreen user interface.
8. Housing: The upper part of the housing contains the loading area with drawers. The loading area is used to load and unload samples from the module. The bottom of the loading area is open at the rear and enables the robot gripper to access the samples in CARs.
9. Module serial number label: Located in the interior of the module.

**Figure 7: Exterior rear view of the IOM**



Legend:

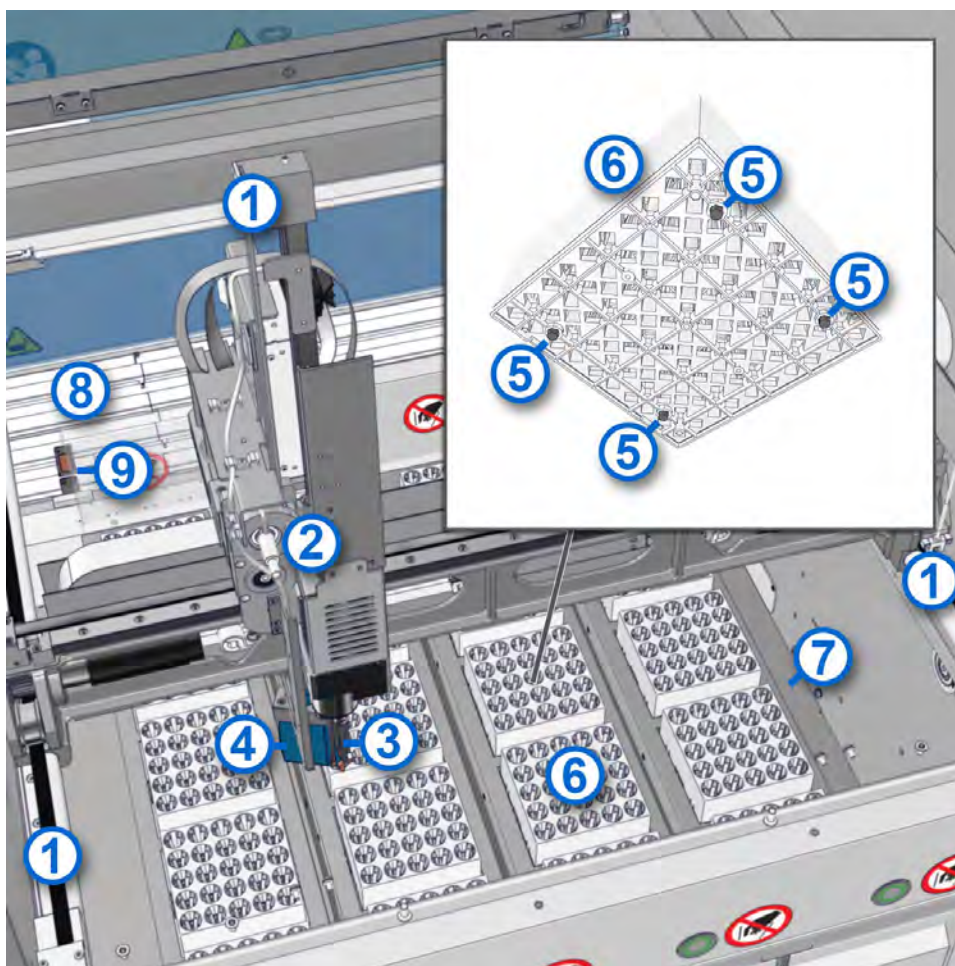
1. Rear module cover: Protects the operator from injury and keeps the loading area free from dust. The module cover can be opened from the rear.



**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.**

2. Track: Composed of lane elements and serves as the structure along which CARs move to transport samples to modules.
3. Module flap: Used to access the track inside the module.
4. Power switches: Located at the rear of the module.

Figure 8: Interior view of the IOM

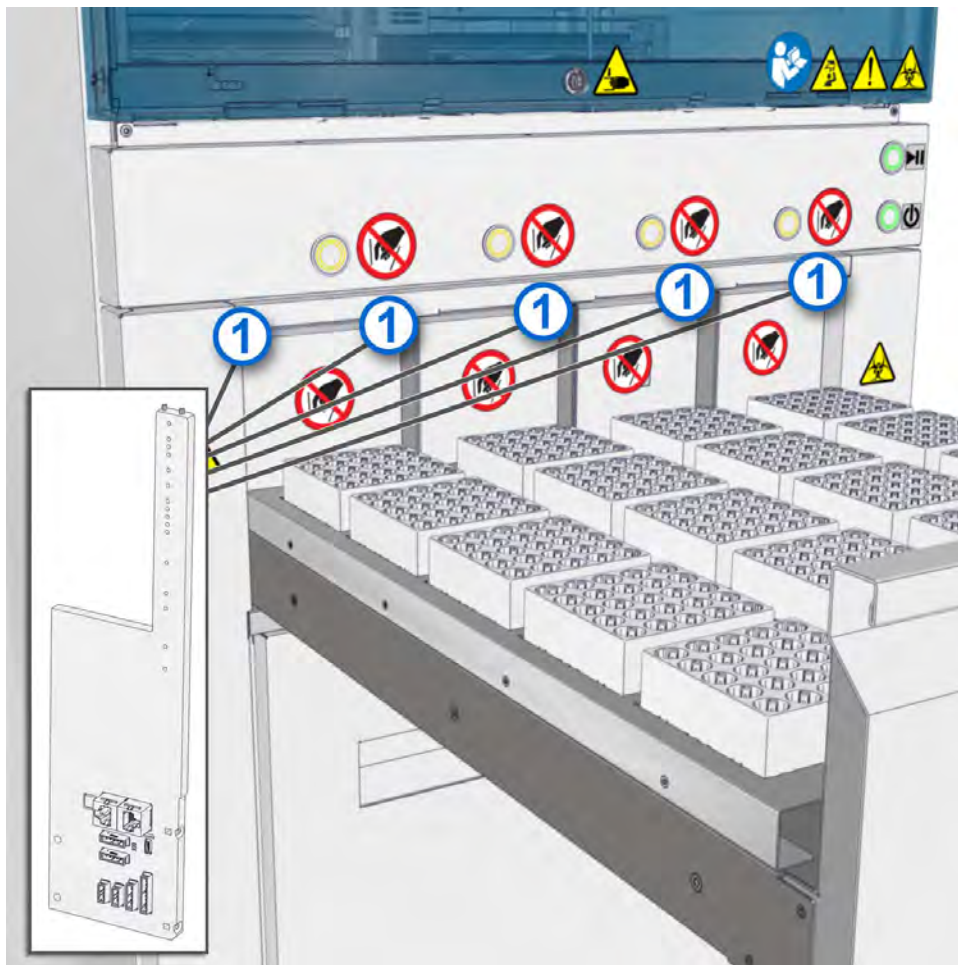


Legend:

1. Linear axes: Enable three-dimensional movement of the robot. The linear axes are arranged at right angles to each other in the x-y-z direction.

2. Robot: Uses the robot gripper to load and unload sample tubes in CARs and racks.
3. Robot gripper: Used with the robot to load and unload sample tubes in CARs and racks.
4. Bar code reader: Reads the sample bar codes and sends the information to the control system. The bar code reader is located at the lower end of the robot.
5. Permanent magnets: Secure FlexRacks on RackPorts.
6. FlexRacks: Hold samples in an upright position.
7. RackPort: Inserted into a drawer to support FlexRacks.
8. Track: Composed of lane elements and serves as the structure along which CARs move to transport samples to modules.
9. AccessPoint: Stops and holds CARs for processing such as reading bar codes, loading tubes, and unloading tubes. One or two AccessPoints are located on the adjacent track.

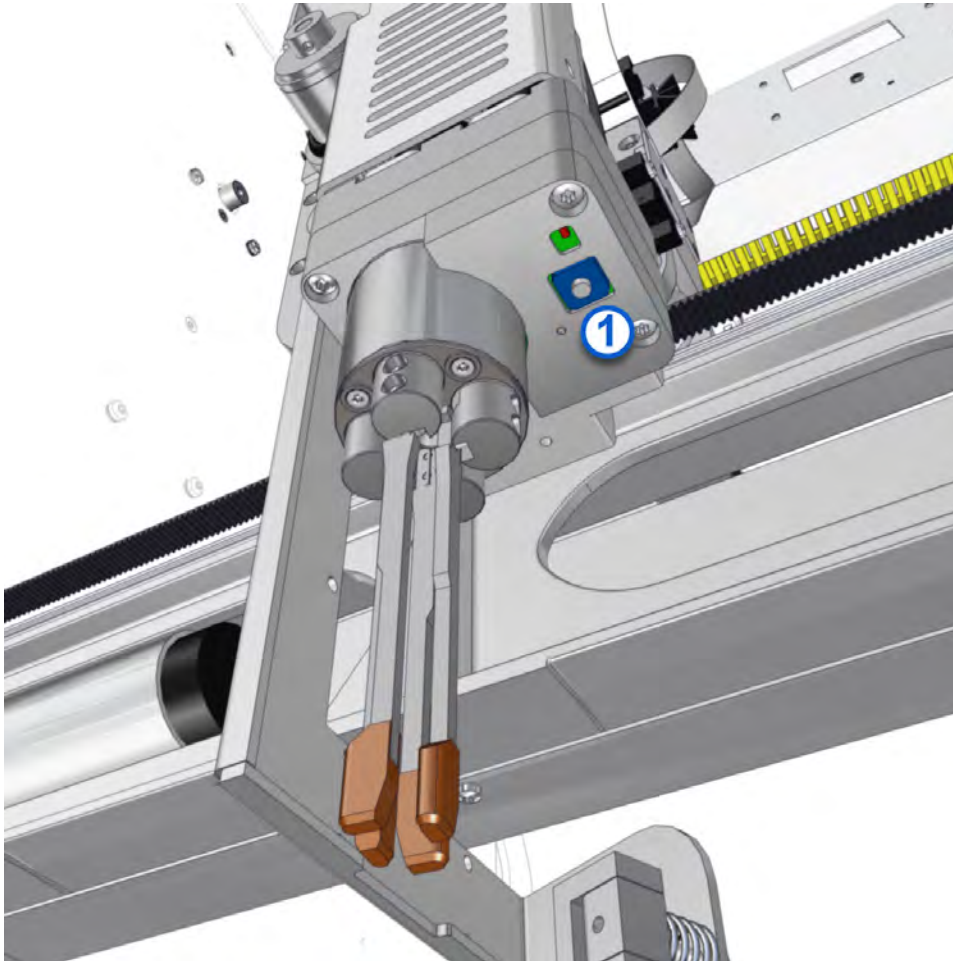
**Figure 9: Photoelectric sensors**



**Legend:**

1. Photoelectric sensors: Detect the loading status of RackPorts and any manual intervention in the drawer. Photoelectric sensors are used to stop the closing operation if an object or a body part is placed between the drawers and the housing. These sensors are located on the sides of the drawer inserts and form a light grid.

Figure 10: 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...**

[Input/Output Module overview](#), page 49

[Robot](#), page 54

[Control systems](#), page 55

[Monitor](#), page 55

[Bar code reader](#), page 55

**Robot**

The robot transports samples into output and error areas on the Input/Output Module. During transport, the sample is aligned so that the bar code can be read by modules and analyzers. The robot loads and unloads samples from the CARs and racks. The robot has a bar code reader that reads the sample bar codes.

**Related information...**

[Input/Output Module design and function](#), page 50

**Control systems**

Sensors on the Input/Output Module components monitor correct implementation, recognition, and compliance with safety requirements.

**Recognition**

- Loading status in the drawers
- RackPorts
- Bar code
- Tube diameter for transport by robot

**Monitoring**

Manual intervention in the robot work area

**Related information...**

[Input/Output Module design and function](#), page 50

**Monitor**

The touchscreen user interface is used to configure modules according to user requirements. Use is similar for all modules.

The Input/Output Module includes the following options:

- Display of system messages and user interface for troubleshooting
- Area assignment for input and output
- Performance of service and maintenance work
- Display of module status

**Related information...**

[Input/Output Module design and function](#), page 50

**Bar code reader**

In accordance with Clinical and Laboratory Standards Institute (CLSI) document AUTO02-A2, a sample is identified by a bar code, which is read during transport to or from the CAR.

A maximum of four different bar code types can be read individually or in combination with each other:

- Codabar with and without check digit
- Code 39 with and without check digit
- Code 128
- Interleaved 2 of 5 with and without check digit

Samples with unrecognized bar codes are routed to a designated area in the Input/Output Module.



**CAUTION: Incorrectly applying a bar code may constitute a health hazard for patients.**

Illegible or incorrectly applied bar codes cause incorrect patient results. Bar codes with checksums are recommended for use on the laboratory automation system. For more information, see the sample bar code label technical data in this manual.

**NOTE:** Contact an Abbott Laboratories representative or an authorized service representative to configure the bar code reader for different bar code types.

**Related information...**

*Input/Output Module design and function*, page 50

*Sample bar code label technical data*, page 93

## Descriptions of module statuses

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

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

**Related information...**

*Input/Output Module overview*, page 49

## Descriptions of drawer statuses

A drawer push button is located above each drawer. The push button illuminates one of three colors (green, yellow, or red) based on the status of the drawer. The following list provides descriptions of each color.



<b>Green (blinking)</b>	The module is initializing. The drawers open and close during initialization.
<b>Green</b>	The drawer is closed and the module is ready for operation.
<b>Yellow (blinking)</b>	The drawer is opening or closing.
<b>Yellow</b>	The drawer is fully open.
<b>Red (blinking)</b>	An error has occurred. The opening or closing of the drawer stops.
<b>Red</b>	An error has occurred and a message code is displayed on the touchscreen user interface. The opening or closing of the drawer stops.



**CAUTION: Do not reach into drawers.** Injury can occur when accessing the module interior while the module is powered on. Do not access the drawers while they are opening or closing. Only load the drawers when they are fully open. The drawer push button blinks when it is unsafe to access the drawer. **Never reach into the module through the drawers.**

#### Related information...

[Input/Output Module overview](#), page 49

## RackPorts overview

RackPorts are used to position racks for sample tubes and pipettors. They can be used in the drawers of the modules. The RackPort (Standard) is intended for use with FlexRacks. Other RackPorts are specially designed for use with analyzers and racks for consumables.

**NOTE:** Refer to the RackPorts Product Information Sheet for more information about sample tube constraints.

Radio-frequency identification (RFID) tags enable different configurations. RackPorts are equipped with RFID tags for automatic recognition on modules.

Contact the local representative or use country-specific contact information to request information about RackPorts.

### Related information...

*Use or function*, page 33

*Sample tube technical data*, page 95

## FlexRacks overview

FlexRacks are designed for use on modules. One FlexRack can hold 25 sample tubes with a tube diameter of 10.5 mm to 16 mm for uncapped tubes and 11.5 mm to 18 mm with at least 1 mm overhang for capped tubes.

**Figure 11: FlexRack**



**Related information...**

*Use or function*, page 33

## NOTES

## Introduction

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

**Related information...**

*Transportation, installation, disassembly, and disposal*, page 62

*Input/Output Module configuration*, page 68

## Transportation, installation, disassembly, and disposal

The GLP systems Track is transported and installed by an Abbott Laboratories representative or an authorized service representative.

After the laboratory automation system (LAS) has been installed, the individual components can no longer be moved. System relocation requires appropriate planning and an Abbott Laboratories representative or an authorized service representative to perform the work. Contact the distributor for more information.



**CAUTION: Inappropriate transport.** Track system components are heavy. Personal injury or damage to the track system is possible due to inappropriate transport. Transport of the track system should only be performed by an Abbott Laboratories representative or an authorized service representative. Contact the distributor for more information.



**CAUTION: Personal injury or damage to the track system.** Installation of the track system should only be performed by an Abbott Laboratories representative or an authorized service representative. Contact the distributor for more information.



**CAUTION: Personal injury or damage to the LAS.** Disassembly of the track system should only be performed by an Abbott Laboratories representative or an authorized service representative. The owner is obligated to dispose of the track system and all its components appropriately.



**CAUTION: Inappropriate disposal.** Personal injury or environmental damage may occur. Dispose of all individual track system components in compliance with the laws and guidelines applicable in the relevant country. Wear personal protective equipment when disposing of each component.



**CAUTION: Biological RISKS.** Track system components may expose the operator to potentially infectious material. Before track system components can be disposed, decontamination is required.



**CAUTION: Risk of injury due to heavy loads.** During installation, disassembly, or disposal of the track system, the modules may move unexpectedly and trap persons. While the track system is being installed, disassembled, or disposed, no unauthorized persons are permitted in the laboratory area. Be sure to move heavy loads slowly and carefully.



**CAUTION: Risk of injury or property damage due to heavy loads.** Track system components are heavy. Personal injury or damage to the track system or laboratory property is possible due to inappropriate installation. Ensure that the laboratory floor is structurally capable of supporting the load of the track. Installation of the track system should only be performed by an Abbott Laboratories representative or an authorized service representative. Contact the distributor for more information.

**Related information...**

*Installation procedures and special requirements*, page 61

*Track installation*, page 63

*Spiral tower installation requirements*, page 63

*Input/Output Module installation requirements*, page 64

*Typical floor loading*, page 66

## Track installation

Before the installation of the GLP systems Track, an Abbott Laboratories representative confirms that the site is prepared. The system location must meet environmental specifications and electrical requirements before the representative can install the system.

The representative unpacks, positions, and installs the system. During the installation, the representative performs the system setup and confirms that the system operates within the manufacturer's specifications.

After the installation, the customization or configuration of the system may be performed before any testing is initiated.

**IMPORTANT:** Incorrect installation can cause damage to the track and modules and system errors.

**Related information...**

*Transportation, installation, disassembly, and disposal*, page 62

*Laboratory automation system technical data*, page 92

*Track technical data*, page 98

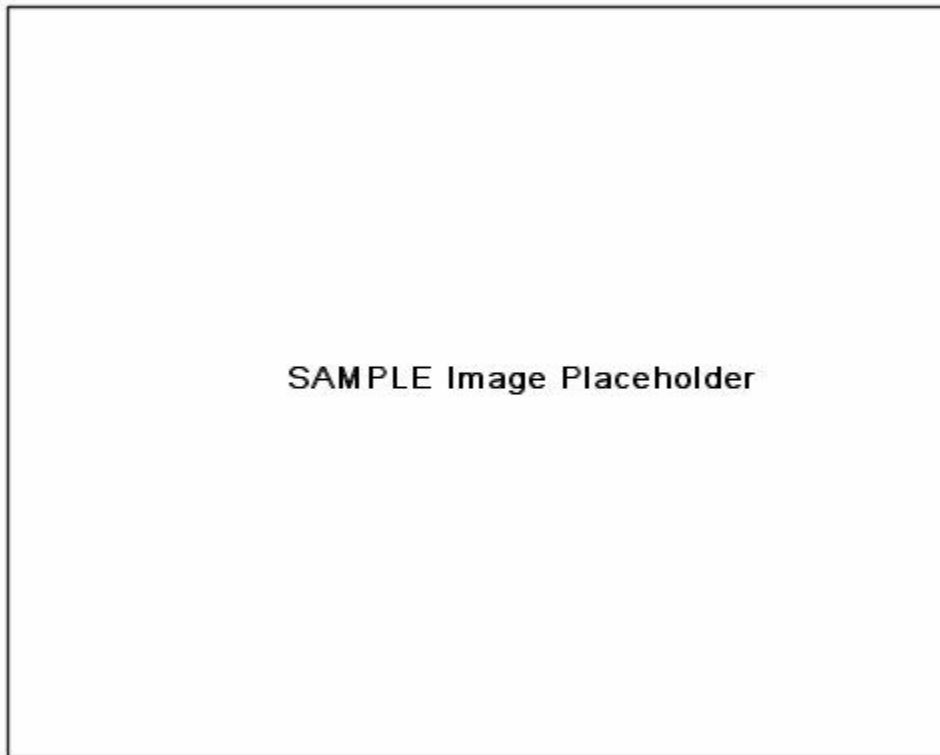
## Spiral tower installation requirements

Spiral towers may only be installed indoors. 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 5: Floor area specifications**

<b>Evenness tolerance requirement</b>	Permissible deviation: $\pm 5$ mm over 15 m
<b>Material requirement</b>	Incompressible material such as concrete

Figure 12: Floor area measurements in meters



**Legend:**

1. Spiral tower
2. Work and service area

**Related information...**

[Transportation, installation, disassembly, and disposal](#), page 62

## Input/Output Module installation requirements

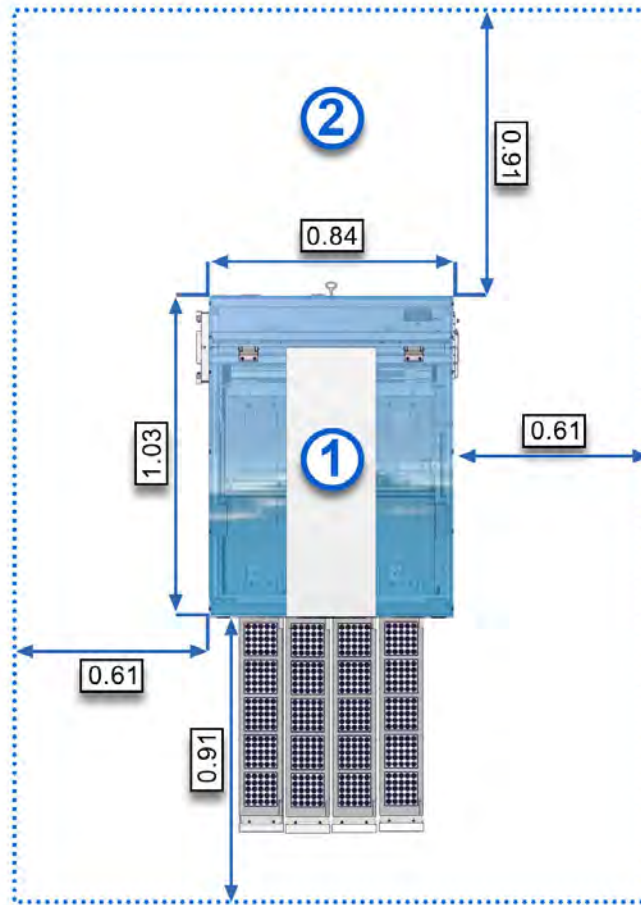
The Input/Output Module (IOM) may only be installed indoors. Water connections are not required. Contact an Abbott Laboratories representative or an authorized service representative for more information about service requirements. Facilities must fulfill the floor area and height requirements.

**Table 6: Floor area specifications**

<b>Load-bearing weight</b>	295 kg/m <sup>2</sup>
<b>Evenness tolerance requirement</b>	Permissible deviation: ± 5 mm over 15 m
<b>Compensation with adjustable feet</b>	Maximum of 10 mm
<b>Material requirement</b>	Incompressible material such as concrete



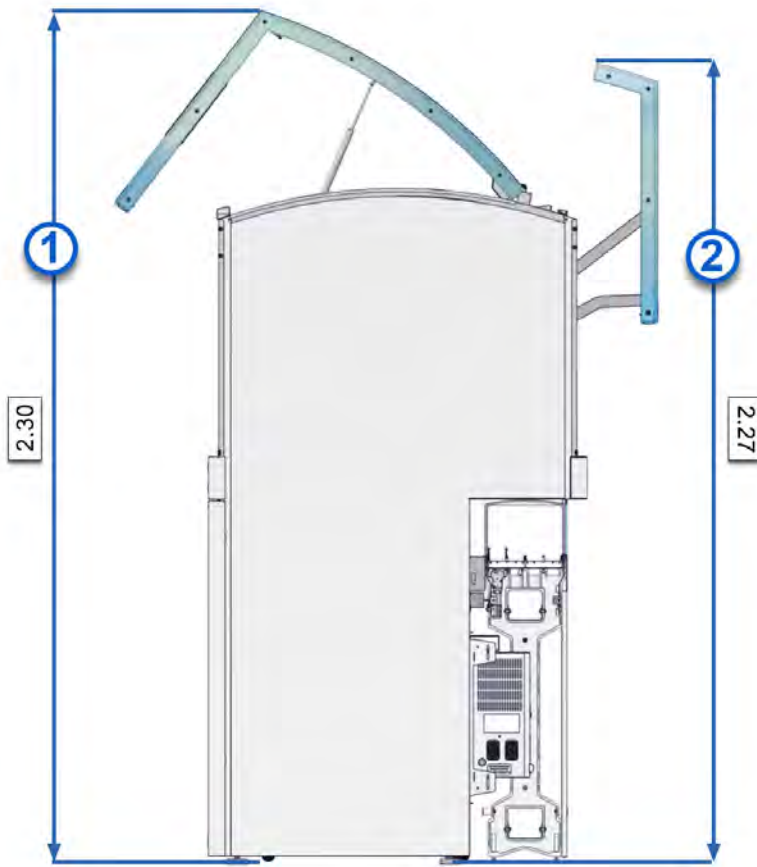
Figure 13: Floor area measurements in meters



**Legend:**

- 1. IOM
- 2. Work and service area

Figure 14: Height measurements in meters



**Legend:**

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

**Related information...**

*Transportation, installation, disassembly, and disposal*, page 62

*Input/Output Module technical data*, page 100

## Typical floor loading

Floor loading conditions must be considered when the laboratory is planned. Floor loading cannot exceed 500 kg/m<sup>2</sup>. For example, an 80 cm track section with both a 5 V and a 24 V power supply along with a segment controller has a floor loading measurement of 239 kg/m<sup>2</sup>. This measurement represents the heaviest weight for a track section.

**NOTE:** Floor loading is the distribution of force at the pads on a leveled system. Distributed loads vary with the mechanical linking of modules and pad adjustment.

**Related information...**

*Transportation, installation, disassembly, and disposal*, page 62

## Input/Output Module configuration

Areas in the module drawers can be configured for sample input and output, loading and unloading racks, and a manual archive.

### Related information...

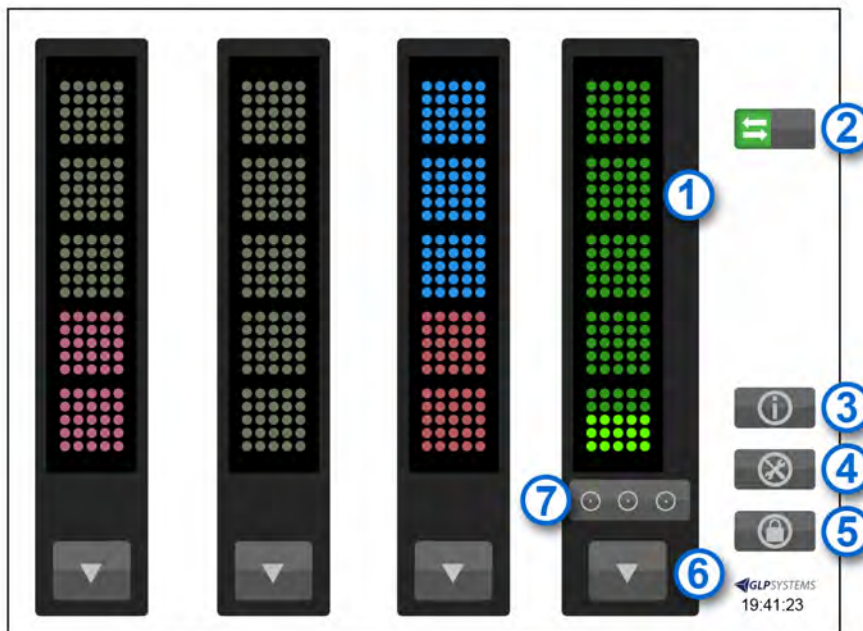
*Installation procedures and special requirements*, page 61

*Main menu screen (IOM)*, page 68

### Main menu screen (IOM)

After successful initialization of the module, the Main menu screen (IOM) is displayed with the following screen elements.

Figure 15: Main menu screen (IOM)



### Legend:

1. Drawer image: Shows the drawers equipped with FlexRacks and configured areas.
2. **Online/Offline** button with pause function: Places the module online and offline and pauses the module.
3. **Information** button: Navigates to the Information screen.
4. **Configuration** button: Navigates to the Configuration screen.
5. **Login** button: Navigates to the Login screen.
6. **Open/Close** drawer button: Opens and closes the drawers.
7. **Open drawer** icon: Indicates that the drawer is open.

## Section 2

### Related information...

[Input/Output Module configuration](#), page 68

[Login screen](#), page 69

[Information screen](#), page 70

[Configuration screen](#), page 72

[Using drawers with FlexRacks](#), page 73

[Using racks](#), page 78

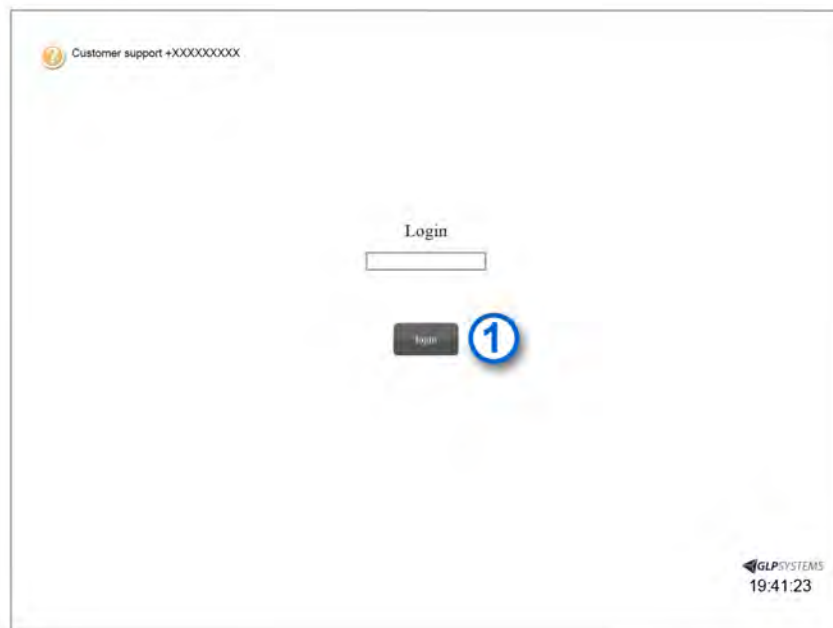
[Power on the module](#), page 191

### 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 16: Login screen**



### Legend:

1. Login button

### Related information...

[Main menu screen \(IOM\)](#), page 68

[Access the Login screen](#), page 70

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


### Related information...

[Login screen](#), page 69

## Information screen

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

<b>Module build</b>	The firmware version of the module controller.
<b>Module MAC</b>	The MAC address of the module controller Ethernet port.
<b>Module IP</b>	The IP address of the module controller.
<b>ControllerId</b>	The ID of the module controller.
<b>ControllerName</b>	The name of the module controller.
<b>Module up - time in minutes</b>	The time elapsed since the start.
<b>Module samples managed</b>	The current number of samples being managed by the module.
<b>Module input operations</b>	The number of samples placed on the track since the start.
<b>Module output operations</b>	The number of samples moved from the track since the start.

<b>Module controller status</b>	The current internal status of the module controller.
<b>Active Error</b>	The message code of the currently active error.
<b>Last active error</b>	The message code of the last active error.
<b>Barcode read enabled</b>	The indicator for whether a bar code reader has been activated.
<b>RobotSample X Script Version</b>	The script version for one of the two robot controllers.
<b>RobotSample YZRG Script Version</b>	The script version for the other robot controller.
<b>Barcode Read Errors</b>	The number of samples with failed bar code readings since the start.
<b>RobotSample operations</b>	The number of movements the robot has performed since the start.
<b>Module total operation time</b>	The time elapsed since the start in seconds.
<b>Display ID</b>	The name of the display component.
<b>Display IP address</b>	The IP address of the display component.
<b>Display MAC address</b>	The MAC address of the display component Ethernet port.
<b>Display sms4display build</b>	The firmware version of the display component.
<b>Display libsms4json build</b>	The version of the JSON library of the display component.
<b>Display Qt version executable/environment</b>	The version of the Qt framework library used by the display component.
<b>Display OS/Kernel</b>	The operating system version of the display component.
<b>CAN available</b>	The indicator for whether the display has a CAN connection.
<b>Display memory total/free MB</b>	The free memory of the display component.
<b>Exit button </b>	Navigates to the Main menu screen (IOM).

**Related information...**



*Main menu screen (IOM), page 68*

*Access the Information screen, page 72*

**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 (IOM), tap the **Information** button .
2. On the Information screen, tap the **Exit** button  to return to the Main menu screen (IOM).

**Related information...**

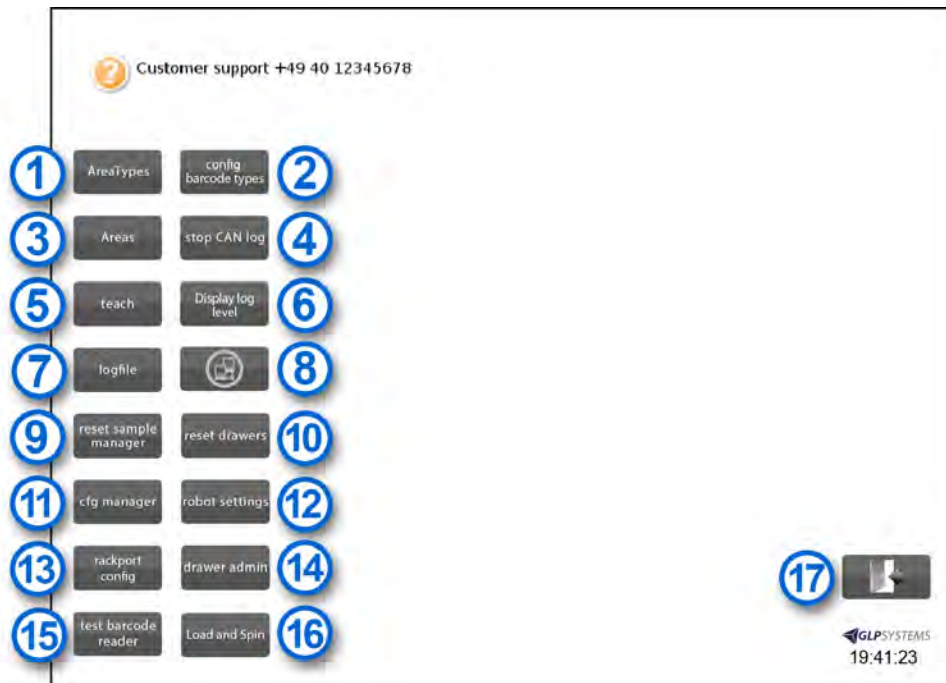
*Information screen, page 70*

**Configuration screen**

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

**NOTE:** Only the **AreaTypes, Areas, Load and Spin** buttons are available to the operator. The other buttons are available only to an Abbott Laboratories representative or an authorized service representative.

**Figure 17: Configuration screen**





**Legend:**

1. **AreaTypes** button: Navigates to the Create AreaTypes screen.
2. **config barcode types** button: Navigates to the Barcode type settings screen.
3. **Areas** button: Navigates to the Create and Configure Areas screen.
4. **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**.
5. **teach** button: Navigates to the Teaching screen.
6. **Display log level** button: Navigates to the Display logfiles level settings screen.
7. **logfile** button: Navigates to the log files.
8. **Network** button: Navigates to the Network setting screen.
9. **reset sample manager** button: Resets the samples from the module.
10. **reset drawers** button: No functionality is available.
11. **cfg manager** button: Navigates to the Configuration settings screen.
12. **robot settings** button: Navigates to the Robot settings screen.
13. **rackport config** button: No functionality is available.
14. **drawer admin** button: Navigates to the Drawer settings screen.
15. **test barcode reader** button: Navigates to the Barcode reader test screen.
16. **Load and Spin** button: Allows performing a centrifuge speed independent measurement
17. **Exit** button: Navigates to the Main menu screen (IOM).

**Related information...**



[Main menu screen \(IOM\)](#), page 68

[Access the Configuration screen](#), page 73

**Access the Configuration screen**

**Required module**      Online or Offline  
**status**

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

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

**Related information...**

[Configuration screen](#), page 72

**Using drawers with FlexRacks**

Each FlexRack or drawer in the Input/Output Module can be subdivided into different areas. In this process, each area is assigned a designated usage.



**CAUTION: Risk of cross contamination.** The placement of 16 mm x 100 mm sample tubes next to each other in FlexRacks can cause robot gripper errors. These errors can cause cross contamination of sample matter, resulting in delayed or incorrect results. For any affected samples, the results should be assessed separately by trained personnel. When loading 16 mm x 100 mm sample tubes into FlexRacks, place the tubes apart from each other. Contact an Abbott Laboratories representative or an authorized service representative if help is needed to integrate this option into the laboratory workflow.



**CAUTION: Risk of infection due to contamination.** The placement of 16 mm x 100 mm sample tubes next to each other in FlexRacks can cause robot gripper errors. Spilled sample matter from the sample tubes may cause infections due to contact with non-intact skin or mucous membranes. Wear personal protective equipment while operating the LAS. Avoid direct contact with the sample matter. Follow all disinfection instructions specified by the laboratory for contaminated areas. When loading 16 mm x 100 mm sample tubes into FlexRacks, place the tubes apart from each other. Contact an Abbott Laboratories representative or an authorized service representative if help is needed to integrate this option into the laboratory workflow.

Designated usage	Description
<b>Error</b>	The error area is used to load any samples with errors automatically. This process requires the operator to remove the samples manually, troubleshoot the causes of the errors, and return the samples to the input area.
<b>Input</b>	Samples are manually placed into the input area and are distributed by the laboratory automation system.
<b>Output</b>	Samples are automatically sorted into the respective, defined output areas. This process requires the operator to remove the samples manually.

**Related information...**

[Main menu screen \(IOM\)](#), page 68

[Defining areas](#), page 74

[Create an area type](#), page 75

[Configure a new area](#), page 75

[Edit properties of an area](#), page 76

[View information about an area](#), page 77

[Delete an area](#), page 77

**Defining areas**

Input and output areas are defined first by creating the area on the touchscreen user interface. Then, each area is configured with a unique ID and color.

The Configuration screen displays options to create and configure areas.

**NOTE:** Settings may be configured only by trained laboratory personnel or by an Abbott Laboratories representative or an authorized service representative.

**NOTE:** The operator can define the colors.

**Related information...**

[Using drawers with FlexRacks](#), page 73

**Create an area type**

**Required module status**      Offline

Perform this procedure to create an area type in the module.

1. On the Main menu screen (IOM), tap the **Configuration** button.
2. On the Configuration screen, tap **Area Types**.
3. On the Create AreaTypes screen, tap the area name for the required ID.  
The virtual keyboard is displayed.
4. In the **Id** text box, type the name of the area.
5. Tap the **Enter** key to confirm the selection.
6. Tap the color field for the area to be created.  
The range of available colors is displayed.
7. Select an area color by performing one of the following steps:
  - Tap an area color in the range of available colors.
  - In the **Color** text box, enter the hex values.
8. To assign additional area names or colors, repeat steps 3 (page 75) through 7 (page 75).
9. To save the edits to the areas, tap the **Right Arrow** button.
10. When the **Update Area Types** message is displayed, tap **Cancel** to acknowledge the update notification.  
The Configuration screen is displayed.
11. Place the module online.

**Related information...**

[Using drawers with FlexRacks](#), page 73

[Place the module online](#), page 193

**Configure a new area**

**Required module status**      Offline

Perform this procedure to configure an area in the module.

1. On the Main menu screen (IOM), tap the **Configuration** button.

2. On the Configuration screen, tap **Areas**.
3. On the Create and Configure Areas screen, tap **new**.  
The **step 1** tab of the Properties menu is displayed.
4. In the list on the left side of the Properties menu, tap the color of the area to configure.  
The selected area is displayed in the area display.
5. Tap the drawer for the area to be defined.  
The selected drawer is displayed in the component display.
6. In the **rack start** and **rack end** boxes, tap the **Up Arrow** and **Down Arrow** buttons to define the FlexRack position inside the drawers.  
The positions are arranged from 1 to 5 from the bottom to the top of the drawer.
7. In the **position start** and **position end** boxes, tap the **Up Arrow** and **Down Arrow** buttons to define the positions inside the FlexRacks.  
The positions are arranged from 1 to 25 from the lower right (position 1) to the upper left (position 25) of the FlexRack.
8. To confirm the settings and move to the **step 2** tab, tap **Next**.
9. In the **Characteristics** list in the **step 2** tab, tap **usage** to open the usage list.  
**NOTE:** The **Characteristics** list has information about the tube type, such as capped, priority, and fluid type.
10. In the **usage** list, tap the appropriate usage for the area to configure.
11. To confirm the settings and move to the **step 3** tab, tap **Next**.  
**NOTE:** Only an Abbott Laboratories representative or an authorized service representative may configure additional settings.
12. To save the configuration settings, tap **Create**.  
To cancel the configuration settings, tap **Cancel**.
13. When the **Update 1 area: 1 added** message is displayed, tap **Cancel** to acknowledge the update notification.  
The Create and Configure Areas screen is displayed.
14. Place the module online.

#### Related information...

[Using drawers with FlexRacks](#), page 73

[Place the module online](#), page 193

#### Edit properties of an area

**Required module status**      Offline

Perform this procedure to edit the properties of an area in the module.

1. On the Main menu screen (IOM), tap the **Configuration** button.
2. On the Configuration screen, tap **Areas**.
3. On the Create and Configure Areas screen, tap **edit** in the row of the area to edit.  
The **step 1** tab of the Properties menu is displayed.
4. In the list on the left side of the Properties menu, tap the color of the area to edit.  
The selected area is displayed in the area display.
5. Edit the selected area.
6. To save the configuration settings, tap **Update**.  
To cancel the configuration settings, tap **Cancel**.
7. When the **Update 1 area: 1 updated** message is displayed, tap **Cancel** to acknowledge the update notification.
8. Tap the **Exit** button.  
The Create and Configure Areas screen is displayed.
9. Place the module online.

#### Related information...

[Using drawers with FlexRacks](#), page 73

[Place the module online](#), page 193

#### View information about an area

Perform this procedure to view information about an area in the module.

1. On the Main menu screen (IOM), tap a defined area.  
The area information is displayed.
2. Tap **OK** to close the informational message.

#### Related information...

[Using drawers with FlexRacks](#), page 73

#### Delete an area

**Required module status**      Offline

Perform this procedure to delete an area from the module.

1. On the Main menu screen (IOM), tap the **Configuration** button.
2. On the Configuration screen, tap **Areas**.
3. On the Create and Configure Areas screen, tap **delete** in the row of the area to delete.

4. When the confirmation message is displayed, tap **yes** to delete the area.  
The area is deleted.
5. When the **Delete area** message is displayed, tap **Cancel** to acknowledge the update notification.
6. Tap the **Exit** button.  
The Create and Configure Areas screen is displayed.
7. Cycle power to the module.

**Related information...**

[Using drawers with FlexRacks](#), page 73

[Place the module online](#), page 193

[Place the module offline](#), page 193

[Cycle power to the module](#), page 190

**Using racks**

Drawer areas in the Input/Output Module can be used to load and unload sample tubes to store. For this purpose, RackPorts equipped with a radio-frequency identification (RFID) tag for automatic recognition on modules are required.

Samples can be inserted into the drawers individually in different rack types. For this purpose, appropriate RackPorts are required. Each RackPort has an RFID tag that is recognized by an RFID reader in the module. The RFID tag is included when a RackPort is ordered. For all rack types, the samples can be sorted within the analyzer-specific racks. Drawers can be opened independently of each other.

The setting to assign rack IDs automatically or manually is configured by an Abbott Laboratories representative or an authorized service representative.

**NOTE:** Areas within the RackPorts are configured by an Abbott Laboratories representative.

**Related information...**

[Main menu screen \(IOM\)](#), page 68

[Replace a rack and edit the rack ID](#), page 78

[Load or unload a rack in the module drawer](#), page 79

**Replace a rack and edit the rack ID**

**Prerequisite**                    The rack ID setting is configured as manual.

Perform this procedure to replace a rack in a drawer and edit the rack ID in the module.

1. To open the drawer, press the drawer push button or tap the **Open/Close** button on the touchscreen user interface.



**CAUTION:** A minimum clearance between the module and the operator is required to avoid injury when opening the drawer.

**IMPORTANT:** Do not pull on the drawer handle to open the drawer. Pulling on the drawer handle causes an error status for the drawer and does not fully open the drawer.

2. Remove the rack.
3. Insert the new rack.
4. To close the drawer, press the drawer push button or tap the **Open/Close** button on the touchscreen user interface.
5. On the New Rack-ID? screen, tap **Yes, the RackId has changed**.
6. Tap the **Right Arrow** button to go to the next screen.
7. On the Enter RackId screen, type the new rack ID.
8. To save the rack ID and exit the screen, tap the **Right Arrow** button.

**NOTE:** If the drawer is opened and closed without replacing the rack, tap the **No, the RackID has not changed**. option on the New Rack-ID? screen. Tap the **Right Arrow** button to exit the screen and continue using the assigned rack ID.

#### Related information...

[Using racks](#), page 78

### Load or unload a rack in the module drawer

**Prerequisite** A drawer has been configured according to the service requirements.

**Required module status** Online

Perform this procedure to load or unload a rack in the module drawer.

**NOTE:** The setting to configure RackPorts and their designated usage must be configured by an Abbott Laboratories representative or an authorized service representative.

1. To open the drawer, press the drawer push button or tap the **Open/Close** button on the touchscreen user interface.



**CAUTION:** A minimum clearance between the module and the operator is required to avoid injury when opening the drawer.

**IMPORTANT:** Do not pull on the drawer handle to open the drawer. Pulling on the drawer handle causes an error status for the drawer and does not fully open the drawer.

2. Load or unload a rack on the RackPort.
3. To close the drawer, press the drawer push button or tap the **Open/Close** button on the touchscreen user interface.

**Related information...**

*Using racks*, page 78



## Introduction

The GLP systems Track is a customizable laboratory automation system that includes interfaces to various analyzers and control system components to automate sample processing in laboratories.

### **Related information...**

*General operation*, page 82

*Control system*, page 84

*Track Sample Manager functional description*, page 85

*Track Workflow Manager functional description*, page 89

*Input/Output Module operation*, page 90

## General operation

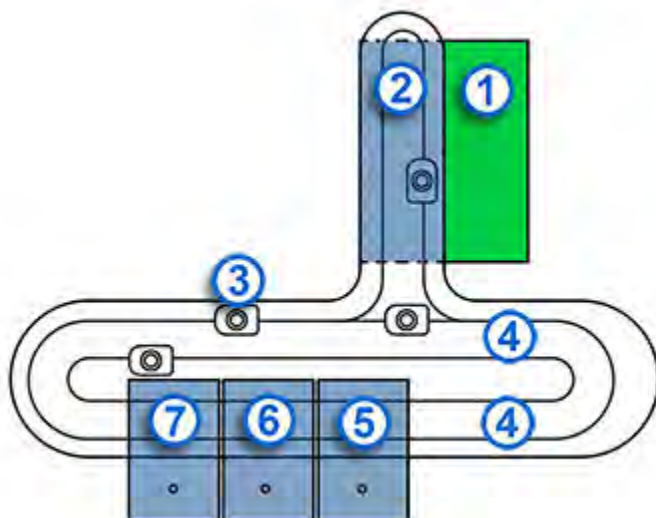
Autonomous transport vehicles, referred to as CARs, are used to distribute the samples. The CARs move toward the various modules and analyzers by using rightmost traffic paths on the track.

The samples are supplied to the laboratory automation system (LAS) by input modules such as the Input/Output Module (IOM). When a robot gripper picks up a sample, the sample bar code is read by a bar code reader and forwarded to an interface referred to as the Track Sample Manager (TSM). TSM uses the sample ID and the order data to calculate the optimum route to the individual analyzers.

TSM controls the CARs according to the received information. TSM uses the CAR ID to locate each CAR and each sample in the LAS.

Changes to the analysis order are supported in real time. Samples may be requested at any time. After the analysis processes have been completed, the samples are retained for a defined period of time for potential additional orders, are disposed, or are placed into racks for manual removal from the IOM.

**Figure 18: Example of an LAS design**



**Legend:**

1. Analyzers
2. Sample Access Line
3. CAR
4. Track
5. IOM configured as an output module
6. Aliquot Module
7. IOM configured as an input module

**Related information...**

*Principles of operation*, page 81

## Control system

The control system comprises the following components:

- Laboratory information system (LIS) including middleware
- Track Sample Manager (TSM)
- Track Workflow Manager (TWM)

**NOTE:** The LIS and middleware are not supplied with the GLP systems Track.

TSM is the central control unit and enables communication between the individual track system components and TWM. The following list describes the function of the control system:

<b>LIS</b>	Computer software and hardware used to manage medical testing and billing for specimens in a laboratory.
<b>Middleware</b>	The interface between the laboratory automation system (LAS) and the laboratory software. Information about the samples is entered in the middleware and forwarded to TWM.
<b>TSM</b>	Controls sample distribution in the LAS, communicates with the segment controllers and module controllers, and locates all CARs and samples at all times.
<b>TWM</b>	Translates individual sample orders into pre-analytical and post-analytical processing steps by using an algorithm.
<b>Module controller</b>	Controls the processes in the module and communicates with TSM.
<b>Segment controller</b>	Manages the communication between the active lane elements and TSM. The track can have several segment controllers.
<b>Active lane element</b>	Communicates with the segment controller from its track segment. A track segment can contain a maximum of 40 active lane elements (for example, switch, AccessPoint, PassPoint, or ChargePoint).

### Related information...

*Principles of operation*, page 81

*Track Sample Manager overview*, page 47

# Track Sample Manager functional description

Key functions of the Track Sample Manager are workflow and system monitoring.

## Related information...

*Principles of operation*, page 81

*Workflow*, page 85

*System monitoring*, page 87

## Workflow

The Track Sample Manager (TSM) communicates with all modules and active elements that are part of the GLP systems Track to transport samples from a start point to a target point and to route empty CARs to the designated location.

TSM controls the sample workflow, which requires the following items:

- Sample and CAR routing
- Track layout
- Routing strategy
- Routing instructions from the Track Workflow Manager

## Related information...

*Track Sample Manager functional description*, page 85

*Sample and CAR routing*, page 85

*Track layout*, page 86

*Routing strategy*, page 86

*Track Workflow Manager interface*, page 86

## Sample and CAR routing

The Track Sample Manager provides the following main functions of sample and CAR routing:

- Routes CARs through the track system.
- Instructs modules to process a sample.
- Stores information on all processing steps of the samples.
- Monitors track and module statuses on the user interface.

## Related information...

*Workflow*, page 85

## Track layout

The Track Sample Manager (TSM) is configured with the track layout of the laboratory track. The track layout is designed with the track designer and then is imported into TSM. All information on the module and track routes used is available.

### Related information...

[Workflow](#), page 85

## Routing strategy

On the Track Sample Manager, the routing strategy includes the following components:

- Samples are assigned to the target areas.  
**NOTE:** Area names can be specific to a single module or a module type.
- Loaded CARs are distributed based on the following criteria:
  - Analyzer selection (throughput versus uniform)
  - Sample prioritization (low, normal, or high)
  - Buffering for preferential processing of high-priority samples
- Empty CARs are provided based on the following criteria:
  - Module prioritization
  - High-priority park lanes
- Circles prevent individual segments from being overfilled.
- Disciplines ensure that samples remain in certain track areas.

### Related information...

[Workflow](#), page 85

## Track Workflow Manager interface

The workflow is structured by instructions that the Track Sample Manager (TSM) receives from the Track Workflow Manager (TWM). TWM is an external component that connects TSM to the laboratory information system (LIS):

- TWM provides target data and instructions for samples.
- TSM returns arrival information and processing results.
- A simulation environment is available for easier integration.
- Information on available LIS integrations is provided by request.

**Figure 19: Flowchart of communication paths****Legend:**

1. LIS with middleware
2. TWM
3. TSM
4. GLP systems Track

**Related information...**

[Workflow](#), page 85

[Communication paths](#), page 35

## System monitoring

The Track Sample Manager monitors the following items:

- Active track layout components
- Active lane elements, modules, and CARs
- Track performance statistics
- System log events
- Status package for sample and CAR routing

**Related information...**

[Track Sample Manager functional description](#), page 85

[System log](#), page 87

[Status package for sample and CAR routing](#), page 87

## System log

The system log of the Track Sample Manager displays all events in the system that require operator attention.

**Related information...**

[System monitoring](#), page 87

## Status package for sample and CAR routing

The status package for sample and CAR routing on the Track Sample Manager has the following features:

- Status monitor displays

- Individually configurable by the operator
- 55-inch LED display with Set-Top Box
- Usable with VESA wall mount

#### Related information...

*System monitoring*, page 87



## Track Workflow Manager functional description

The Track Workflow Manager (TWM) is a software interface between the laboratory information system and the Track Sample Manager of the GLP systems Track.

TWM translates individual sample orders into pre-analytical, analytical, and post-analytical processing steps by using an algorithm.

### **Related information...**

*Principles of operation*, page 81

## Input/Output Module operation

Drawers are used to load and unload samples on the Input/Output Module (IOM).

FlexRacks in the RackPorts can be configured as input or output areas on a customer-specific basis and hold the samples in an upright position.

The IOM processes standard sample tubes of different sizes, capped or uncapped, and reads the sample IDs of the bar codes. The robot loads and unloads sample tubes from CARs and racks with the robot gripper. When the robot moves a sample, the bar code reader reads the sample bar code and sends the information to the Track Sample Manager (TSM). The exact location of the sample can be tracked on TSM.

For the input function, the robot removes the sample from the rack and places it into the CAR. For the output function, the robot removes the sample from the CAR and places it into the rack.

**NOTE:** Contact an Abbott Laboratories representative or an authorized service representative for more information about configuration.

### Related information...

*Principles of operation*, page 81

## Introduction

Before operating the GLP systems Track, become familiar with system performance characteristics and specifications.

**Related information...**

*Technical data*, page 92

## Technical data

Technical documents for a customized GLP systems Track are distributed to the owner in separate attachments. The following separate documents are available:

- Track layout
- Energy plan
- Service documentation
- Supplier documentation (optional)
- RackPort Product Information Sheet

### Related information...

*Performance characteristics and specifications*, page 91

*Laboratory automation system technical data*, page 92

*Sample bar code label technical data*, page 93

*Sample tube technical data*, page 95

*Sample processing specifications*, page 98

*Track technical data*, page 98

*CAR technical data*, page 99

*Track Sample Manager technical data*, page 99

*Track Workflow Manager technical data*, page 100

*Input/Output Module technical data*, page 100

## Laboratory automation system technical data

**Table 7: Laboratory automation system technical data**

<b>Altitude</b>	30.8 m (100 ft) below sea level to 2000 m (6561 ft) above sea level
<b>Ambient temperature</b>	<ul style="list-style-type: none"> <li>• During operation: 15°C to 30°C</li> <li>• During transport and storage: -20°C to 60°C in noncondensing environment for 30 h without loss of functionality</li> </ul>
<b>Relative humidity</b>	During operation: 30% to 80%, noncondensing
<b>Radio-frequency identification (RFID)</b>	Frequency: 13.56 MHz ISO 15693 applied for used RFID transponder
<b>Sound pressure level</b>	Maximum of 65 dBA
<b>Placement</b>	<ul style="list-style-type: none"> <li>• Install indoors only. Do not install the system near direct sunlight.</li> </ul>

	<ul style="list-style-type: none"> <li>Do not install the system near drafts from heating and cooling vents.</li> </ul>
<b>Storage and transport</b>	<ul style="list-style-type: none"> <li>Keep dry.</li> <li>Fragile: Handle with care.</li> </ul>

**Related information...**

*Technical data*, page 92

*Track installation*, page 63

## Sample bar code label technical data

**Table 8: Sample bar code label technical data**

<b>Bar code</b>	<ul style="list-style-type: none"> <li>Approved: <ul style="list-style-type: none"> <li>Matte paper</li> <li>Maximum of one readable bar code per sample tube (excluding sample labels)</li> </ul> </li> <li>Not approved: <ul style="list-style-type: none"> <li>Gloss or coated paper</li> <li>More than one bar code per sample tube (excluding sample labels)</li> </ul> </li> </ul>
<b>Bar code label</b>	<ul style="list-style-type: none"> <li>Maximum of two bar code labels per sample tube: Maximum label thickness of 0.5 mm if the manufacturer printed the sample tube directly (that is, did not use paper or similar)</li> <li>Maximum of one bar code label per sample tube: Maximum label thickness of 0.5 mm if the manufacturer did not print the sample tube directly (that is, did use paper or similar)</li> </ul> <p><b>NOTE:</b> Bar code labels should meet the recommended guidelines and should be correctly affixed to sample tubes in accordance with CLSI document AUTO02-A2: Laboratory Automation: Bar Codes for Specimen Container Identification.</p> <p><b>IMPORTANT:</b> Incorrect bar code label placement or attachment on sample tubes may cause material damage when CARs are loaded and unloaded. For example, the sample tube may remain stuck in the robot gripper or the CAR may be lifted together with the sample. Observe the appropriate bar code label placement or attachment on the sample tubes.</p>
<b>Symbology</b>	<p>The following symbologies can be used on the laboratory automation system:</p> <ul style="list-style-type: none"> <li>Codabar with and without check digit</li> <li>Code 39 with and without check digit</li> </ul>

	<ul style="list-style-type: none"> <li>• Code 128</li> <li>• Interleaved 2 of 5 with and without check digit</li> </ul>
--	---

**Sample ID maximum length**

The following factors affect the number of characters that can fit on a sample bar code label:

- Sample bar code label length
- Sample bar code label placement
- Symbology
- Density
- Ratio
- Quiet zone

The following list provides the maximum allowable character lengths for the different bar code symbologies:

- Codabar**                      Maximum 19 characters for primary and secondary tube labels
- Code 39**                        Maximum 19 characters for primary tube labels  
Maximum 14 characters for secondary tube labels
- Code 128**                        Maximum 19 characters for primary and secondary tube labels
- Interleaved 2 of 5**            Maximum 18 characters for primary and secondary tube labels

**NOTE:** Check digit is supported for Codabar, Code 39, and Interleaved 2 of 5. Check digit transmission can also be enabled for Interleaved 2 of 5.

**Sample ID allowable characters**

The following table provides the allowable characters for the different bar code symbologies. Characters not listed in the table are intercepted at all bar code readers.

**Table 9: Sample ID allowable characters**

Symbol	ASCII Hex	Codabar	Code 39	Code 128	Interleaved 2 of 5
0-9	0x30 - 0x39	x	x	x	x
A-Z	0x41 - 0x5a	N/A	x	x	N/A
a-z	0x61 - 0x7a	N/A	N/A	x	N/A
-	0x2d	x	x	x	N/A

Symbol	ASCII Hex	Codabar	Code 39	Code 128	Interleaved 2 of 5
=	0x3d	N/A	N/A	x	N/A
space	0x20	N/A	x	x	N/A
.	0x2e	x	x	x	N/A
/	0x2f	x	x	x	N/A

**Related information...**

[Technical data](#), page 92

[Sample tube technical data](#), page 95

[Sample processing specifications](#), page 98

[Bar code reader](#), page 55

[Load samples into FlexRacks](#), page 195


[Load analyzer-specific racks](#), page 198

[Unload analyzer-specific racks](#), page 201

## Sample tube technical data

**Table 10: Sample tube technical data**


<b>Tube type</b>	<ul style="list-style-type: none"> <li>• Approved: Rounded bottom</li> <li>• Not approved: <ul style="list-style-type: none"> <li>– Pediatric (except for Greiner Bio-One MiniCollect Microtubes)</li> <li>– Flat bottom</li> <li>– Cone bottom</li> <li>– Sample cup</li> <li>– Tube with sample cup</li> <li>– Ridged lip</li> </ul> </li> </ul> <p><b>IMPORTANT:</b> Only use sample tubes that are approved for the laboratory automation system (LAS). Abbott Laboratories cannot accept responsibility if unapproved sample tube types are used.</p>
<b>Tube material</b>	<ul style="list-style-type: none"> <li>• Approved: Plastic or synthetic</li> <li>• Not approved: Glass</li> </ul>
<b>Tube height</b>	<ul style="list-style-type: none"> <li>• Uncapped: 65 mm to 102 mm</li> <li>• Capped: 81 mm to 110 mm</li> </ul>
<b>Tube diameter</b>	<ul style="list-style-type: none"> <li>• Uncapped: 10.5 mm to 16 mm</li> <li>• Capped: 11.5 mm to 18 mm with at least 1 mm overhang of cap over tube external diameter</li> </ul> <p><b>NOTE:</b> Two additional bar code labels increase maximum diameters by 0.5 mm.</p>

<b>Tube fill level</b>	<p>Maximum fill level: Distance between sample matter surface and top rim of tube is greater than 15 mm.</p> <p> <b>CAUTION: Do not exceed the maximum fill level of the sample tube.</b> Exceeding the maximum fill level may cause components to become contaminated by sample matter. Spilled sample matter may cause infections due to contact with non-intact skin or mucous membranes.</p>
<b>Cap type</b>	<ul style="list-style-type: none"> <li>• Approved:             <ul style="list-style-type: none"> <li>– Manufacturer safety caps (for example, push caps or screw caps)</li> <li>– GLP systems Track consumable caps (for example, ReCaps or ScrewCaps)</li> </ul> </li> <li>• Not approved:             <ul style="list-style-type: none"> <li>– Cap with flap</li> <li>– Rubber stopper closure</li> <li>– Cap with irregular top edge</li> <li>– Archiving cap</li> </ul> </li> </ul>
<b>Cap diameter</b>	<p>11.5 mm to 18.0 mm</p> <p><b>NOTE:</b> External diameter of the cap is minimally 1 mm greater than the tube.</p>
<b>Cap height</b>	<p>Minimum of 5 mm</p>

Additional sample tube types must be clarified with the device manufacturer and Abbott Laboratories. For questions or use of formats that are not specified in this manual, contact an Abbott Laboratories representative or an authorized service representative.

**Table 11: Pediatric sample tubes**

Approved	Not approved
<p>Greiner Bio-One MiniCollect Microtube (13 mm diameter x 75 mm height) is firmly connected to carrier tube (for children) and can be used on the following modules:</p> <ul style="list-style-type: none"> <li>• Input/Output Module</li> <li>• Decapper Module</li> <li>• SAL Alinity ci-series</li> <li>• Buffer Module</li> <li>• Centrifuge Module</li> </ul>	<p>Greiner Bio-One MiniCollect Microtube and carrier tube are separated. For example:</p> <ul style="list-style-type: none"> <li>• Serum 450533</li> <li>• Ethylenediaminetetraacetic acid (EDTA) 450530</li> <li>• Carrier tube 450417</li> </ul> <p>Otherwise, no processing can be performed on the LAS.</p>

 **CAUTION: Risk of injury due to incorrect use of sample tubes.** Incorrectly used sample tubes can cause robot gripper malfunctions. Spilled sample matter can cause contamination and severe injuries to the operator. Inadequate sample volume in sample tubes causes delays in diagnosis and treatment of patients.

- Only use sample tubes that are approved for the LAS.



- Immediately clean any contaminated areas of the LAS by using a laboratory-grade surface disinfectant.
- If a sample is spilled, ensure that the sample volume in the sample tube is adequate to perform the remaining tests.

**Figure 20: Sample tubes not approved****Legend:**

1. Flat bottom
2. Pediatric
3. Cone bottom
4. Sample cup
5. Tube with sample cup
6. Ridged lip

**Figure 21: Sample tube caps not approved**

**Legend:**

1. Cap with flap
2. Rubber stopper closure
3. Cap with irregular top edge
4. Archiving cap

**Related information...**

*Technical data*, page 92

*Sample bar code label technical data*, page 93

*Sample processing specifications*, page 98

*CAR design and function*, page 42

*Input/Output Module technical data*, page 100

*Input/Output Module safety*, page 224

*RackPorts overview*, page 58

*Load samples into FlexRacks*, page 195

*Load analyzer-specific racks*, page 198

*Unload analyzer-specific racks*, page 201

*Basic safety*, page 217

## 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.

**NOTE:** Use good laboratory practices to ensure proper sample handling. Ensure that all sample IDs are unique.

Refer to the supplemental and interface manuals for module-specific information about deviations and restrictions.

**Related information...**

*Technical data*, page 92

*Sample bar code label technical data*, page 93

*Sample tube technical data*, page 95

## Track technical data

**Table 12: Track technical data**

<b>Current</b>	<ul style="list-style-type: none"> <li>• 20 amperes per phase</li> <li>• Maximum 230 VAC per phase</li> </ul>
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<b>Power</b>	4600 watts per phase
<b>Supply voltage</b>	400 VAC, $\pm 10\%$ ; 3-phase
<b>Supply frequency</b>	50 Hz/60 Hz
<b>Electrical safety parameters</b>  <b>NOTE:</b> Electrical safety parameters have no bearing on performance.	<ul style="list-style-type: none"> <li>• Installation category: II (overvoltage category)</li> <li>• Pollution degree: 2</li> </ul>

**Related information...**

[Technical data](#), page 92

[Track installation](#), page 63

**CAR technical data****Table 13: CAR technical data**

<b>Approximate charging time</b>	Recharged from 10% to 90% in 3 h or fewer
<b>CAR capacity</b>	<ul style="list-style-type: none"> <li>• One sample tube per CAR</li> <li>• Total weight of sample tube: 20 g</li> </ul>
<b>Power source</b>	Rechargeable lithium-ion battery
<b>Rechargeable lithium-ion battery capacity, maximum moving time</b>	Maximum speed level for a minimum of 8 h without recharge of lithium-ion battery
<b>Speed profiles</b>	<ul style="list-style-type: none"> <li>• No speed: 0 mm/s on the track</li> <li>• Slow speed: 50 mm/s on the track with an accuracy of 15%</li> <li>• Normal speed: 150 mm/s on the track with an accuracy of 15%</li> <li>• Fast speed: 250 mm/s on the track with an accuracy of 15%</li> <li>• Hyperspeed: 350 mm/s on the track with an accuracy of 15%</li> </ul>

**Related information...**

[Technical data](#), page 92

**Track Sample Manager technical data****Table 14: Track Sample Manager (TSM) technical data**

<b>Platform</b>	Java Enterprise Edition (for GlassFish application servers)
<b>Database</b>	PostgreSQL
<b>Operating system</b>	Suse Linux Enterprise operating system

<b>Supported hardware environment</b> <b>NOTE:</b> Server hardware is not included in the scope of delivery.	Various (for example, HPE ProLiant ML110 Gen10 - Xeon Silver, 8 Cores)
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**NOTE:** Contact an Abbott Laboratories representative or an authorized service representative for more information about TSM technical data.

#### Related information...

[Technical data](#), page 92

## Track Workflow Manager technical data

**Table 15: Track Workflow Manager (TWM) technical data**

<b>Platform</b>	Java Enterprise Edition (for GlassFish application servers)
<b>Database</b>	PostgreSQL
<b>Operating system</b>	Suse Linux Enterprise operating system
<b>Supported hardware environment</b> <b>NOTE:</b> Server hardware is not included in the scope of delivery.	Various (for example, HPE ProLiant ML110 Gen10 - Xeon Silver, 8 Cores)

**NOTE:** Contact an Abbott Laboratories representative or an authorized service representative for more information about TWM technical data.

#### Related information...

[Technical data](#), page 92

## Input/Output Module technical data

**Table 16: Input/Output Module technical data**

<b>Throughput</b>	Minimum of 900 capped sample tubes per hour <b>NOTE:</b> 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.
<b>Capacity</b>	Four drawers with 125 sample tubes each for 500 sample tubes total when a RackPort (Standard) is used <b>NOTE:</b> Based on the selected RackPort, the maximum quantity of sample tubes can vary.
<b>Dimensions</b>	80 cm (width) x 103 cm (depth) x 188 cm (height)

<b>Weight</b>	267 kg (587 lb)
<b>Altitude</b>	30.8 m (100 ft) below sea level to 2000 m (6561 ft) above sea level
<b>Floor surface load</b>	Minimum of 500 kg/m <sup>2</sup>
<b>Sound pressure level</b>	Maximum of 65 dBA
<b>Waste heat</b>	Average at full capacity: 378 kJ/h
<b>Supply voltage</b>	220 VAC to 230 VAC, ± 10%
<b>Supply frequency</b>	50 Hz/60 Hz
<b>Power</b>	<ul style="list-style-type: none"> <li>• Nominal: 93 W</li> <li>• Peak: 343 W</li> <li>• 406 VA Max</li> </ul>

**NOTE:** Electrical lines are routed in the power ducts of the GLP systems Track.

**Related information...**

*Technical data*, page 92

*Sample tube technical data*, page 95

*Input/Output Module installation requirements*, page 64

## NOTES

## Introduction

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

### **Related information...**

*Start the GLP systems Track*, page 104

*Shut down the GLP systems Track*, page 105

*Perform an emergency shutdown*, page 106

*Log on to the Track Sample Manager (TSM)*, page 108

*Log on to the Track Workflow Manager (TWM)*, page 110

*Open and close the track hoods*, page 112

*Remove and replace the spiral entrance hoods*, page 115

*Open and close the spiral tower doors*, page 118

*Cycle power to an empty CAR*, page 120

*Track Sample Manager user interface*, page 122

*Track Workflow Manager user interface*, page 162

*Input/Output Module procedures*, page 187

## Start the GLP systems Track

**Prerequisite**            Front and rear module covers must be closed and locked.

Perform this procedure to start the GLP systems Track.

1. Verify that all CARs are located in the charge lanes and are being charged.
2. Verify that the track is free from any foreign objects.
3. Open the Track Sample Manager (TSM).
4. Ensure that the Track Workflow Manager (TWM) is running.
5. Ensure that a connection between TSM and TWM is established.
6. Use the On/Off push buttons to power on the modules.

### **Related information...**

*Operating instructions*, page 103

*CAR design and function*, page 42

*Troubleshooting*, page 249

*Log on to the Track Sample Manager (TSM)*, page 108

*Log on to the Track Workflow Manager (TWM)*, page 110

*Power on the module*, page 191



## Shut down the GLP systems Track

**Prerequisite**                      Verify that no samples are being processed on the GLP systems Track.

Perform this procedure to shut down the GLP systems Track.

1. Leave the Track Sample Manager (TSM) powered on.
2. Use the On/Off push buttons to power off the modules.
3. Verify that all CARs are located in the charge lanes and are being charged.

**NOTE:** The individual modules are powered off. The computer on which TSM is installed should remain powered on.

### **Related information...**

*Operating instructions*, page 103

*Power off the module*, page 192

## Perform an emergency shutdown

Perform this procedure to shut down the system when an emergency situation occurs.

1. Locate the disconnect switch at the rear of the track for each mains AC input power line or supply.
2. Observe the switch in the on position.



3. Turn the switch counterclockwise to the off position.





**CAUTION:** If more than one disconnect switch is provided, power off all switches to shut down the system.

**Related information...**

*Operating instructions*, page 103

## Log on to the Track Sample Manager (TSM)

**Prerequisite** Web access is configured on a workstation in the laboratory with access to the Track Sample Manager (TSM).

**NOTE:** The configuration of the customer network is performed by an Abbott Laboratories representative or an authorized service representative.

Perform this procedure to log on to TSM.

1. Launch the web browser.

**NOTE:** TSM supports the following browsers:

- Microsoft Edge
- Mozilla Firefox
- Google Chrome

Use of the most recent browser version with security patches is recommended. Comply with the information technology requirements of the facility.

2. Type the appropriate user-defined uniform resource locator (URL) in the address bar of the web browser:
  - If the track system uses a single-server setup where TSM and Track Workflow Manager (TWM) are housed on the same server, type the following URL to access TSM: `http://<GLP Firewall WAN IP>:7000/tsm-web/`
  - If the track system uses a dual-server setup where TSM and TWM are housed on separate servers, type the following URL to access TSM: `http://<Laboratory_IP_Address>:9000/tsm-web/`

**NOTE:** The port number (9000, 8000, or 7000) used depends on the server setup of the track system.

3. Press the **Enter** key.
4. On the TSM start screen, tap the preferred language in the **START TSM** list.

**NOTE:** Operators are prompted to select the language when logging on for the first time. To modify the language selection after the language was selected, enter the customized URL again.

5. In the **Authentication Required** window, type the user name and password.
6. Tap **OK** to display the Main menu screen (TSM).

**NOTE:** Operators should log off from the TSM user interface after each session.

### Related information...

[Operating instructions](#), page 103

*Main menu screen element descriptions (TSM), page 124*

*Start the GLP systems Track, page 104*

## Log on to the Track Workflow Manager (TWM)

### Prerequisite

Web access is configured on a workstation in the laboratory with access to the Track Workflow Manager (TWM).

**NOTE:** Workstation system requirements are specified in the service manuals for Track Sample Manager (TSM) and TWM operating systems.

**NOTE:** The configuration of the customer network is performed by an Abbott Laboratories representative or an authorized service representative.

Perform this procedure to log on to TWM.

1. Launch the web browser.

**NOTE:** TWM supports the following browsers:

- Microsoft Edge
- Mozilla Firefox
- Google Chrome

Use of the most recent browser version with security patches is recommended. Comply with the information technology requirements of the facility.

2. Type the appropriate user-defined uniform resource locator (URL) in the address bar of the web browser:

- If the track system uses a single-server setup where TSM and TWM are housed on the same server, type the following URL to access TWM: `http://<GLP Firewall WAN IP>:7000/re-web/`
- If the track system uses a dual-server setup where TSM and TWM are housed on separate servers, type the following URL to access TWM: `http://<GLP Firewall WAN IP>:8000/re-web/`

**NOTE:** The port number (9000, 8000, or 7000) used depends on the server setup of the track system.

3. Press the **Enter** key.
4. On the TWM start screen, tap the preferred language in the **START** list.

**NOTE:** Operators are prompted to select the language when logging on for the first time. To modify the language selection after this, enter the customized URL again.

5. In the **Authentication Required** window, type the user name and password.
6. Tap **Sign in** to display the Main menu screen (TWM).

**NOTE:** Operators should log off from the TWM user interface after each session.

**Related information...**

*Operating instructions*, page 103

*Main menu screen element descriptions (TWM)*, page 163

*Start the GLP systems Track*, page 104

## Open and close the track hoods

**Required materials**    Key

Perform this procedure to open and close the track hoods.

1. To unlock the track hood, insert the key [2] into the lock [1] at each end of the track hood and turn clockwise.

**Figure 22: Track hood lock and key**



2. Open the track hood.



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



**Figure 23: Track hood opened**

3. To lock the track hood, close the track hood.
4. Insert the key [2] into the lock [1] at each end of the track hood and turn counterclockwise.

**Related information...**

*Operating instructions*, page 103

*Track overview*, page 37

*Track sections*, page 37

*Clean the track hoods*, page 229

*Clean the lane elements*, page 229

*Clean the guiding slot*, page 230

*Clean the sensors*, page 231

*Clean the housing*, page 232

*Clean the charging contacts*, page 232

*Clean the sample holder*, page 233

*Clean the drive wheel and the wheel arch*, page 233

*Remove a CAR without a sample, page 236*

*Remove a CAR with a sample, page 236*

*Replace the front underseal of a CAR, page 237*

## Remove and replace the spiral entrance hoods

**Required materials**    Key

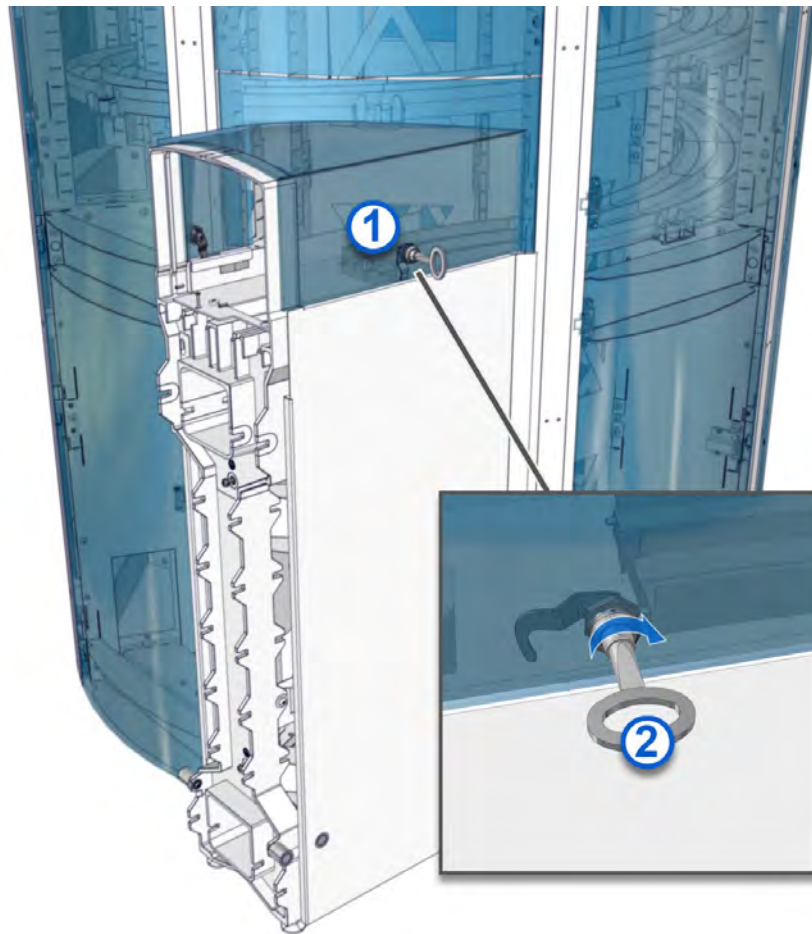
Perform this procedure to remove and replace the spiral entrance hoods.



**CAUTION: Mind or watch your hands.** Spiral entrance hoods can be opened and closed **only** by a trained operator. Finger pinches can occur when removing and replacing the hoods. Use caution when opening and closing spiral entrance hoods.

1. To unlock the spiral entrance hood, insert the key [2] into the front lock [1] and turn clockwise.

**Figure 24: Spiral entrance hood front lock and key**



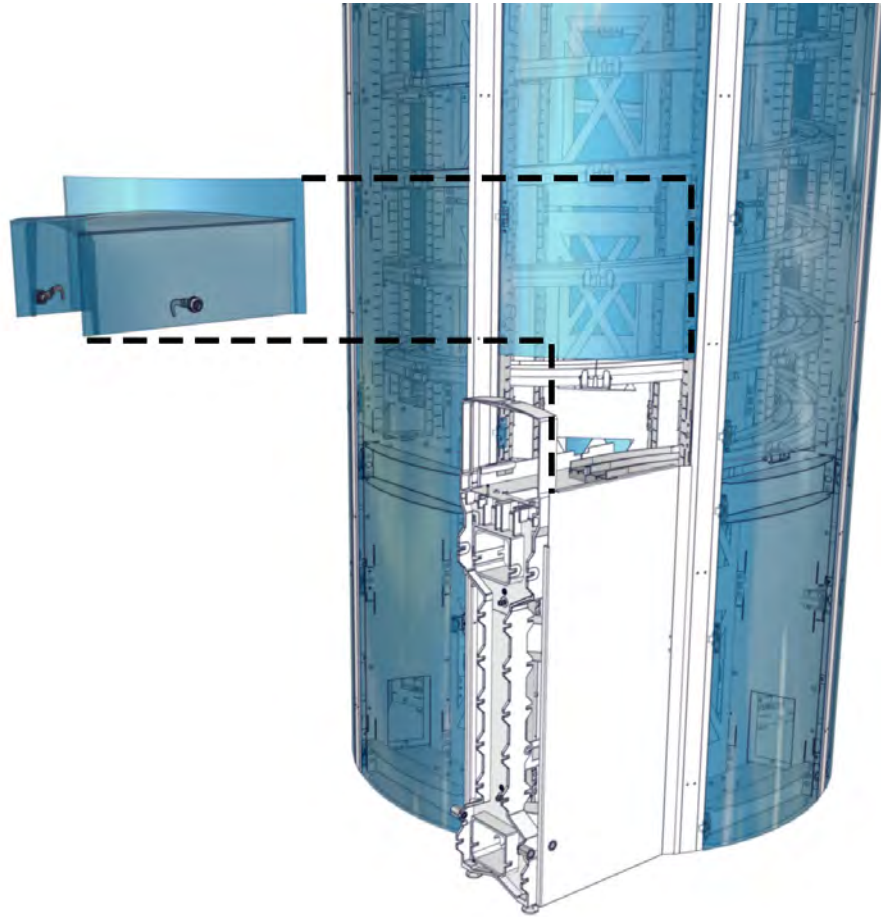
2. Insert the key [2] into the rear lock [1] and turn clockwise.

Figure 25: Spiral entrance hood rear lock and key



3. Remove the spiral entrance hood.

Figure 26: Spiral entrance hood removed



4. Replace the spiral entrance hood.
5. To lock the spiral entrance hood, insert the key [2] into the locks [1] and turn counterclockwise.

**Related information...**

*Operating instructions*, page 103

## Open and close the spiral tower doors

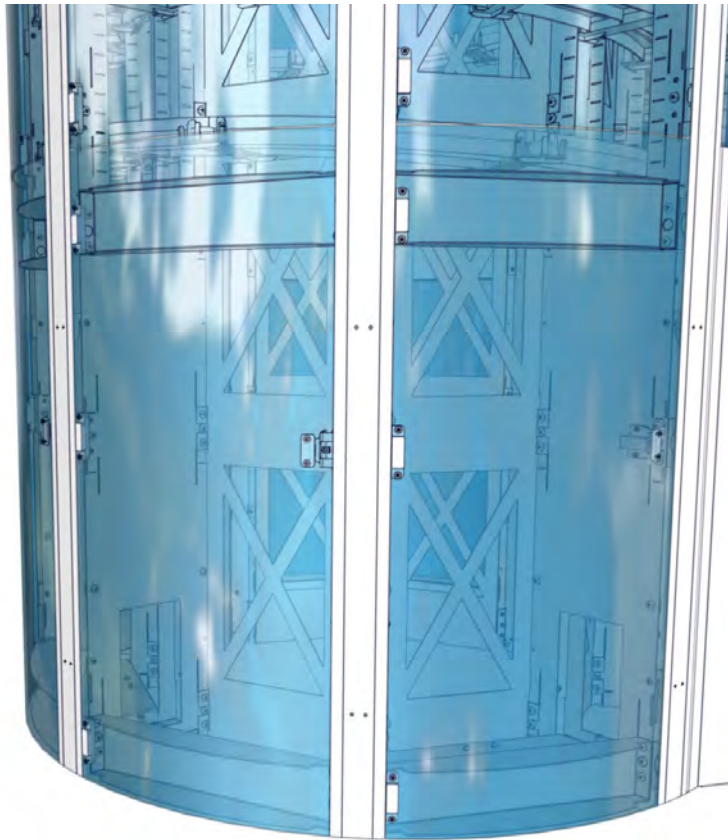
Perform this procedure to open and close the spiral tower doors.



**CAUTION: Mind or watch your hands.** Spiral tower doors can be opened and closed **only** by a trained operator. Use caution when opening and closing spiral tower doors.

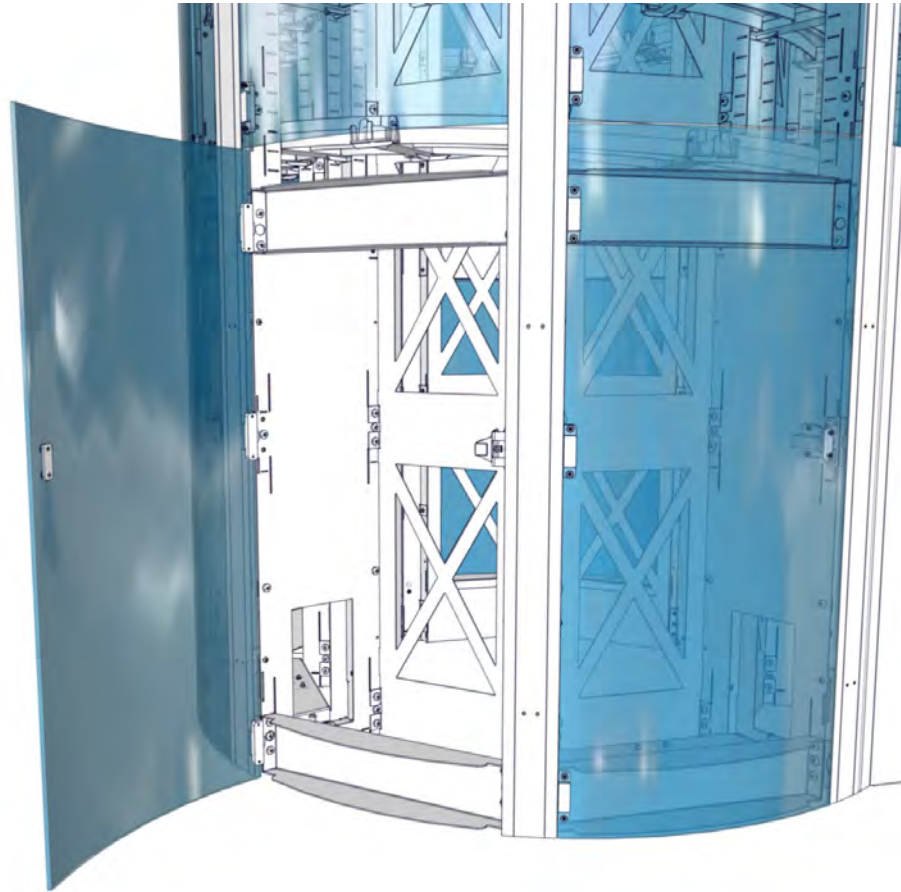
1. To open a spiral tower door, gently press against the outer edge to unlatch it.

**Figure 27: Spiral tower door**



2. Pull open the spiral tower door.

Figure 28: Spiral tower door opened



3. To close the spiral tower door, gently press against the outer edge to latch it.

**Related information...**

*Operating instructions*, page 103

## Cycle power to an empty CAR

Perform this procedure to cycle power to an empty CAR.

1. Open the track hood.
2. Remove the empty CAR from the track.
3. Locate the on/off switch [1] at the rear of the CAR.

**Figure 29: On/Off switch**



4. Turn off the CAR.
5. Leave the CAR turned off for 5 seconds.
6. Turn on the CAR.
7. Wait for the drive wheel to turn and place the CAR back on the track in front of an active lane element.

**NOTE:** If the drive wheel does not turn, contact an Abbott Laboratories representative or an authorized service representative.



8. Close the track hood.

**Related information...**

*Operating instructions*, page 103

# Track Sample Manager user interface

The Track Sample Manager (TSM) user interface is available after the operator logs on.

Four standard user access levels are available on TSM that are assigned to the corresponding groups. TSM allows configuration for four types of user roles:

<b>Service</b>	Service technicians
<b>Administrator</b>	A well-trained user who is responsible for administrating the track system
<b>Operator</b>	Most general users of TSM
<b>Monitor</b>	A user who can view configured monitoring views

**NOTE:** The following sections about roles and permissions, the Main menu screen (TSM), and the **Track / RE** tab describe the most important functions of TSM. These functions vary based on the user role of service, administrator, or operator. This manual describes only the functions that are relevant to the operator.

**Related information...**

- Operating instructions*, page 103
- Roles and permissions (TSM)*, page 122
- Main menu screen (TSM)*, page 123

## Roles and permissions (TSM)

**Table 17: Roles**

User name	Role	Description
service	Service	Service technician
admin	Administrator	Local administrator
operator	Operator	Track operator
monitor	Monitor	User with monitoring view only

**Table 18: Permissions**

Function or menu item	Service	Administrator	Operator
Track / RE	x	x	x
		Permissions not granted: <ul style="list-style-type: none"> <li>• Controller</li> </ul>	Permissions not granted: <ul style="list-style-type: none"> <li>• Administrator</li> </ul>

Function or menu item	Service	Administrator	Operator
		<ul style="list-style-type: none"> <li>Segment controller information</li> <li>AccessPoint and switch configuration</li> <li>Reset</li> </ul>	<ul style="list-style-type: none"> <li>Controller → <b>Module controller</b> tab</li> <li>Track → Circle → Change name</li> <li>Routing Engine → Clear messages</li> <li>Operation mode → Change mode</li> </ul>
Samples	x	x	x
CARs	x	x	x
Messages	x	x	-
Admin	x	x	-
		No access rights for Admin → Parameters → Service	

- x Permissions granted  
- No permissions granted

**Related information...**

[Track Sample Manager user interface](#), page 122

**Main menu screen (TSM)**

From the Main menu screen (TSM), the operator can perform the following functions:

- View the current operational status of the laboratory automation system.
- View statuses for recovery backup, sample cleanup, and message cleanup.
- Modify statistical criteria for track elements.
- View connections to the Track Workflow Manager.
- Search for samples.
- Remove manually removed samples.
- Request to send samples to an output area.
- Request to send CARs to a maintenance lane.

**Related information...**

[Track Sample Manager user interface](#), page 122

[Main menu screen element descriptions \(TSM\)](#), page 124

[Track / RE tab \(TSM\)](#), page 125


[Samples tab \(TSM\)](#), page 144

[CARs tab \(TSM\)](#), page 156

## Main menu screen element descriptions (TSM)

After the operator successfully logs on to the Track Sample Manager (TSM), the Main menu screen (TSM) is displayed with the following screen elements.

### Elements

<b>Language</b>	Displays the language selected.
<b>User name</b>	Displays the operator or administrator logged on.
<b>Log off button</b> 	Logs off from TSM.
<b>Track Sample Manager (TSM) banner</b>	Refreshes the screen or returns to the Main menu screen (TSM) from any screen.
<b>Track / RE button</b>	Navigates to the <b>Track / RE</b> tab.
<b>Samples button</b>	Navigates to the <b>Samples</b> tab.
<b>CARs button</b>	Navigates to the <b>CARs</b> tab.
<b>Messages button</b>	Navigates to the <b>Messages</b> tab. <b>NOTE:</b> The <b>Messages</b> button is viewable only by the service or administrator user access level.
<b>Admin button</b>	Navigates to the <b>Admin</b> tab. <b>NOTE:</b> The <b>Admin</b> button is viewable only by the service or administrator user access level.



**CAUTION: Risk of delay in sample processing.**

Inappropriate configurations in TSM can have an impact on sample processing, leading to a delay in results. Contact an Abbott Laboratories representative or an authorized service representative for guidance on TSM configuration and GLP systems Track automation workflow.

### Overview area

<b>User</b>	Displays the operator or administrator logged on.
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<b>Track layout</b>	Displays the track layout document name.
<b>TSM version</b>	Displays the TSM version.
<b>Operation mode</b>	Displays the current operational status: Standby, Test, Disconnected, or Module Data Recovery.
<b>Local time</b>	Displays the time and time zone settings.
<b>License</b>	Displays the license for TSM.
<b>Recovery backup status</b>	<p>Displays the recovery backup status.</p> <p>If the recovery backup status is red, the configuration in TSM has been changed since the last recovery backup by using the TSM setup user interface.</p> <p><b>NOTE:</b> If the recovery backup status remains red, contact an Abbott Laboratories representative or an authorized service representative.</p>
<b>Sample cleanup status</b>	<p>Displays the sample cleanup status.</p> <p>If the sample cleanup status is red, the status displays the number of samples not deleted. If the sample cleanup status does not change back to green after a few days, contact an Abbott Laboratories representative or an authorized service representative.</p>
<b>Message cleanup status</b>	Displays the message cleanup status.

**Related information...**

[Main menu screen \(TSM\)](#), page 123

[Log on to the Track Sample Manager \(TSM\)](#), page 108

**Track / RE tab (TSM)**

On the **Track / RE** tab on the Track Sample Manager (TSM), the operator can perform the following functions:

- View a list of all active lane elements, modules, and CARs.
- View information about the CARs and track circles.
- View a track layout illustration with status information on the individual active components.
- View track performance analyses and modify the statistical criteria for track elements.
- View the version numbers of segments and modules, and the version numbers and operations data of CARs.

- View the incoming and outgoing connection information between the Track Workflow Manager (TWM) and TSM, and the status of TWM.
- View the current operation mode of TSM.

**Related information...**

- Main menu screen (TSM), page 123*
- Track / RE tab element descriptions (TSM), page 126*
- Controller tab element descriptions (TSM), page 127*
- Segment controller screen element descriptions (TSM), page 128*
- Module controller screen element descriptions (TSM), page 132*
- Circles tab element descriptions (TSM), page 136*
- Layout tab element descriptions (TSM), page 137*
- Statistic tab element descriptions (TSM), page 138*
- Modify statistical criteria (TSM), page 139*
- Firmware tab element descriptions (TSM), page 139*
- Routing Engine tab element descriptions (TSM), page 142*
- View the connections to TWM on TSM, page 143*
- Operation mode tab element descriptions (TSM), page 143*

**Track / RE tab element descriptions (TSM)**

The **Track / RE** tab displays the following screen elements.

**Elements**

<b>Controller tab</b>	Displays a controller overview that lists all modules, segments, and analyzers.
<b>Circles tab</b>	Displays an overview of all generated track circles.
<b>Layout tab</b>	Displays a schematic of the uploaded track layout.
<b>Statistic tab</b>	Displays various statistics pertaining to sample throughput, errors, and module downtimes.
<b>Firmware tab</b>	Displays information about the segment, module, and CAR versions.
<b>Routing Engine tab</b>	Displays all communication end points and the status of the Track Workflow Manager.
<b>Operation mode tab</b>	Displays the current Track Sample Manager operation mode.

**Related information...**

[Track / RE tab \(TSM\)](#), page 125

**Controller tab element descriptions (TSM)**

The **Controller** tab displays a controller overview that lists all modules, segments, and analyzers.

**Elements**

<b>Controller overview</b>	Displays lists of all modules, segments, and analyzers.	
<b>Filter</b>	Displays a text box that is used to search the controllers by ID, segment number, module name, and module type.	
<b>With error</b>	Displays a check box that is used to show only controllers with errors.	
<b>CAR need</b>	Displays a check box that is used to show only controllers with CAR need.	
<b>Controller type</b>	Displays the controller type:	
	<b>Segment</b>	The segment controller overview displays a list of all segments.
	<b>Module</b>	The module controller overview displays a list of all modules.
<b>Module type</b>	Displays the module type.	
<b>ID</b>	Displays the controller ID. When the controller ID is selected, a detailed view with further information for the track element in that row is displayed. Several tabs are displayed that vary based on the track element (such as module, segment, or analyzer) that is selected.	
<b>Name</b>	Displays the module name and number.	
<b>Status</b>	Displays the controller status of the modules and segments:	
	<b>Green</b>	<ul style="list-style-type: none"> <li>• The segment is connected and online.</li> <li>• The module is connected and online, or is in pause mode.</li> </ul>

- Yellow** The module is connected but offline.
- Red**
  - The segment or track element is in an error state.
  - The module is not connected or an error has been detected.
- Gray**
  - The segment controller has not reported the track element.
  - The module is powered off or has been manually disabled.

**Element / Area status** Displays the controller status of the track elements and areas:

- Green**
  - All connected track elements are online.
  - All areas are online.
- Yellow** The module is connected but offline.
- Red**
  - The segment or track is in an error state.
  - At least one area is in an error state.
- Gray**
  - The segment controller has not reported the track element.
  - The module is powered off or has been manually disabled.

**Related information...**

[Track / RE tab \(TSM\)](#), page 125

**Segment controller screen element descriptions (TSM)**

The hardware on the Segment controller screen can be reset by an Abbott Laboratories representative or an authorized service representative. The Segment controller screen is displayed when the segment controller ID is selected on the **Controller** tab.

**Elements**

**ID** Displays the segment ID.



<b>Connection</b>	Displays the connection number.
<b>Status</b>	Displays the status.
<b>Product code</b>	Displays the product code.
<b>Serial no.</b>	Displays the serial number.
<b>HW/SW version</b>	Displays the hardware or software version.
<b>Interface version</b>	Displays the interface version.
<b>Error</b>	Displays a text box and a magnifying glass icon.

#### Track element status tab

<b>ID</b>	Displays the track element ID.				
<b>Status</b>	Displays the status sent by the track element: <table> <tr> <td><b>Green</b></td> <td>The track element is online.</td> </tr> <tr> <td><b>Red</b></td> <td>The track element has an error.</td> </tr> </table>	<b>Green</b>	The track element is online.	<b>Red</b>	The track element has an error.
<b>Green</b>	The track element is online.				
<b>Red</b>	The track element has an error.				
<b>Error</b>	Displays a short description of the error.				
<b>Err#</b>	Displays the number of errors detected in the last hour.				
<b>Type</b>	Displays the track element type.				
<b>Module</b>	Displays the module name.				
<b>Product code</b>	Displays the product code of the track element.				
<b>SW version</b>	Displays the software version of the track element.				
<b>HW version</b>	Displays the hardware version of the track element.				

#### Function buttons

<b>Reset hardware</b>	Triggers a controller reset of the selected track elements. <b>NOTE:</b> If no elements are selected, the segment controller receives the reset. The controller reset is forwarded to the
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segment controller, which performs the reset for itself or forwards it to the selected elements.

**NOTE:** Only an Abbott Laboratories representative or an authorized service representative should reset the hardware.

**Update** Refreshes the controller tab or screen.

**Close** Closes the controller tab.

### AccessPoint configuration tab

Displays the configuration settings for charge, park, and high-priority lanes, and for AccessPoints.

**ID** Displays the node ID.

**Type** Displays the AccessPoint type.

**Module** Displays the module name.

**2nd ID** Displays the secondary node ID.

**Waiting queue** Displays the waiting queue length.

**Speed lane 1** Displays the speed on lane 1.

**Sensor, lane 1** Displays the sensor configuration on lane 1.

**Speed lane 2** Displays the speed on lane 2.

**Sensor, lane 2** Displays the sensor configuration on lane 2.

### Function buttons

**Reset hardware** Triggers a controller reset of the selected track elements.

**NOTE:** If no elements are selected, the segment controller receives the reset. The controller reset is forwarded to the segment controller, which performs the reset for itself or forwards it to the selected elements.

**NOTE:** Only an Abbott Laboratories representative or an authorized service representative should reset the hardware.

**Update** Refreshes the controller tab or screen.

**Close** Closes the controller tab.

### Switch configuration tab

Displays the configuration settings for lane switches.

**ID** Displays the node ID.

**Default direct. lane 1** Displays the default deviation of switches on lane 1.

**Default direct. lane 2** Displays the default deviation of switches on lane 2.

**Speed lane 1** Displays the speed on lane 1.

**Sensor, lane 1** Displays the sensor configuration on lane 1.

**Factor, lane 1** Displays the factor on lane 1.

**Speed lane 2** Displays the speed on lane 2.

**Sensor, lane 2** Displays the sensor configuration on lane 2.

**Factor, lane 2** Displays the factor on lane 2.

**Speed lane 3** Displays the speed on lane 3.

**Sensor, lane 3** Displays the sensor configuration on lane 3.

### Function buttons

**Reset hardware** Triggers a controller reset of the selected track elements.

**NOTE:** If no elements are selected, the segment controller receives the reset. The controller reset is forwarded to the segment controller, which performs the reset for itself or forwards it to the selected elements.

**NOTE:** Only an Abbott Laboratories representative or an authorized service representative should reset the hardware.

**Update** Refreshes the controller tab or screen.

**Close** Closes the controller tab.

### Related information...

[Track / RE tab \(TSM\)](#), page 125

### Module controller screen element descriptions (TSM)

The Module controller screen is displayed when a module is selected in the column for controller type, module type, controller ID, name, status, or element and area status on the **Controller** tab.

#### Elements

<b>ID / Name</b>	Displays the module name and ID.
<b>Connection</b>	Displays the connection number of the module.
<b>Status</b>	Displays the controller status of the module:  <b>Green</b> The module is connected and online, or is in pause mode.  <b>Yellow</b> The module is connected but offline.  <b>Red</b> The module is not connected or an error has been detected.  <b>Gray</b> The module is powered off or has been manually disabled.
<b>Location</b>	Displays the location of the module.
<b>CAR need</b>	Displays the CAR need of the module.
<b>Circle status</b>	Displays the circle status of the module:  <b>Green</b> CARs can enter the circle.  <b>Yellow</b> The circle is full. No more CARs can enter the circle.  <b>NOTE:</b> A CAR outside the circle can enter the circle only if a CAR inside the circle leaves.
<b>Restores / Disposals</b>	Displays the number of samples for restore or disposal action. When the number of samples is selected, a pop-up window is displayed that shows a list of instructions to restore or dispose samples.
<b>CAR priority</b>	Displays the empty CAR priority for the module:

	<b>Low</b>	One CAR for each module
	<b>Normal</b>	Two CARs for each module (two times as many CARs as low priority)
	<b>High</b>	Three CARs for each module (three times as many CARs as low priority)
<b>Empty CAR limit</b>		Displays the empty CAR limit status for the module:
	<b>Green</b>	The module is approached by empty CARs.
	<b>Red</b>	The module has reached the configured empty CAR limit. The module cannot receive empty CARs.
<b>Interface</b>		Displays the software interface version.
<b>Error</b>		Displays a text box with a magnifying glass icon.
<b>Product code</b>		Displays the product code of the module. When the product code is selected, a pop-up window is displayed that shows older serial numbers, hardware versions, and software versions.

#### Track Elements & Areas tab, Track elements area

<b>ID</b>		Displays the track element ID.
<b>Status</b>		Displays the status sent by the track element:
	<b>Green</b>	The track element is online.
	<b>Red</b>	The track element has an error.
<b>Err#</b>		Displays the number of errors detected in the last hour.
<b>Type</b>		Displays the track element type.
<b>2ID</b>		Displays the secondary ID of the track element.
<b>CAR</b>		Displays the current number of CARs in the queue and the maximum number of CARs allowed in the queue.

**Track Elements & Areas tab, Areas area**

<b>Name</b>	Displays the area name.						
<b>Status</b>	Displays the area status:  <table><tr><td><b>Green</b></td><td>The area is active.</td></tr><tr><td><b>Red</b></td><td>The area is inactive.</td></tr><tr><td><b>Gray</b></td><td>The area is disabled.</td></tr></table>	<b>Green</b>	The area is active.	<b>Red</b>	The area is inactive.	<b>Gray</b>	The area is disabled.
<b>Green</b>	The area is active.						
<b>Red</b>	The area is inactive.						
<b>Gray</b>	The area is disabled.						
<b>Type</b>	Displays the area type.						
<b>Diam.</b>	Displays the sample tube diameter supported by the module.						
<b>2ID</b>	Displays the secondary ID of the track element to which the area is accessible.						
<b>Cap.</b>	Displays the maximum capacity of samples in the area.						
<b>Fill level</b>	Displays the fill level of the area:  <table><tr><td><b>Blue</b></td><td>Samples are present in this area.</td></tr><tr><td><b>Yellow</b></td><td>Samples are routed for this area.</td></tr></table>	<b>Blue</b>	Samples are present in this area.	<b>Yellow</b>	Samples are routed for this area.		
<b>Blue</b>	Samples are present in this area.						
<b>Yellow</b>	Samples are routed for this area.						
<b>Function buttons</b>							
<b>Disable</b>	Disables the selected module on TSM.  <b>NOTE:</b> Only an Abbott Laboratories representative or an authorized service representative is permitted to disable the module on TSM.  <b>NOTE:</b> A module can be disabled only when the queue does not contain CARs or when no CARs are being routed to the module and fewer than two switches are located in front of the module. If these situations are not applicable, the module status must be changed before the module is disabled on TSM.						
<b>Enable</b>	Enables the selected module on TSM.						
<b>Service</b>	Places the module in service mode.						

<b>Update</b>	Refreshes the module controller data on the screen.
<b>Close</b>	Closes the screen and returns to the controller overview.

**Components tab**

Displays the subcomponents of a module controller.

<b>Comp. ID</b>	Displays the component ID.
<b>ID</b>	Displays the node ID.
<b>Status</b>	Displays one of the following statuses: Online or Error.
<b>Error</b>	Displays the error code and message.
<b>Product code</b>	Displays the product code.
<b>Serial no.</b>	Displays the serial number.
<b>HW version</b>	Displays the hardware version.
<b>SW version</b>	Displays the software version.

**Function buttons**

<b>Disable</b>	Disables the selected module on TSM.  <b>NOTE:</b> Only an Abbott Laboratories representative or an authorized service representative is permitted to disable the module on TSM.  <b>NOTE:</b> A module can be disabled only when the queue does not contain CARs or when no CARs are being routed to the module and fewer than two switches are located in front of the module. If these situations are not applicable, the module status must be changed before the module is disabled on TSM.
<b>Enable</b>	Enables the selected module on TSM.
<b>Service</b>	Places the module in service mode.
<b>Update</b>	Refreshes the module controller data on the screen.
<b>Close</b>	Closes the screen and returns to the controller overview.

### Disciplines tab

Displays the disciplines of a module.

**Area type** Displays the area type of the module.

**Disciplines** Displays the discipline of the module.

### Function buttons

**Disable** Disables the selected module on TSM.

**NOTE:** Only an Abbott Laboratories representative or an authorized service representative is permitted to disable the module on TSM.

**NOTE:** A module can be disabled only when the queue does not contain CARs or when no CARs are being routed to the module and fewer than two switches are located in front of the module. If these situations are not applicable, the module status must be changed before the module is disabled on TSM.

**Enable** Enables the selected module on TSM.

**Service** Places the module in service mode.

**Update** Refreshes the module controller data on the screen.

**Close** Closes the screen and returns to the controller overview.

### Related information...

[Track / RE tab \(TSM\)](#), page 125

### Circles tab element descriptions (TSM)

The **Circles** tab displays an overview of all generated track circles. Defining the circles is recommended to ensure optimum traffic control on large-scale track systems. A schematic of all circles is displayed on the **Layout** tab.

### Elements

**Fill level control** Displays the fill level control for the circle:

- All CARs



- Empty CARs
- No CARs (disabled)

<b>Name</b>	Displays the circle name. The Track Sample Manager sets a default name that the administrator can change.	
<b>Relevant switches</b>	Displays the node IDs of all switches whose default positions define the circle boundaries.	
<b>Modules in circle</b>	Displays the module IDs of the modules in the circle.	
<b>Status</b>	Displays the status of the circle:	
	<b>Green</b>	CARs can enter the circle.
	<b>Yellow</b>	The circle is full. No more CARs can enter the circle.
<b>CAR limit</b>	Displays the maximum number of CARs permitted in the circle.	
<b>CARs in</b>	Displays the number of CARs currently in the circle.	
<b>CARs to</b>	Displays the number of CARs approaching the circle that cannot turn back.	
<b>Function buttons</b>		
<b>Update</b>	Refreshes the circle data. Full track circles are displayed in the traffic jam view of the monitoring windows.	
<b>Save</b>	Saves the circle data when the administrator changes the name.	

**Related information...**

[Track / RE tab \(TSM\)](#), page 125

[Layout tab element descriptions \(TSM\)](#), page 137

**Layout tab element descriptions (TSM)**

The **Layout** tab displays a schematic of the uploaded track layout. The track layout is a custom design and must be uploaded to the Track Sample Manager by an Abbott Laboratories representative or an authorized service representative.

The track layout also contains the following information:

- The module status and segment controller status indicated by colors
- Traffic jam information displayed by a flashing red CAR symbol
- Track circles displayed as blue circles with dotted blue lines indicating entry and exit points
- CAR location or movement along the track displayed as a black CAR symbol

**Elements**

<b>Level</b>	Displays a drop-down list that is used to change the building story or level of the track layout.
<b>Magnifying glass icons</b>	Display two icons that are used to zoom in and zoom out of the track layout.
<b>Circle</b>	Displays a drop-down list that is used to select a circle name. <b>NOTE:</b> This element is displayed only when the circle is on the level currently being viewed.
<b>CAR</b>	Displays a text box that is used to enter the CAR serial number. <b>NOTE:</b> This element is displayed only when the CAR is on the building story or level currently being viewed.

**Related information...**

- [Track / RE tab \(TSM\), page 125](#)
- [Circles tab element descriptions \(TSM\), page 136](#)
- [Track overview, page 37](#)

**Statistic tab element descriptions (TSM)**

The **Statistic** tab displays various statistics pertaining to sample throughput, errors, and module downtimes. Statistics are retained for 1 year.

**Elements**

<b>Type</b>	Displays a drop-down list that is used to select the statistical data by area type or module type.
<b>Area</b>	Displays a drop-down list that is used to select the statistical data by the configured areas.
<b>Element</b>	Displays a drop-down list that is used to select the statistical data by the track elements.

<b>Grouped by</b>	Displays a drop-down list that is used to group the statistical data by area or module.
<b>Period</b>	Displays a drop-down list that is used to select the statistical data by day, week, month, or year.
<b>Start date</b>	Displays the start date for the statistics review.
<b>Statistics graph</b>	Displays a graphical representation of the sample throughput statistics for an area type.

### Function buttons

<b>Export</b>	Exports and downloads data to an Excel file.
<b>Update</b>	Updates the statistics.

### Related information...

[Track / RE tab \(TSM\)](#), page 125

### Modify statistical criteria (TSM)

Perform this procedure to modify the statistical criteria for each track element on the Track Sample Manager (TSM).

1. On the Main menu screen (TSM), tap **Track / RE**.
2. On the **Track / RE** tab, tap **Statistic**.
3. On the **Statistic** tab, enter the following information for each track element:
  - **Type**
  - **Area**
  - **Element**
  - **Grouped by**
  - **Period**
  - **Start date**
4. Tap **Update** to display the statistics.
5. Tap **Export** to export the statistics to an Excel file.

### Related information...

[Track / RE tab \(TSM\)](#), page 125

### Firmware tab element descriptions (TSM)

The **Firmware** tab displays information about the segment, module, and CAR versions.

### Firmware package area

Displays the **Segment**, **Module**, and **CAR** tabs.

### Segment tab

Displays the version information of track elements.

<b>Controller</b>	Displays the name of the segment controller.
<b>Element</b>	Displays the node ID of the track element.
<b>Serial no.</b>	Displays the serial number of the segment.
<b>Product code</b>	Displays the product code. When the product code is selected, the product history of the segment is displayed.
<b>SW version</b>	Displays the software version of the segment.
<b>HW version</b>	Displays the hardware version of the segment.
<b>Installation</b>	Displays the date the segment was installed and first reported to the Track Sample Manager (TSM).

### Function buttons

<b>Update</b>	Refreshes the screen.
<b>Export</b>	Exports and downloads data to an Excel file.
<b>Close</b>	Closes the screen.

### Module tab

Displays the version information of modules and their components.

<b>Controller</b>	Displays the name of the module controller.
<b>Component</b>	Displays the component ID.
<b>Element</b>	Displays the optional element of the component.
<b>Serial no.</b>	Displays the serial number of the module.

<b>Product code</b>	Displays the product code. When the product code is selected, the product history of the module is displayed.
<b>HW version</b>	Displays the hardware version of the module.
<b>SW version</b>	Displays the software version of the module.
<b>Other versions</b>	Displays other version information of the component (for example, scripts).
<b>Installation</b>	Displays the date the module was installed and first reported to TSM.

**Function buttons**

<b>Update</b>	Refreshes the screen.
<b>Export</b>	Exports and downloads data to an Excel file.
<b>Close</b>	Closes the screen.

**CAR tab**

Displays software and hardware versions, and CAR operations data.

<b>CAR</b>	Displays the CAR serial number.
<b>SW version</b>	Displays the software version number.
<b>HW version</b>	Displays the hardware revision number.
<b>Mileage (in km)</b>	Displays the overall distance the CAR has moved (in kilometers).
<b>Operation hours</b>	Displays the number of hours the CAR has been in use since manufacturing or refurbishment.
<b>Tare weight</b>	Displays the CAR weight that the CAR reports at a charge point.

**Function buttons**

<b>Update</b>	Refreshes the screen.
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**Export** Exports and downloads data to an Excel file.

**Close** Closes the screen.

**Related information...**

*Track / RE tab (TSM)*, page 125

**Routing Engine tab element descriptions (TSM)**

The **Routing Engine** tab displays all communication end points and the status of the Track Workflow Manager (TWM).

The Track Sample Manager (TSM) cannot function appropriately without a connection to TWM. It is vital for both connection status indicators to be green. If TWM is not connected, TSM buffers messages. The number of buffered or unsent messages is displayed along with the corresponding status.

**Elements**

**Incoming Connection** Displays the connection the Routing Engine (RE) establishes with TSM. The following screen elements are displayed:

<b>Status</b>	<b>Green</b>	RE is connected.
	<b>Red</b>	RE is disconnected.
<b>Local address</b>	Displays the local address.	
<b>Remote address</b>	Displays the remote address.	

**Outgoing Connection** Displays the connection TSM establishes with the RE. The following screen elements are displayed:

<b>Status</b>	<b>Green</b>	RE is connected.
	<b>Red</b>	RE is disconnected.
<b>Local address</b>	Displays the local address.	
<b>Remote address</b>	Displays the remote address.	

**Buffered messages** Displays the number of unsent messages.

**Function button**

**Close** Closes the screen.

**Related information...**

[Track / RE tab \(TSM\)](#), page 125

**View the connections to TWM on TSM**

Perform this procedure to view the incoming and outgoing connections to the Track Workflow Manager (TWM) on the Track Sample Manager (TSM).

1. On the Main menu screen (TSM), tap **Track / RE**.
2. On the **Track / RE** tab, tap **Routing Engine** to display information about the incoming and outgoing connections to TWM.
3. On the **Routing Engine** tab, view the connection statuses, which are displayed for incoming and outgoing connections as either green or red:

**Green** TWM is connected.

**Red** TWM is not connected. Contact an Abbott Laboratories representative or an authorized service representative.

**Related information...**

[Track / RE tab \(TSM\)](#), page 125

**Operation mode tab element descriptions (TSM)**

The **Operation mode** tab displays the current Track Sample Manager (TSM) operation mode.

**Elements**

**Operation mode** Displays a drop-down list of the operation mode for TSM.

**NOTE:** The operation mode can be viewed by the operator, but is editable only by the Abbott Laboratories representative or the authorized service representative.

The following operation modes are available:

**Standby** Unused and empty CARs wait at the charge and park lanes.

**Test** CARs move continuously over the track to test track elements.

<b>Disconnected</b>	TSM is disconnected from the Routing Engine (RE) and track.
<b>Module Data Recovery</b>	TSM opens connections with modules but is disconnected from the RE and segment controllers. Inventory exchange is enabled.

### Function button

**Save** Saves the changes.

### Related information...

[Track / RE tab \(TSM\)](#), page 125

## Samples tab (TSM)

On the **Samples** tab on the Track Sample Manager, the operator can perform the following functions:

- View information about processed samples.
- Search for specific information about all samples.

### Related information...

[Main menu screen \(TSM\)](#), page 123

[Samples tab element descriptions \(TSM\)](#), page 144

[Search tab \(Samples\) element descriptions \(TSM\)](#), page 145

[Search result screen element descriptions \(TSM\)](#), page 146

[Sample Detail screen element descriptions \(TSM\)](#), page 146

[Sample History screen element descriptions \(TSM\)](#), page 149

[Search for samples \(TSM\)](#), page 150

[Remove a sample \(TSM\)](#), page 151

[Expert search tab \(Samples\) element descriptions \(TSM\)](#), page 152

[List requested tab \(Samples\) element descriptions \(TSM\)](#), page 154

[Request to send a sample to an output area \(TSM\)](#), page 155

[Buffered samples list tab \(Samples\) element descriptions \(TSM\)](#), page 156

## Samples tab element descriptions (TSM)

The **Samples** tab displays the following screen elements.



## Elements

<b>Search</b>	Displays a tab that is used to search for samples.
<b>Expert search</b>	Displays a tab that is used to search for another sample by using different criteria in a detailed search.
<b>List requested</b>	Displays a tab that lists all samples that have been requested manually by the operator from one area to another.
<b>Buffered samples list</b>	Displays a tab that lists all samples currently on a Buffer Module.

## Related information...

[Samples tab \(TSM\)](#), page 144

## Search tab (Samples) element descriptions (TSM)

Samples are searched and displayed on the **Search** tab.

## Elements

<b>Barcode</b>	Displays a text box that is used to enter the sample bar code. <b>NOTE:</b> The bar code number is order specific or sample specific and can be found on the laboratory information system, for example.
<b>Sample no</b>	Displays a text box that is used to enter the Track Sample Manager (TSM) sample number. <b>NOTE:</b> Sample numbers are generated by TSM and are displayed by using separate search operations (for example, CAR search) or by using the Track Workflow Manager.

## Function button

<b>Search</b>	Displays a list of search results. <b>NOTE:</b> When a sample is selected from the list of search results, the Sample Detail screen is displayed.
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## Related information...

[Samples tab \(TSM\)](#), page 144

### Search result screen element descriptions (TSM)

When the **Search** button on the **Search** tab or **Expert search** tab is selected, a list of search results is displayed.

#### Elements

<b>Number</b>	Displays the number.
<b>Barcode</b>	Displays the sample bar code number.
<b>Date of entry</b>	Displays the entry date.
<b>Status</b>	Displays the current status of the sample.
<b>Location</b>	Displays the location of the sample.
<b>Target area</b>	Displays the target area.
<b>Target start</b>	Displays the target start.
<b>Error code</b>	Displays the error code.
<b>Count</b>	Displays the count number.
<b>Output area</b>	Displays a drop-down list that is used to select the output area.
<b>Request button</b>	Requests a sample to move to the selected output area.

#### Function button

<b>Close</b>	Closes the screen.
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#### Related information...

[Samples tab \(TSM\)](#), page 144

[Expert search tab \(Samples\) element descriptions \(TSM\)](#), page 152

### Sample Detail screen element descriptions (TSM)

The Sample Detail screen displays additional information about a sample. When the **Search** button on the **Search** tab or **Expert search** tab is selected, a list of search results is displayed. When a sample is selected from the list of search results, the Sample Detail screen is displayed.

**Elements**

<b>Number</b>	Displays the number.
<b>Barcode</b>	Displays the sample bar code number.
<b>Status</b>	Displays the current status of the sample.
<b>Entry date</b>	Displays the entry date.
<b>Entry location</b>	Displays the entry location.
<b>Exit date</b>	Displays the date the sample leaves the track.
<b>Error</b>	Displays any error for the sample.
<b>Priority</b>	Displays the priority.
<b>Discipline</b>	Displays the sample discipline.

**Progress tab**

<b>Location</b>	Displays the location of the sample.
<b>Module / Area</b>	Displays the instrument and area.
<b>Sector</b>	Displays the sector number.
<b>Rack / Pos.</b>	Displays the rack number and position number.

**Target Plan**

Displays a magnifying glass icon that is used to display information about sample processing on the track.

**NOTE:** When the magnifying glass icon is selected, the Sample History screen is displayed.

<b>Origin</b>	Displays the origin of the order.
<b>Area options</b>	Displays the area.
<b>Start</b>	Displays the start date and time.

	<b>Target</b>	Displays the targets to which the sample is routed.
	<b>Result</b>	Displays the result of the sample routed to the target.
	<b>Duration</b>	Displays the time elapsed since the start.
	<b>Parameter</b>	Allows the operator to view the sample detail of the target.
<b>Request to</b>		Allows the operator to request a sample to an output area.
	<b>Output area</b>	Displays a drop-down list that is used to select the output area.
	<b>Request button</b>	Requests a sample to move to the selected output area.

#### Tube tab

Displays the sample tube type information.

#### Function buttons

**Remove**                      Informs the Track Sample Manager and the Track Workflow Manager that a sample has been removed from a CAR or module.

**NOTE:** The sample is allowed to reenter the system only on the Input/Output Module.

**Recover**                      Recovers the status of the sample from the module if the status is unknown.

**Update**                        Refreshes the sample data.

**Close**                         Closes the screen.

#### Related information...

[Samples tab \(TSM\)](#), page 144

[Expert search tab \(Samples\) element descriptions \(TSM\)](#), page 152

**Sample History screen element descriptions (TSM)**

The Sample History screen displays the detailed route of a sample along the track.

**Elements**

<b>Target area options</b>	Displays all target areas of the sample.														
<b>Start</b>	Displays the start day, month, and time when the sample reaches a specific target area or when the sample is processed by a specific module.														
<b>Location</b>	Displays the starting location of the sample when the sample approaches a specific target area and when the sample reaches the target area: <ul style="list-style-type: none"> <li>• A CAR with a module ID</li> <li>• A CAR at a switch with a node ID</li> <li>• A module ID and an area</li> </ul>														
<b>Target / Activity</b>	Displays the target area that was selected from the area options, or the activity that was selected on the CAR or the module. The following information may be displayed: <table> <tr> <td><b>Module identifier / Area</b></td> <td>This target area is sent by the Track Workflow Manager.</td> </tr> <tr> <td><b>CAR removed / in jam</b></td> <td>The CAR is detected as removed or as stuck in a traffic jam.</td> </tr> <tr> <td><b>Circling</b></td> <td>The sample on the CAR cannot reach a target.</td> </tr> <tr> <td><b>Processing</b></td> <td>The sample is being processed on a module.</td> </tr> <tr> <td><b>Target evaluation</b></td> <td>The next target for the sample is currently calculated.</td> </tr> <tr> <td><b>Waiting</b></td> <td>The sample is waiting.</td> </tr> <tr> <td><b>Weighing</b></td> <td>The sample is currently on the scale.</td> </tr> </table>	<b>Module identifier / Area</b>	This target area is sent by the Track Workflow Manager.	<b>CAR removed / in jam</b>	The CAR is detected as removed or as stuck in a traffic jam.	<b>Circling</b>	The sample on the CAR cannot reach a target.	<b>Processing</b>	The sample is being processed on a module.	<b>Target evaluation</b>	The next target for the sample is currently calculated.	<b>Waiting</b>	The sample is waiting.	<b>Weighing</b>	The sample is currently on the scale.
<b>Module identifier / Area</b>	This target area is sent by the Track Workflow Manager.														
<b>CAR removed / in jam</b>	The CAR is detected as removed or as stuck in a traffic jam.														
<b>Circling</b>	The sample on the CAR cannot reach a target.														
<b>Processing</b>	The sample is being processed on a module.														
<b>Target evaluation</b>	The next target for the sample is currently calculated.														
<b>Waiting</b>	The sample is waiting.														
<b>Weighing</b>	The sample is currently on the scale.														
<b>Result</b>	Displays the sample results:														

<b>Canceled: New target</b>	The CAR is rerouted or the target step has changed.
<b>CAR returned / jam resolved</b>	A removed CAR is returned to the track.
<b>Canceled: CAR removed</b>	The CAR is detected as removed.
<b>Canceled: Sample removed</b>	The sample is detected as removed.
<b>Error</b>	The module sends a sample error message.
<b>Canceled: Not processed</b>	The module has not sent a notification for sample processing is completed.
<b>Restored</b>	The sample is restored.
<b>Late result ignored</b>	The notification for sample processing result arrived too late.
<b>Canceled</b>	The route was abandoned.
<b>Arrived</b>	The sample arrived at the target area.
<b>Success</b>	The module processed the sample successfully.
<b>Warning</b>	The module processed the sample with a warning code.

**Duration** Displays the time elapsed since the start.

#### Function button

**Close** Closes the screen.

#### Related information...

[Samples tab \(TSM\)](#), page 144

[Expert search tab \(Samples\) element descriptions \(TSM\)](#), page 152

#### Search for samples (TSM)

Perform this procedure to search for samples on the Track Sample Manager (TSM).

1. On the Main menu screen (TSM), tap **Samples**.
2. On the **Samples** tab, tap the **Search** tab.
3. On the **Search** tab, enter the TSM sample number or the sample bar code.

**NOTE:** The sample bar code can be entered in the following ways:

- The bar code 0999.0999-9 can be entered as 0999.09999 if the exact bar code is known.
- The bar code 0999.0999-9 can be entered as 0999.0999\* if the last digit of the bar code is unknown or if there are multiple samples on the track that end with this bar code. All samples that have a bar code beginning with 0999.0999 are listed.

4. Tap **Search** or press the **Enter** key to display a list of search results.
5. If multiple samples are displayed for one bar code, select the sample based on its status.

**NOTE:** The following actions can cause multiple samples to be displayed for one bar code:

- A bar code containing an asterisk was entered.
- Tubes have been repeatedly removed from and placed back on the GLP systems Track.
- Additional secondary tubes with an identical bar code have been generated on the Aliquot Module.

#### Related information...

[Samples tab \(TSM\)](#), page 144

[Expert search tab \(Samples\) element descriptions \(TSM\)](#), page 152

#### Remove a sample (TSM)

Perform this procedure to remove a manually removed sample from the Track Sample Manager (TSM).



**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.

**IMPORTANT:** A sample that was manually removed from the track must be marked as Removed. Consequently, the sample receives a status of Unknown.

1. On the Main menu screen (TSM), tap **Samples**.
2. On the **Samples** tab, tap the **Search** tab.
3. On the **Search** tab, enter the TSM sample number or the sample bar code.

**NOTE:** The sample bar code can be entered in the following ways:

- The bar code 0999.0999-9 can be entered as 0999.09999 if the exact bar code is known.
- The bar code 0999.0999-9 can be entered as 0999.0999\* if the last digit of the bar code is unknown or if there are multiple samples on the track that end with this bar code. All samples that have a bar code beginning with 0999.0999 are listed.

4. Tap **Search** or press the **Enter** key to display a list of search results.
5. If multiple samples are displayed for one bar code, select the sample based on its status.  
**NOTE:** The following actions can cause multiple samples to be displayed for one bar code:
  - A bar code containing an asterisk was entered.
  - Tubes have been repeatedly removed from and placed back on the GLP systems Track.
  - Additional secondary tubes with an identical bar code have been generated on the Aliquot Module.
6. Tap the sample to be removed.
7. On the Sample Detail screen, tap **Remove**.
8. When a confirmation message is displayed, tap **OK**.

In the **Error** text box on the Sample Detail screen, the sample is marked as removed.

#### Related information...

[Samples tab \(TSM\)](#), page 144

[Expert search tab \(Samples\) element descriptions \(TSM\)](#), page 152

[Remove a CAR with a sample](#), page 236

#### Expert search tab (Samples) element descriptions (TSM)

The **Expert search** tab is used to enter detailed filter options when searching for samples.

#### Search area

Displays the search criteria for the sample.

<b>Barcode</b>	Displays a text box that is used to search by the bar code.
<b>Sample no</b>	Displays a text box that is used to search by the sample number.
<b>Entry from</b>	Displays a text box that is used to search for a sample on the track by the search start date.
<b>Entry to</b>	Displays a text box that is used to search for a sample on the track by the search end date.
<b>Error code</b>	Displays a drop-down list that is used to search by an error code.
<b>Priority</b>	Displays check boxes that are used to search by the priority: <ul style="list-style-type: none"><li>• <b>Emergency</b></li></ul>



- **Normal**
- **Preferred**
- **High**
- **Low**

**Status**

Displays check boxes that are used to search by the current status of a sample:

<b>Active</b>	The Track Sample Manager (TSM) is controlling and processing the sample.
<b>Regularly removed</b>	The sample has been removed from an output area for further manual processing.
<b>Disposed</b>	The sample has been disposed from storage.
<b>Unknown</b>	TSM cannot detect the location of the sample.

**Target plan**

Displays options that are used for searching with or without a target plan:

- **With**
- **Any**
- **Without**

**Sample processing area**

Displays the sample processing criteria.

<b>Area</b>	Displays a drop-down list that is used to search by a target area or a processed area.
<b>Target area</b>	Displays an option.
<b>Processed area</b>	Displays a selected option.
<b>Processed from</b>	Displays the processing start time when the sample was processed.

**Processed to** Displays the processing end time when the sample was processed.

### Current position area

Displays the current location of the sample.

**CAR** Displays a check box that is used to search by the CAR.

**Module** Displays a drop-down list that is used to search by the module.

**Area** Displays a drop-down list that is used to search by the area.

**Aggregate by target** Displays a check box that is used to search for the aggregate samples by target area.

### Function button

**Search** Displays a list of search results for CARs.

**NOTE:** When a sample is selected from the list of search results, the Sample Detail screen is displayed.

### Related information...

[Samples tab \(TSM\)](#), page 144

[Search result screen element descriptions \(TSM\)](#), page 146

[Sample Detail screen element descriptions \(TSM\)](#), page 146

[Sample History screen element descriptions \(TSM\)](#), page 149

[Search for samples \(TSM\)](#), page 150

[Remove a sample \(TSM\)](#), page 151

### List requested tab (Samples) element descriptions (TSM)

The **List requested** tab displays an overview of all samples that have been manually requested by the operator and displays the progress of a sample that has been manually requested. The list updates automatically.

### Elements

**Number** Displays the number.

**Barcode** Displays the sample bar code number.

<b>Date of entry</b>	Displays the entry date.
<b>Status</b>	Displays the status.
<b>Location</b>	Displays the current location.
<b>Target area</b>	Displays the target area.
<b>User</b>	Displays the operator.
<b>Count</b>	Displays the count number.

**Related information...**

[Samples tab \(TSM\)](#), page 144

**Request to send a sample to an output area (TSM)**

Perform this procedure to request to send a sample to an output area on the Track Sample Manager (TSM).

1. On the Main menu screen (TSM), tap **Samples**.
2. On the **Samples** tab, tap the **Search** tab.
3. On the **Search** tab, enter the TSM sample number or the sample bar code.

**NOTE:** The sample bar code can be entered in the following ways:

- The bar code 0999.0999-9 can be entered as 0999.09999 if the exact bar code is known.
- The bar code 0999.0999-9 can be entered as 0999.0999\* if the last digit of the bar code is unknown or if there are multiple samples on the track that end with this bar code. All samples that have a bar code beginning with 0999.0999 are listed.

4. Tap **Search** or press the **Enter** key to display a list of search results.
5. If multiple samples are displayed for one bar code, select the sample based on its status.

**NOTE:** The following actions can cause multiple samples to be displayed for one bar code:

- A bar code containing an asterisk was entered.
- Tubes have been repeatedly removed from and placed back on the GLP systems Track.
- Additional secondary tubes with an identical bar code have been generated on the Aliquot Module.

6. Under **Request to**, select the output area in the **Output area** drop-down list.

7. Tap **Request**.

**Related information...**

[Samples tab \(TSM\)](#), page 144

## Buffered samples list tab (Samples) element descriptions (TSM)

The **Buffered samples list** tab displays a list of all samples that are currently on any Buffer Module.

### Elements

<b>Buffer</b>	Displays the Buffer Module on which the sample is located.
<b>Target area</b>	Displays the route target of the sample after temporary storage.
<b>Samples</b>	Displays the number of samples being stored temporarily.
<b>Reason</b>	Displays the reason why the sample was put in temporary storage on the Buffer Module.
<b>Time since last check</b>	Displays the time of the last check.
<b>Physical sample count</b>	Displays the physical sample count number.

### Function button

<b>Update</b>	Refreshes the list.
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#### Related information...

[Samples tab \(TSM\)](#), page 144

## CARs tab (TSM)

On the **CARs** tab on the Track Sample Manager, the operator can perform the following functions:

- Search for specific information about all CARs.
- View information about CARs on the track.

#### Related information...

[Main menu screen \(TSM\)](#), page 123

[CARs tab element descriptions \(TSM\)](#), page 157

[Search tab \(CARs\) element descriptions \(TSM\)](#), page 157

[Request to send a CAR to a maintenance lane \(TSM\)](#), page 158

[Waiting queues tab element descriptions \(TSM\)](#), page 159

[Circling tab element descriptions \(TSM\)](#), page 159

[Maintenance tab element descriptions \(TSM\)](#), page 160

### CARs tab element descriptions (TSM)

The **CARs** tab displays all information about the CARs.

#### Elements

<b>Search</b>	Displays a tab that is used to search for CARs.
<b>Waiting queues</b>	Displays a tab that lists all CARs at waiting points and in charge lanes.
<b>Circling</b>	Displays a tab that lists all CARs currently circling on the track because they are not able to reach their targets.
<b>Maintenance</b>	Displays a tab that lists all CARs in the maintenance lane.

#### Related information...

[CARs tab \(TSM\)](#), page 156

### Search tab (CARs) element descriptions (TSM)

On the **Search** tab, the operator can search for CARs.

#### Elements

<b>CAR</b>	Displays a text box that is used to search by the serial number.
<b>Segment</b>	Displays a drop-down list that is used to select the segment.
<b>Target</b>	Displays a drop-down list that is used to select the target.
<b>Loaded</b>	Displays a check box that is used to search by loaded CARs.
<b>Empty</b>	Displays a check box that is used to search by empty CARs.
<b>Moving</b>	Displays a check box that is used to search by moving CARs.
<b>Charging</b>	Displays a check box that is used to search by charging CARs.
<b>Waiting</b>	Displays a check box that is used to search by waiting CARs.
<b>Serial</b>	Displays the serial number of the CAR.
<b>Status</b>	Displays the status of the CAR:

- **Charging**
- **In maintenance**
- **Moving**
- **Needs maintenance**
- **Removed**
- **Waiting**

<b>Battery</b>	Displays the lithium battery percentage of the CAR.
<b>Target</b>	Displays the target of the CAR.
<b>Min.left</b>	Displays the remaining minutes.
<b>Last position</b>	Displays the last location of the CAR.
<b>Sample</b>	Displays the sample loaded in the CAR. If a CAR is loaded with a sample, the bar code is displayed. When the bar code is selected, the sample data is displayed.
<b>Error</b>	Displays the error code for the CAR.
<b>Messages</b>	Displays a magnifying glass icon. Selecting the magnifying glass icon displays all messages relating to the CAR.
<b>Listed CARs</b>	Displays the number of CARs on the system.
<b>Request to</b>	Displays a drop-down list that is used to select a maintenance lane.

#### Function buttons

<b>Request</b>	Requests a CAR to send to a maintenance lane.
<b>Search</b>	Displays a list of search results.

#### Related information...

[CARs tab \(TSM\)](#), page 156

#### Request to send a CAR to a maintenance lane (TSM)

Perform this procedure to request to send a CAR to a maintenance lane. A CAR that causes issues can be sent to a maintenance lane.

1. On the **Search** tab, select a CAR to be sent to the maintenance lane.

2. In the **Request to** drop-down list, select a maintenance lane.
3. Tap **Request**.

**Related information...**

[CARs tab \(TSM\)](#), page 156

**Waiting queues tab element descriptions (TSM)**

The **Waiting queues** tab displays a list of all CARs that are located at waiting points and in charge lanes. CARs with a problem are indicated with a bold, red font. Moving the cursor over the number displays the reason for the problem.

**Elements**

<b>Module</b>	Displays the module.
<b>Queue</b>	Displays the queue.
<b>Length</b>	Displays the length of the queue.
<b>CARs in or before queue</b>	Displays the CAR numbers in or before the queue.
<b>CARs approaching</b>	Displays the approaching CARs in the queue.

**Function button**

<b>Update</b>	Refreshes the screen.
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**Related information...**

[CARs tab \(TSM\)](#), page 156

**Circling tab element descriptions (TSM)**

The **Circling** tab displays a list of all CARs currently circling on the track because they are not able to reach their targets.

**Elements**

<b>CAR count</b>	Displays the number of CARs.
<b>Target area</b>	Displays the target area.
<b>Target module</b>	Displays the target module.

**Reason** Displays the target module issue.

**Function button**

**Update** Refreshes the screen.

**Related information...**

[CARs tab \(TSM\)](#), page 156

**Maintenance tab element descriptions (TSM)**

The **Maintenance** tab displays a list of all CARs that are in the maintenance lane or on their way to it.

**Elements**

**CAR** Displays a text box that is used to enter the CAR number.

**Filter** Displays a text box that is used to filter information.

**Serial** Displays the serial number of the CAR.

**Status** Displays the status of the CAR:

**Needs maintenance** On the way

**In maintenance** Arrived

**Target** Displays the current target of the CAR. The target can also be an intermediary stop if the CAR needs to be unloaded first.

**Last Position** Displays the last location of the CAR.

**Maint. arrived** Displays the arrival of the CAR in the maintenance lane.

**Maint. count** Displays the number of maintenance instances for the CAR.

**Maint. last** Displays the date of the last maintenance performed.

**Error** Displays the reason for the maintenance needed. A CAR error code or an operator request for the CAR is displayed.

**Messages** Displays a magnifying glass icon. Selecting the magnifying glass icon displays all messages relating to the CAR.



**Listed CARs**                      Displays the number of CARs that need maintenance.

**Function buttons**

**Cancel request**                      Cancels a request.

**Remove arrived**                      Removes a CAR from the maintenance lane.

**Update**                                      Refreshes the screen.

**Related information...**

[CARs tab \(TSM\)](#), page 156

## Track Workflow Manager user interface

The Track Workflow Manager user interface receives sample orders from the laboratory information system through the middleware, and provides target data and instructions for samples to the Track Sample Manager.

### Related information...

*Operating instructions*, page 103

*Roles and permissions (TWM)*, page 162

*Main menu screen (TWM)*, page 163

*Workflow screen (TWM)*, page 184

*Master data screen (TWM)*, page 185

*Admin screen (TWM)*, page 185

## Roles and permissions (TWM)

The Track Workflow Manager allows configuration for three types of user roles: service, administrator, and operator.

**NOTE:** This operations manual describes only the functions relevant to the track operator. Separate training is required for administrator roles and permissions.

**Table 19: Roles**

Role	Description
Service	Service technician
Administrator	Local administrator
Operator	Track operator

**Table 20: Permissions**

Role	Description
Service	All functions and buttons are available and enabled.
Administrator	Nearly all functions and buttons are available and enabled. <ul style="list-style-type: none"><li>JSON notification information is not displayed on the Sample details screen (Run → Sample search → Sample details).</li><li>The <b>Clear messages</b> column is not available (Run → Connections → Clear messages).</li><li>No authorization to edit the settings of operators with service role is available.</li><li>No authorization to change the following values:</li></ul>

Role	Description
	<ul style="list-style-type: none"> <li>– (Admin → Timer → Service)</li> <li>– (Admin → Parameters → Service)</li> </ul>
Operator	Only the functions and buttons on the start menu are available and enabled. A limited display of sample details is available.

**Related information...**

[Track Workflow Manager user interface](#), page 162

**Main menu screen (TWM)**

From the Main menu screen (TWM), the operator can perform the following functions:

- Search for samples and sample details.
- View informational, warning, and error messages.
- View instrument and test statuses.
- Activate or deactivate one or more instruments or tests.
- View the connection status.

**Related information...**

[Track Workflow Manager user interface](#), page 162

[Main menu screen element descriptions \(TWM\)](#), page 163

[Menu overview screen element descriptions \(TWM\)](#), page 164

[Sample search screen \(TWM\)](#), page 165

[Messages screen \(TWM\)](#), page 172

[Instrument status screen \(TWM\)](#), page 174


[Test status screen \(TWM\)](#), page 179

[Connections screen \(TWM\)](#), page 183

**Main menu screen element descriptions (TWM)**

After the operator successfully logs on to the Track Workflow Manager (TWM), the Main menu screen (TWM) is displayed with the following screen elements.

**Elements**

<b>Language</b>	Displays the language selected.
<b>User name</b>	Displays the operator logged on.
<b>Log off button</b> 	Logs off from TWM.

**Run button** Navigates to the Menu overview screen.

## Overview area

**User** Displays the operator logged on.

**TWM version** Displays the TWM version.

**Operation mode** Displays the current operational status.

**Laboratory time** Displays the time and time zone settings.

**Recovery backup status** Displays the recovery backup status.

### Related information...

[Main menu screen \(TWM\)](#), page 163

[Log on to the Track Workflow Manager \(TWM\)](#), page 110

## Menu overview screen element descriptions (TWM)

The Menu overview screen displays the following screen elements.

### Elements

**Run button** Displays the Menu overview screen.

**Sample search button** Displays information about sample details, tests, routing history, senders, and patients.

**Messages button** Displays informational, warning, and error messages.

**Instrument status button** Displays the settings for enabling or disabling one or more analyzers and the settings for enabling or disabling one or more tests of an analyzer.

**Test status button** Displays the settings for enabling or disabling one or more tests.

**Connections button** Displays information about Track Workflow Manager incoming and outgoing connection data.

### Related information...

[Main menu screen \(TWM\)](#), page 163

[Sample search screen element descriptions \(TWM\)](#), page 165

*Sample details screen element descriptions (TWM)*, page 167

*Messages screen (TWM)*, page 172

*Instrument status screen (TWM)*, page 174

*Test status screen (TWM)*, page 179

*Connections screen (TWM)*, page 183

## Sample search screen (TWM)

On the Sample search screen, the operator can view the following information:

- Sample details
- Tests
- Routing history
- Sender
- Patients

### Related information...

*Main menu screen (TWM)*, page 163

*Sample search screen element descriptions (TWM)*, page 165

*Sample details screen element descriptions (TWM)*, page 167

*Routing History flyout element descriptions (TWM)*, page 169

*Search for samples and sample details (TWM)*, page 170

## Sample search screen element descriptions (TWM)

The Sample search screen displays search criteria for samples.

### Elements

<b>Order ID</b>	Displays a text box that is used to search by the order ID.
<b>Sample ID</b>	Displays a text box that is used to search by the sample ID.
<b>Sample status filter</b>	Displays the following options that are used to search by the sample status: <ul style="list-style-type: none"><li>• <b>Any</b></li><li>• <b>On-track samples without order</b></li><li>• <b>On-track samples with pending tests</b></li><li>• <b>On-track samples buffered by TSM</b></li><li>• <b>Ordered samples without any on-track sample</b></li></ul>

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<b>Track entry time from</b>	Displays a text box that is used to search for a sample on the track by the search start date.
<b>Sample priority</b>	Displays a drop-down list that is used to search by the sample priority.
<b>Track entry time to</b>	Displays a text box that is used to search for a sample on the track by the search end date.
<b>Sender</b>	Displays a text box that is used to search by the sender.
<b>Order time from</b>	Displays a text box that is used to search by the start order time.
<b>Patient</b>	Displays a text box that is used to search by the patient name.
<b>Order time to</b>	Displays a text box that is used to search by the end order time.
<b>Current area</b>	Displays a drop-down list that is used to search by the current area.
<b>Search button</b>	Searches for samples.
<b>Track entry</b>	Displays the time that the sample was placed on the track.
<b>Sample ID</b>	Displays the sample ID (bar code) number.
<b>Order ID</b>	Displays the order ID from the laboratory information system.
<b>Aliquot</b>	Displays if an aliquot tube is used.
<b>Sender</b>	Displays the sender.
<b>Priority</b>	Displays the priority of the sample.
<b>Last area</b>	Displays the most recent area where the sample was located.
<b>Current area</b>	Displays the current area where the sample is located.
<b>Next area</b>	Displays the next area where the sample will be located.
<b>Information</b>	Displays the most recent message for the sample.
<b>Down / Result / Valid / Total tests</b>	Displays the number of downloaded, result, valid, and total tests.

**Function button**

**Close** Closes the screen.

**Related information...**

[Sample search screen \(TWM\)](#), page 165

[Menu overview screen element descriptions \(TWM\)](#), page 164

**Sample details screen element descriptions (TWM)**

The Sample details screen displays additional information for a selected sample.

**Elements**

**Order ID** Displays the order ID.

**Fluid type** Displays the fluid type.

**Centrifugation status** Displays the centrifugation status.

**Sample ID** Displays the sample ID.

**Tube type** Displays the tube type.

**Cap status** Displays the cap status.

**Aliquot number** Displays the aliquot number.

**Current area** Displays the current area.

**Sample priority** Displays the sample priority.

**Order date** Displays the order date and time.

**Information** Displays the sample information.

**Tests tab**

Displays the sample details for test information.

**Test code** Displays a list of sample details by test code.

**LIS Aliquot Barcode** Displays the Aliquot SID if provided by the laboratory information system (LIS).

<b>Order action</b>	Displays a list of sample details by order action.
<b>Order time</b>	Displays a list of sample details by order time.
<b>Last disable time</b>	Displays a list of sample details by last disable time.
<b>Download time</b>	Displays a list of sample details by download time.
<b>Result time</b>	Displays a list of sample details by result time.
<b>Validation time</b>	Displays a list of sample details by validation time.
<b>Instrument</b>	Displays a list of sample details by instrument name.
<b>Closed</b>	Displays a list of sample details by closed samples.

#### **Routing history tab**

Displays the sample details for routing history information.

<b>Date</b>	Displays the date and time.
<b>TSM sample no.</b>	Displays the unique Track Sample Manager sample number.
<b>Priority</b>	Displays the priority.
<b>Message type</b>	Displays the message type.
<b>Tests</b>	Displays the tests.
<b>Areas</b>	Displays the areas.
<b>Instruments</b>	Displays the instruments.
<b>Details button</b>	Displays the Routing History flyout.

#### **Sender tab**

Displays the sample details for sender information.

**NOTE:** Information is displayed only if it has been sent by the LIS.

<b>Production laboratory</b>	Displays the production laboratory.
<b>Requesting doctor</b>	Displays the requesting doctor.



**Requesting laboratory** Displays the requesting laboratory.

**Attending doctor** Displays the attending doctor.

**Ward** Displays the ward.

**Admission ward** Displays the admission ward.

### **Patient tab**

Displays the sample details for patient information.

**NOTE:** Information is displayed only if it has been sent by the LIS.

**Patient ID** Displays the patient ID.

**Nature** Displays the nature (human or animal).

**First name** Displays the first name.

**Gender** Displays the gender.

**Middle name** Displays the middle name.

**Last name** Displays the last name.

**Date of birth** Displays the date of birth.

### **Function buttons**

**Refresh** Refreshes the screen.

**Close** Closes the screen.

### **Related information...**

[Sample search screen \(TWM\)](#), page 165

[Menu overview screen element descriptions \(TWM\)](#), page 164

### **Routing History flyout element descriptions (TWM)**

The Routing History flyout displays additional routing history information for a selected sample.

## Elements

<b>Sample ID</b>	Displays the sample ID.
<b>Message date</b>	Displays the message date and time.
<b>Message type</b>	Displays the message type.
<b>Routing purpose</b>	Displays the routing purpose message.
<b>Error</b>	Displays the error message.

## Function button

<b>Close</b>	Closes the flyout.
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## Related information...

[Sample search screen \(TWM\)](#), page 165

## Search for samples and sample details (TWM)

Perform this procedure to search for samples and sample details on the Track Workflow Manager (TWM). The Sample search screen and the Sample details screen contain information about sample details, tests, routing history, sender, and patients.

1. On the Main menu screen (TWM), tap **Run**.
2. On the Menu overview screen, tap **Sample search**.
3. On the Sample search screen, enter the sample ID (bar code) number in the **Sample ID** text box.

**NOTE:** The sample bar code can be entered in the following ways:

- The bar code 999.999-9 can be entered as 099909999 if the last digit of the bar code is known.
  - The bar code 999.999 can be entered as 09990999\* if the last digit of the bar code is unknown or if all samples of the patient bar code that was entered are displayed.
4. Enter one or more of the following search criteria for the sample:
    - **Order ID**
    - **Track entry time from**
    - **Track entry time to**
    - **Order time from**
    - **Order time to**

- **Sample priority**
- **Sender**
- **Patient**
- **Current area**
- **Sample status filter:**
  - **Any**
  - **On-track samples without order**
  - **On-track samples with pending tests**
  - **On-track samples buffered by TSM**
  - **Ordered samples without any on-track sample**

**NOTE:** If the **Any** option is selected for the sample status filter, the sample ID must be entered as well. If one of the other options is selected for the sample status filter, TWM ignores all additional search criteria (for example, sample ID) and searches for samples based on the selected option.

5. Tap **Search**.
6. In the list of samples found, tap a sample.
7. On the Sample details screen, view the following information:
  - Order ID
  - Sample ID
  - Aliquot number
  - Order date
  - Fluid type
  - Tube type
  - Current area
  - Information
  - Centrifugation status
  - Cap status
  - Sample priority
8. To view the test information, tap **Tests**.
9. To view the routing history information, perform the following steps:
  - a. Tap **Routing history**.
  - b. Tap the **Details** button in the appropriate row.
10. To view the sender information, tap **Sender**.
11. To view the patient information, tap **Patient**.

12. To return to the list of samples found, tap **Close**.

**Related information...**

[Sample search screen \(TWM\)](#), page 165

**Messages screen (TWM)**

On the Messages screen, the operator can view the following information:

- Priority of informational messages
- Priority of warning messages
- Priority of error messages

**Related information...**

[Main menu screen \(TWM\)](#), page 163

[Messages screen element descriptions \(TWM\)](#), page 172

[View the messages \(TWM\)](#), page 174

[Menu overview screen element descriptions \(TWM\)](#), page 164

**Messages screen element descriptions (TWM)**

The Messages screen displays message information.

**Elements**

<b>Automatic refresh</b>	Refreshes all messages from the last 30 minutes automatically and refreshes the messages continuously every 30 seconds. The start and end dates cannot be edited.
<b>Manual refresh</b>	Refreshes the messages manually. The start date and end date can be selected. The date range is restricted to 24 hours.
<b>Start</b>	Enter the start date of the message.
<b>End</b>	Enter the end date of the message.
<b>Filter</b>	Filters the messages displayed in the table by text to find all text lines that match the search text entered. A mouse-over displays a pop-up window with details on the filtered type and text columns to the operator.
<b>Group</b>	Groups the messages by default according to their number or type. Only the latest message is displayed in the table. The total number of messages for a specific number is indicated in the <b>Count</b> column. The grouping is formed on the basis of all messages displayed in the table.

**Messages table area**

<b>Count</b>	Displays a column when message grouping according to type is active. The number of messages of the same type is indicated. Selecting the <b>Count</b> column expands the messages group, displaying all older messages of the group. Deselecting the <b>Group</b> check box displays all messages, and the <b>Count</b> column is no longer displayed in the table.						
<b>ID</b>	Displays the message ID.						
<b>Time</b>	Displays the time the message was created						
<b>Priority</b>	Displays the priority of the message:  <table><tr><td><b>Green</b></td><td>Informational message</td></tr><tr><td><b>Yellow</b></td><td>Warning message</td></tr><tr><td><b>Red</b></td><td>Error message</td></tr></table>	<b>Green</b>	Informational message	<b>Yellow</b>	Warning message	<b>Red</b>	Error message
<b>Green</b>	Informational message						
<b>Yellow</b>	Warning message						
<b>Red</b>	Error message						
<b>Type</b>	Displays the message type with number and text.						
<b>Text</b>	Displays the detailed message description.						
<b>Instrument</b>	Displays this message when an instrument is linked. A magnifying glass icon is displayed when the instrument is enabled or disabled. A mouse-over displays a pop-up window with the name of the instrument.						
<b>Sample</b>	Displays this message when a sample is linked. A magnifying glass icon is displayed if an error message occurs on the Track Sample Manager. A mouse-over displays a pop-up window containing the sample ID or bar code.						
<b>Order</b>	Displays this message when an order is linked. A magnifying glass icon is displayed if the laboratory information system fails to process a message. A mouse-over displays a pop-up window containing the order ID.						
<b>Function button</b>							
<b>Refresh</b>	Refreshes the messages view.						

**Related information...**

[Messages screen \(TWM\)](#), page 172

**View the messages (TWM)**

Perform this procedure to view the messages on the Track Workflow Manager (TWM).

1. On the Main menu screen (TWM), tap **Run**.
2. On the Menu overview screen, tap **Messages**.
3. On the Messages screen, to refresh all messages from the last 30 minutes automatically, tap **Automatic refresh** in the drop-down list.
4. To refresh the messages manually, perform the following steps:
  - a. Tap **Manual refresh** in the drop-down list.
  - b. Enter the start date and end date of the messages.  
**NOTE:** The date range is restricted to 24 hours.
  - c. Tap **Refresh** to refresh the messages view.

**Related information...**

[Messages screen \(TWM\)](#), page 172

**Instrument status screen (TWM)**

On the Instrument status screen, the operator can perform the following functions:

- View the instrument status.
- Disable one or more instruments.
- Enable one or more instruments.
- Disable one or more tests of an instrument.
- Enable one or more tests of an instrument.

**Related information...**

[Main menu screen \(TWM\)](#), page 163

[Instrument status screen element descriptions \(TWM\)](#), page 175

[Tests of instrument screen element descriptions \(TWM\)](#), page 176

[View the instrument status \(TWM\)](#), page 176

[Disable an instrument \(TWM\)](#), page 177

[Enable an instrument \(TWM\)](#), page 177

[Disable the tests on the Instrument status screen \(TWM\)](#), page 178

[Enable the tests on the Instrument status screen \(TWM\)](#), page 178

[Menu overview screen element descriptions \(TWM\)](#), page 164

**Instrument status screen element descriptions (TWM)**

The Instrument status screen displays status and test information for instruments.

**Elements**

<b>Filter</b>	Displays a text box that is used to enter the expression to filter instruments.
<b>Disabled instruments only</b>	Displays a check box that is used to view the disabled instruments only.
<b>With disabled tests only</b>	Displays a check box that is used to view the instruments with disabled tests only.

**Instrument statuses table area**

<b>TWM status</b>	Displays a check box next to the <b>TWM status</b> column header. This check box is used to disable or enable all instruments at one time or to disable or enable all tests of an instrument at one time.  Displays a check box and Track Workflow Manager status for each instrument row.
<b>Name</b>	Displays the instrument name.
<b>Type</b>	Displays the instrument type.
<b>Areas</b>	Displays the areas associated with the instrument.
<b>TSM status</b>	Displays the Track Sample Manager status.
<b>Tests (disabled/all)</b>	Displays the number of disabled tests and the number of all tests.
<b>Dis-/enable tests</b>	Displays an icon that is used to toggle between disable tests and enable tests.

**Function buttons**

<b>Refresh</b>	Refreshes the screen.
<b>Cancel</b>	Cancels the changes.

**Save** Saves the changes.

**Related information...**

[Instrument status screen \(TWM\)](#), page 174

**Tests of instrument screen element descriptions (TWM)**

The Tests of instrument screen displays the following screen elements.

**Elements**

**Filter** Displays a text box that is used to enter the expression to filter tests.

**Disabled tests only** Displays a check box that is used to view the instruments with disabled tests only.

**Tests of instrument table area**

**TWM status** Displays a check box next to the **TWM status** column header. This check box is used to disable or enable all instruments at one time or to disable or enable all tests of an instrument at one time.

Displays a check box and Track Workflow Manager status for each instrument row.

**Test code** Displays the test code.

**Type of analysis** Displays the type of analysis.

**Areas** Displays the areas associated with the instrument.

**Function buttons**

**Cancel** Cancels the changes.

**Save** Saves the changes.

**Related information...**

[Instrument status screen \(TWM\)](#), page 174

**View the instrument status (TWM)**

Perform this procedure to view the instrument status on the Track Workflow Manager (TWM).



1. On the Main menu screen (TWM), tap **Run**.
2. On the Menu overview screen, tap **Instrument status**.
3. On the Instrument status screen, perform one of the following steps:
  - Tap the **Disabled instruments only** check box to display the disabled instruments.
  - Tap the **With disabled tests only** check box to display the instruments with disabled tests.

**Related information...**

[Instrument status screen \(TWM\)](#), page 174

**Disable an instrument (TWM)**

Perform this procedure to disable an instrument on the Track Workflow Manager (TWM). Individual analyzers or modules can be disabled so that they cannot be used as route targets.

1. On the Main menu screen (TWM), tap **Run**.
2. On the Menu overview screen, tap **Instrument status**.
3. On the Instrument status screen, tap to clear the blue check box in the **TWM status** column and in the row of the instrument to be disabled.

**NOTE:** To disable all instruments at one time, tap to clear the appropriate check box next to the **TWM status** column header.

4. Tap **Save**.

The instrument is now disabled.

**Related information...**

[Instrument status screen \(TWM\)](#), page 174

**Enable an instrument (TWM)**

Perform this procedure to enable an instrument on the Track Workflow Manager (TWM). Individual analyzers or modules can be enabled so that they can be used as route targets.

1. On the Main menu screen (TWM), tap **Run**.
2. On the Menu overview screen, tap **Instrument status**.
3. On the Instrument status screen, tap the white check box in the **TWM status** column and in the row of the instrument to be enabled.

**NOTE:** To enable all instruments at one time, tap the appropriate check box next to the **TWM status** column header.

4. Tap **Save**.

The instrument is now enabled.

**Related information...**

[Instrument status screen \(TWM\)](#), page 174

**Disable the tests on the Instrument status screen (TWM)**

Perform this procedure to disable the tests on the Instrument status screen of the Track Workflow Manager (TWM). Individual tests of an analyzer or module can be disabled so that they cannot be used as route targets.

1. On the Main menu screen (TWM), tap **Run**.
2. On the Menu overview screen, tap **Instrument status**.
3. In the **Dis-/enable tests** column on the Instrument status screen, tap the appropriate instrument for which one or more tests are to be disabled.
4. When the tests of the analyzer or module selected are displayed, tap to clear the blue check box in the **TWM status** column and in the rows of the tests to be disabled.

**NOTE:** To disable all tests of an instrument at one time, tap to clear the appropriate check box next to the **TWM status** column header.

5. Tap **Save**.

The tests are now disabled.

**Related information...**

[Instrument status screen \(TWM\)](#), page 174

**Enable the tests on the Instrument status screen (TWM)**

Perform this procedure to enable the tests on the Instrument status screen of the Track Workflow Manager (TWM). Individual tests of an analyzer or module can be enabled so that they can be used as route targets.

1. On the Main menu screen (TWM), tap **Run**.
2. On the Menu overview screen, tap **Instrument status**.
3. In the **Dis-/enable tests** column on the Instrument status screen, tap the appropriate instrument for which one or more tests are to be enabled.
4. When the tests of the analyzer or module selected are displayed, tap the white check box in the **TWM status** column and in the rows of the tests to be enabled.

**NOTE:** To enable all tests of an instrument at one time, tap the appropriate check box next to the **TWM status** column header.

5. Tap **Save**.

The tests are now enabled.

**Related information...**

[Instrument status screen \(TWM\)](#), page 174

## Test status screen (TWM)

On the Test status screen, the operator can perform the following functions:

- View the test status.
- Disable one or more tests by instrument.
- Enable one or more tests by instrument.
- Disable one or more tests by type of analysis.
- Enable one or more tests by type of analysis.

### Related information...

[Main menu screen \(TWM\)](#), page 163

[Test status screen element descriptions \(TWM\)](#), page 179

[View the test status \(TWM\)](#), page 181

[Disable the tests by instrument on the Test status screen \(TWM\)](#), page 181

[Enable the tests by instrument on the Test status screen \(TWM\)](#), page 181

[Disable the tests by type of analysis on the Test status screen \(TWM\)](#), page 182

[Enable the tests by type of analysis on the Test status screen \(TWM\)](#), page 182

[Menu overview screen element descriptions \(TWM\)](#), page 164

## Test status screen element descriptions (TWM)

The Test status screen displays the test status by instrument and by type of analysis.

### By instrument tab

Displays the Test status screen by instrument.

<b>Filter</b>	Displays a text box that is used to search for individual analyses if they have been assigned a type of analysis.
<b>Disabled tests only</b>	Displays a check box that is used to view the disabled tests only.

### Test statuses by instrument table area

<b>TWM status</b>	Displays the status of the Track Workflow Manager.
<b>Test code</b>	Displays the test code.
<b>Test</b>	Displays the test name.
<b>Instrument</b>	Displays the instrument name.

<b>Areas</b>	Displays the areas associated with the test.
<b>TWM status (instrument)</b>	Displays the status of the Track Workflow Manager by instrument.
<b>TSM status (instrument)</b>	Displays the status of the Track Sample Manager by instrument.

**Function buttons**

<b>Refresh</b>	Refreshes the screen.
<b>Cancel</b>	Cancels the changes.
<b>Save</b>	Saves the changes.

**By type of analysis tab**

Displays the Test status screen by type of analysis.

<b>Type of analysis</b>	Displays a drop-down list that is used to select the type of analysis.
<b>Filter</b>	Displays a text box that is used to enter the expression to filter tests.

**Test statuses by type of analysis table area**

<b>Test code</b>	Displays the test code.
<b>Test</b>	Displays the test name.
<b>Instrument name</b>	Displays the analyzer status.
<b>Areas</b>	Displays the areas associated with the instrument.

**Function buttons**

<b>Refresh</b>	Refreshes the screen.
<b>Cancel</b>	Cancels the changes.
<b>Save</b>	Saves the changes.

**Related information...**

[Test status screen \(TWM\)](#), page 179

**View the test status (TWM)**

Perform this procedure to view the test status on the Track Workflow Manager (TWM).

1. On the Main menu screen (TWM), tap **Run**.
2. On the Menu overview screen, tap **Test status**.
3. On the Test status screen, perform one of the following steps:
  - Tap the **By instrument** tab to display the instrument view.
  - Tap the **By type of analysis** tab to display the analysis type view.

**Related information...**

[Test status screen \(TWM\)](#), page 179

**Disable the tests by instrument on the Test status screen (TWM)**

Perform this procedure to disable the tests by instrument on the Test status screen of the Track Workflow Manager (TWM). Individual tests of an analyzer or module can be disabled so that they cannot be used as route targets.

1. On the Main menu screen (TWM), tap **Run**.
2. On the Menu overview screen, tap **Test status**.
3. On the Test status screen, tap the **By instrument** tab to display the instrument view.
4. On the **By instrument** tab of the Test status screen, tap to clear the blue check box in the **TWM status** column and in the row of the tests to be disabled.
5. Tap **Save**.

The tests are now disabled.

**Related information...**

[Test status screen \(TWM\)](#), page 179

**Enable the tests by instrument on the Test status screen (TWM)**

Perform this procedure to enable the tests by instrument on the Test status screen of the Track Workflow Manager (TWM). Individual tests of an analyzer or module can be enabled so that they can be used as route targets.

1. On the Main menu screen (TWM), tap **Run**.
2. On the Menu overview screen, tap **Test status**.
3. On the Test status screen, tap the **By instrument** tab to display the instrument view.
4. On the **By instrument** tab of the Test status screen, tap the white check box in the **TWM status** column and in the rows of the tests to be enabled.

5. Tap **Save**.

The tests are now enabled.

#### Related information...

[Test status screen \(TWM\)](#), page 179

#### Disable the tests by type of analysis on the Test status screen (TWM)

Perform this procedure to disable the tests by type of analysis on the Test status screen of the Track Workflow Manager (TWM). Individual tests of an analyzer or module can be disabled so that they cannot be used as route targets.

1. On the Main menu screen (TWM), tap **Run**.
2. On the Menu overview screen, tap **Test status**.
3. On the Test status screen, tap the **By type of analysis** tab to display the analysis type view.
4. On the **By type of analysis** tab of the Test status screen, tap the type of analysis in the **Type of analysis** drop-down list.

**NOTE:** When the type of analysis is selected, all analyses of the corresponding type and their associated instruments are displayed. To search for individual analyses, use the **Filter** text box if they have been assigned a type of analysis.

5. Tap to clear the blue check box in the **TWM status** column and in the row of the tests to be disabled.
6. Tap **Save**.

The tests are now disabled.

#### Related information...

[Test status screen \(TWM\)](#), page 179

#### Enable the tests by type of analysis on the Test status screen (TWM)

Perform this procedure to enable the tests by type of analysis on the Test status screen of the Track Workflow Manager (TWM). Individual tests of an analyzer or module can be enabled so that they can be used as route targets.

1. On the Main menu screen (TWM), tap **Run**.
2. On the Menu overview screen, tap **Test status**.
3. On the Test status screen, tap the **By type of analysis** tab to display the analysis type view.
4. On the **By type of analysis** tab of the Test status screen, tap the type of analysis in the **Type of analysis** drop-down list.

**NOTE:** When the type of analysis is selected, all analyses of the corresponding type and their associated instruments are displayed. To search for individual analyses, use the **Filter** text box if they have been assigned a type of analysis.

## Section 5

5. Tap the white check box in the **TWM status** column and in the rows of the tests to be enabled.
6. Tap **Save**.

The tests are now enabled.

**Related information...**

[Test status screen \(TWM\)](#), page 179

**Connections screen (TWM)**

On the Connections screen, the operator can view the incoming and outgoing connections to the Track Workflow Manager.

**Related information...**

[Main menu screen \(TWM\)](#), page 163

[Connections screen element descriptions \(TWM\)](#), page 183

[View the connections to TWM](#), page 184

[Menu overview screen element descriptions \(TWM\)](#), page 164

**Connections screen element descriptions (TWM)**

The Connections screen displays connection information.

**Connections table area**

<b>Interface name</b>	Displays the interface name.	
<b>Connection direction</b>	Displays the connection direction:	
	<b>Incoming</b>	For laboratory information system (LIS) and Track Sample Manager (TSM)
	<b>Outgoing</b>	For LIS and TSM
<b>Connection status</b>	Displays the connection status:	
	<b>Green</b>	The interface is connected.
	<b>Red</b>	The interface is not connected.
<b>Connection identifier</b>	Displays the connection identifier.	
<b>Protocol version</b>	Displays the protocol version.	
<b>Local IP with port</b>	Displays the local Internet protocol address.	

**Remote IP with port** Displays the remote Internet protocol address.

**Unsent messages** Displays the number of unsent messages.

**Operation mode** Displays the current operational status.

**NOTE:** The operation mode can be viewed by the operator, but is editable only by the service or administrator user access level.

#### Function button

**Refresh** Refreshes the screen.

#### Related information...

[Connections screen \(TWM\)](#), page 183

#### View the connections to TWM

Perform this procedure to view the incoming and outgoing connections to the Track Workflow Manager (TWM).

1. On the Main menu screen (TWM), tap **Run**.
2. On the Menu overview screen, tap **Connections** to display information about the incoming and outgoing connections.
3. On the Connections screen, view the connection statuses, which are displayed as either green or red:

**Green** The interface is connected.

**Red** The interface is not connected.

#### Related information...

[Connections screen \(TWM\)](#), page 183

## Workflow screen (TWM)

On the Workflow screen of the Track Workflow Manager (TWM), the administrator or the Abbott Laboratories representative can view the following information:

- Definition of final actions
- Configuration of fluid types, tests, and areas





**CAUTION: Risk of incorrect results.** Inappropriate configurations in TWM can cause sample processing errors, leading to incorrect results. Contact an Abbott Laboratories representative or an authorized service representative for guidance on TWM configuration and GLP systems Track automation workflow.



**CAUTION: Risk of delay in sample processing.** Inappropriate configurations in TWM can have an impact on sample processing, leading to a delay in results. Contact an Abbott Laboratories representative or an authorized service representative for guidance on TWM configuration and GLP systems Track automation workflow.

#### Related information...

[Track Workflow Manager user interface](#), page 162

## Master data screen (TWM)

On the Master data screen of the Track Workflow Manager (TWM), the administrator or the Abbott Laboratories representative can view the following information:

- Fluid types
- Tube types
- Types of analysis
- Tests
- Instruments
- Aliquots
- Centrifugation



**CAUTION: Risk of incorrect results.** Inappropriate configurations in TWM can cause sample processing errors, leading to incorrect results. Contact an Abbott Laboratories representative or an authorized service representative for guidance on TWM configuration and GLP systems Track automation workflow.



**CAUTION: Risk of delay in sample processing.** Inappropriate configurations in TWM can have an impact on sample processing, leading to a delay in results. Contact an Abbott Laboratories representative or an authorized service representative for guidance on TWM configuration and GLP systems Track automation workflow.

#### Related information...

[Track Workflow Manager user interface](#), page 162

## Admin screen (TWM)

On the Admin screen of the Track Workflow Manager, the administrator or the Abbott Laboratories representative can view the following information:

- Operator, timer, and parameter settings

- Data export

**Related information...**

*[Track Workflow Manager user interface](#)*, page 162

## Input/Output Module procedures

The module-specific function selection for the Input/Output Module is displayed on the Main menu screen (IOM). 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 103

*Open and close the front and rear module covers*, page 187

*Cycle power to the module*, page 190

*Power on the module*, page 191

*Power off the module*, page 192

*Place the module online*, page 193

*Place the module offline*, page 193

*Pause the module*, page 194

*Deactivate pause mode*, page 194

*Load samples into FlexRacks*, page 195

*Unload samples from FlexRacks*, page 197

*Load analyzer-specific racks*, page 198

*Unload analyzer-specific racks*, page 201

## 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.

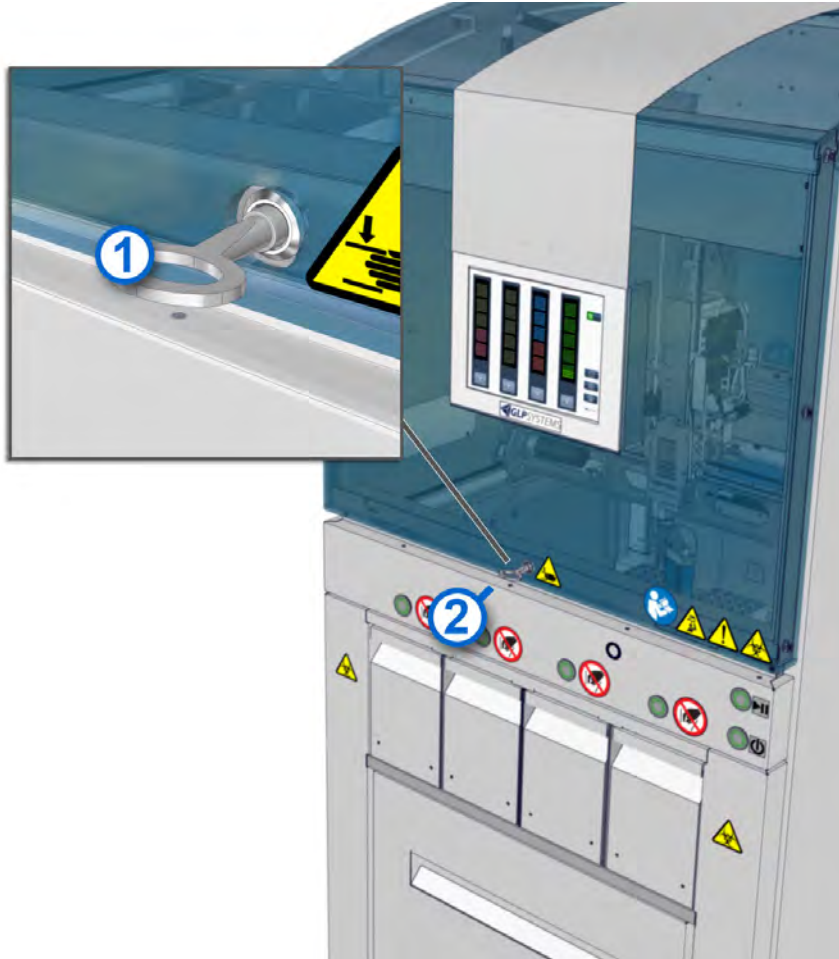
- Be aware that injury can occur when module covers are opened and closed.
- Protect the head when working on modules with open module covers.
- Frequently observe the functionality of the opening mechanism. Regular visual inspection of the covers is necessary during maintenance to ensure proper operation.



**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 30: Front module cover lock**



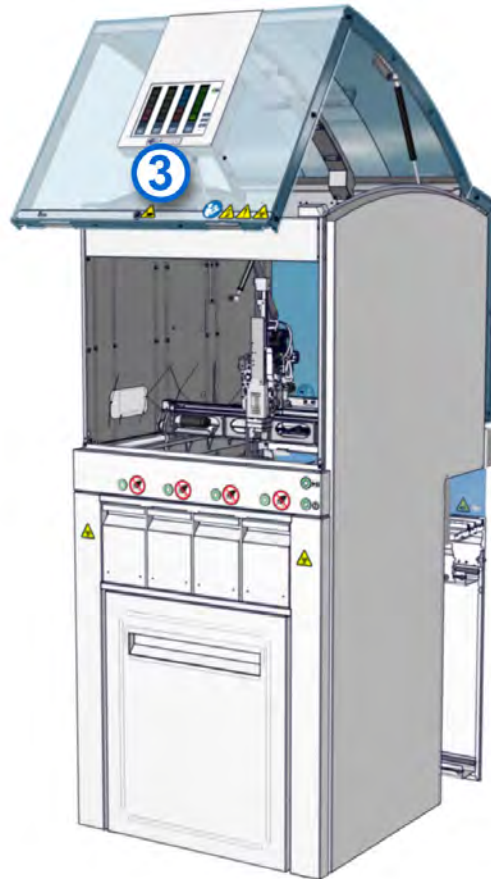
2. While turning the key [1] counterclockwise a quarter turn, begin lifting the front module cover [3] or rear module cover.

**Figure 31: Key**



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

**Figure 32: 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...**

*Input/Output Module procedures*, page 187

*Place the module online*, page 193

*Track overview*, page 37

*Clean the monitor*, page 238

*Clean the module covers*, page 239

*Clean the robot gripper*, page 240

*Clean the AccessPoint*, page 242

*Clean the bar code reader, page 243*

*Replace the robot gripper fingers, page 245*

## 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.
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 33: 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 (IOM) is displayed.

**Related information...**

*Input/Output Module procedures*, page 187

*Delete an area*, page 77

## 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.



**CAUTION: Risk of impact during module initialization.** During initialization, the drawers on the front side of the module open and close automatically. Injuries may occur if the distance between the operator and module is insufficient. Maintain a sufficient distance to the module during initialization and keep the area clear of objects.



**CAUTION: Do not reach into drawers.** Injury can occur when accessing the module interior while the module is powered on. Do not access the drawers while they are opening or closing. Only load the drawers when they are fully open. The drawer push button blinks when it is unsafe to access the drawer. **Never reach into the module through the drawers.**

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 34: 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 (IOM) is displayed.

The On/Off push button is illuminated steady green.

**Related information...**

*Input/Output Module procedures*, page 187

*Main menu screen (IOM)*, page 68

*Start the GLP systems Track*, page 104

*Replace the robot gripper fingers*, page 245

## 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.



2. Wait for the module to power off.

The On/Off push button is illuminated blinking green.

#### Related information...

[Input/Output Module procedures](#), page 187

[Shut down the GLP systems Track](#), page 105

## 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.

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...

[Input/Output Module procedures](#), page 187

[Delete an area](#), page 77

[Create an area type](#), page 75

[Configure a new area](#), page 75

[Edit properties of an area](#), page 76

[Open and close the front and rear module covers](#), page 187

## 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...**

[Input/Output Module procedures](#), page 187

[Delete an area](#), page 77

## 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. Empty CARs continue to route to the module for sample tubes that have completed processing in 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...**

[Input/Output Module procedures](#), page 187

## 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...

[Input/Output Module procedures](#), page 187

## Load samples into FlexRacks

**Prerequisite**                      Become familiar with technical data for sample tubes and sample bar code labels.

**Required module status**            Online

Perform this procedure to load sample tubes into FlexRacks in a drawer.



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



**CAUTION: Do not reach into drawers.** Injury can occur when accessing the module interior while the module is powered on. Do not access the drawers while they are opening or closing. Only load the drawers when they are fully open. The drawer push button blinks when it is unsafe to access the drawer. **Never reach into the module through the drawers.**



**CAUTION: Incorrectly loaded samples may constitute a health hazard for patients.** The input area can be configured in different ways, which may increase the risk of samples being loaded incorrectly. Samples loaded in the wrong area can cause delayed or incorrect results and can cause highly sensitive analyzers to malfunction. Only allow trained personnel to operate the laboratory automation system (LAS). Ensure that samples are loaded into the defined area for the sample type (for example, centrifuged, uncentrifuged, capped, or uncapped) on the LAS.

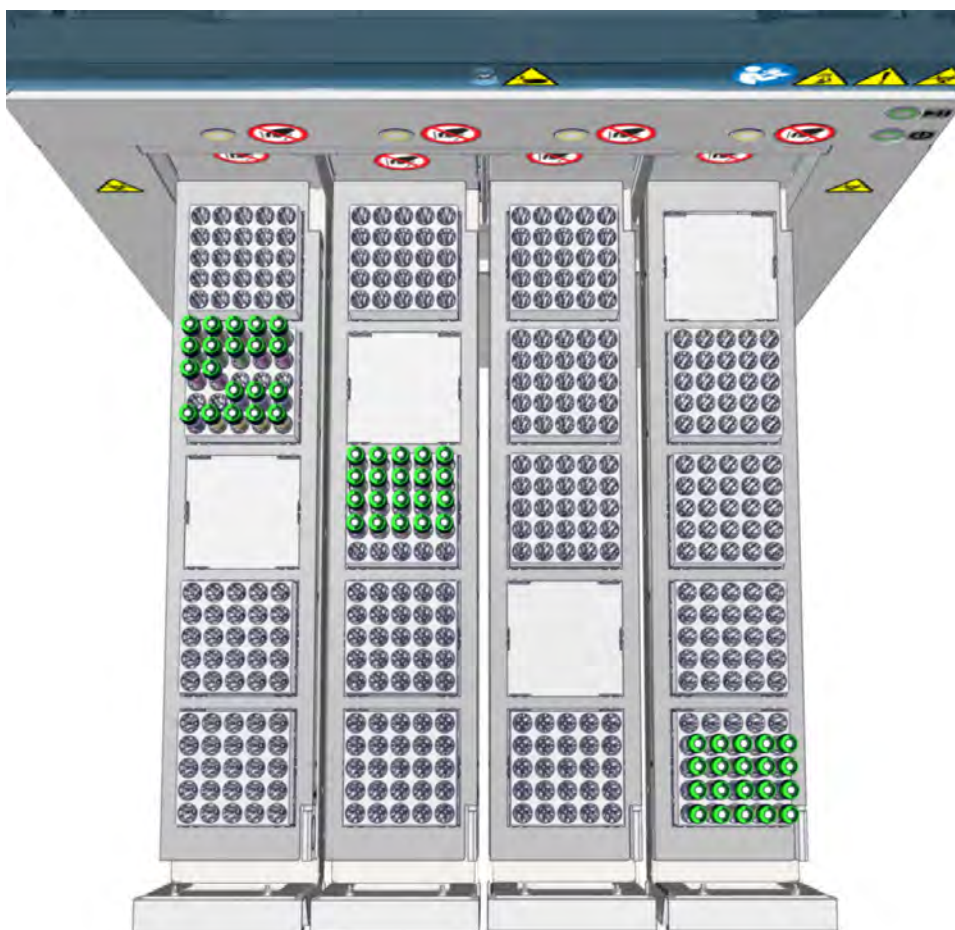


**CAUTION: Risk of cross contamination.** The placement of 16 mm x 100 mm sample tubes next to each other in FlexRacks can cause robot gripper errors. These errors can cause cross contamination of sample matter, resulting in delayed or incorrect results. For any affected samples, the results should be assessed separately by trained personnel. When loading 16 mm x 100 mm sample tubes into FlexRacks, place the tubes apart from each other. Contact an Abbott Laboratories representative or an authorized service representative if help is needed to integrate this option into the laboratory workflow.



**CAUTION: Risk of infection due to contamination.** The placement of 16 mm x 100 mm sample tubes next to each other in FlexRacks can cause robot gripper errors. Spilled sample matter from the sample tubes may cause infections due to contact with non-intact skin or mucous membranes. Wear personal protective equipment while operating the LAS. Avoid direct contact with the sample matter. Follow all disinfection instructions specified by the laboratory for contaminated areas. When loading 16 mm x 100 mm sample tubes into FlexRacks, place the tubes apart from each other. Contact an Abbott Laboratories representative or an authorized service representative if help is needed to integrate this option into the laboratory workflow.

Figure 35: Sample tubes in FlexRacks in the drawers



1. To open the drawer, press the drawer push button or tap the **Open/Close** button on the touchscreen user interface.



**CAUTION:** A minimum clearance between the module and the operator is required to avoid injury when opening the drawer.

**IMPORTANT:** Do not pull on the drawer handle to open the drawer. Pulling on the drawer handle causes an error status for the drawer and does not fully open the drawer.

2. Verify that each sample has a bar code label.

3. Load the sample tubes in a straight, upright position in the correct area according to tube type, capped, uncapped, centrifuged, or uncentrifuged.

**IMPORTANT:** Samples loaded in the wrong area can cause delayed or incorrect results.

4. Ensure that the sample tubes are seated correctly in the FlexRacks.
5. To close the drawer, press the drawer push button or tap the **Open/Close** button on the touchscreen user interface.

#### Related information...

[Input/Output Module procedures](#), page 187

[Sample tube technical data](#), page 95

[Sample bar code label technical data](#), page 93

[Replace a FlexRack](#), page 247

## Unload samples from FlexRacks

**Required module status**      Online

Perform this procedure to unload sample tubes from FlexRacks in a drawer.



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



**CAUTION: Do not reach into drawers.** Injury can occur when accessing the module interior while the module is powered on. Do not access the drawers while they are opening or closing. Only load the drawers when they are fully open. The drawer push button blinks when it is unsafe to access the drawer. **Never reach into the module through the drawers.**

1. To open the drawer, press the drawer push button or tap the **Open/Close** button on the touchscreen user interface.



**CAUTION:** A minimum clearance between the module and the operator is required to avoid injury when opening the drawer.

**IMPORTANT:** Do not pull on the drawer handle to open the drawer. Pulling on the drawer handle causes an error status for the drawer and does not fully open the drawer.

2. Unload all sample tubes from FlexRacks in the output area.
3. To close the drawer, press the drawer push button or tap the **Open/Close** button on the touchscreen user interface.

#### Related information...

[Input/Output Module procedures](#), page 187

[Replace a FlexRack](#), page 247

## Load analyzer-specific racks

**Prerequisite**                      Become familiar with technical data for sample tubes and sample bar code labels.

**Required module status**            Online

Perform this procedure to load an analyzer-specific rack in a drawer.



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



**CAUTION: Do not reach into drawers.** Injury can occur when accessing the module interior while the module is powered on. Do not access the drawers while they are opening or closing. Only load the drawers when they are fully open. The drawer push button blinks when it is unsafe to access the drawer. **Never reach into the module through the drawers.**



**CAUTION: Incorrectly loaded samples may constitute a health hazard for patients.** The input area can be configured in different ways, which may increase the risk of samples being loaded incorrectly. Samples loaded in the wrong area can cause delayed or incorrect results and can cause highly sensitive analyzers to malfunction. Only allow trained personnel to operate the laboratory automation system (LAS). Ensure that samples are loaded into the defined area for the sample type (for example, centrifuged, uncentrifuged, capped, or uncapped) on the LAS.

1. To open the drawer, press the drawer push button or tap the **Open/Close** button on the touchscreen user interface.

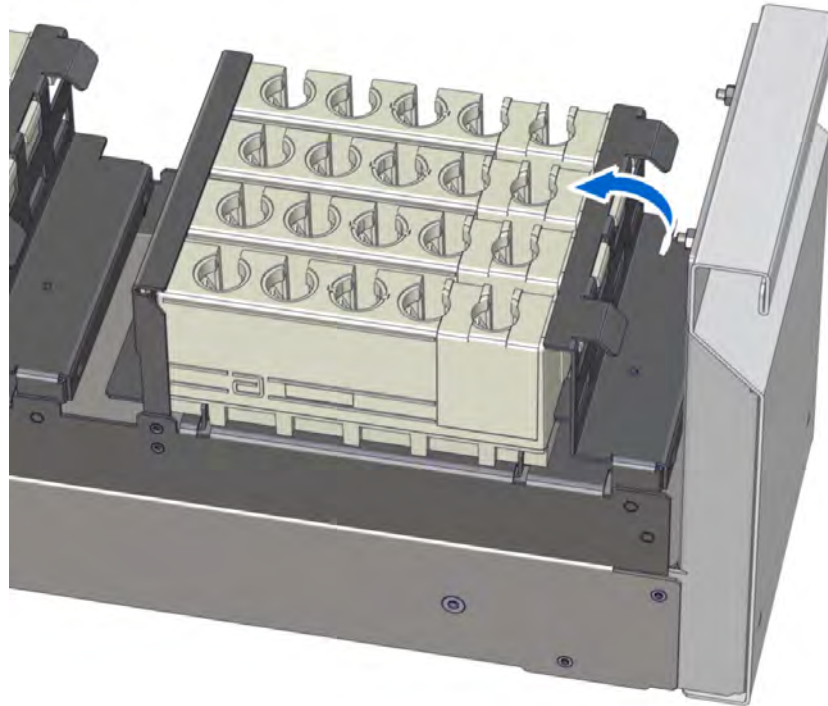


**CAUTION:** A minimum clearance between the module and the operator is required to avoid injury when opening the drawer.

**IMPORTANT:** Do not pull on the drawer handle to open the drawer. Pulling on the drawer handle causes an error status for the drawer and does not fully open the drawer.

2. Load the analyzer-specific rack into the RackPort. Ensure that the rack is fully seated and in the appropriate orientation.
3. Lock the analyzer-specific rack into position in the RackPort.

**NOTE:** The following figure shows an example of how to lock analyzer-specific racks into a RackPort. The locking mechanism may be different for other RackPorts with analyzer-specific racks.

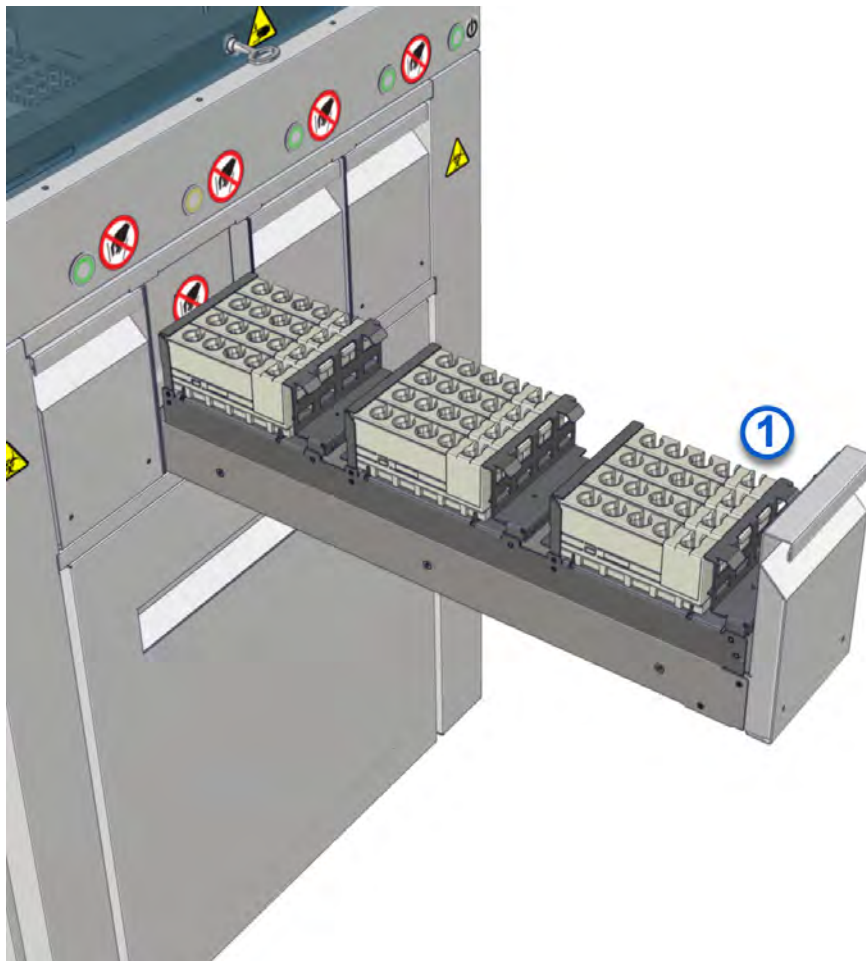
**Figure 36: Locking empty analyzer-specific racks**

4. If loading an input rack, ensure that the sample tubes are in a straight, upright position in the correct area according to tube type, capped, uncapped, centrifuged, or uncentrifuged.

**IMPORTANT:** Samples loaded in the wrong area can cause delayed or incorrect results. Ensure that the tube sizes are appropriate for the rack being used.

5. If unloading an output area, perform one of the following steps:
  - Load empty analyzer-specific racks into all output positions in the RackPort.
  - Leave all rack positions empty.

Figure 37: Empty analyzer-specific racks loaded in all output positions



**IMPORTANT:** If any analyzer-specific racks are loaded into a RackPort for output, all analyzer-specific rack positions **must** be filled. [1]



**CAUTION: Risk of infection due to contamination.** Empty analyzer-specific rack positions in output areas of a RackPort can cause spilled sample matter. Spilled sample matter from the sample tubes may cause infections due to contact with non-intact skin or mucous membranes. Wear personal protective equipment while operating the laboratory automation system. Avoid direct contact with the sample matter. Follow all disinfection instructions specified by the laboratory for contaminated areas.



**CAUTION: Risk of delayed analysis due to loss of sample.** Empty analyzer-specific rack positions in output areas of a RackPort can cause spilled sample matter. Spilled sample matter can cause contamination and severe injuries to the operator. Inadequate sample volume in sample tubes causes delays in diagnosis and treatment of patients.

6. To close the drawer, press the drawer push button or tap the **Open/Close** button on the touchscreen user interface.



**Related information...**

*Input/Output Module procedures*, page 187

*Sample tube technical data*, page 95

*Sample bar code label technical data*, page 93

## Unload analyzer-specific racks

**Prerequisite**                      Become familiar with technical data for sample tubes and sample bar code labels.

**Required module status**            Online

Perform this procedure to unload an analyzer-specific rack from a drawer.



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



**CAUTION: Do not reach into drawers.** Injury can occur when accessing the module interior while the module is powered on. Do not access the drawers while they are opening or closing. Only load the drawers when they are fully open. The drawer push button blinks when it is unsafe to access the drawer. **Never reach into the module through the drawers.**

1. To open the drawer, press the drawer push button or tap the **Open/Close** button on the touchscreen user interface.

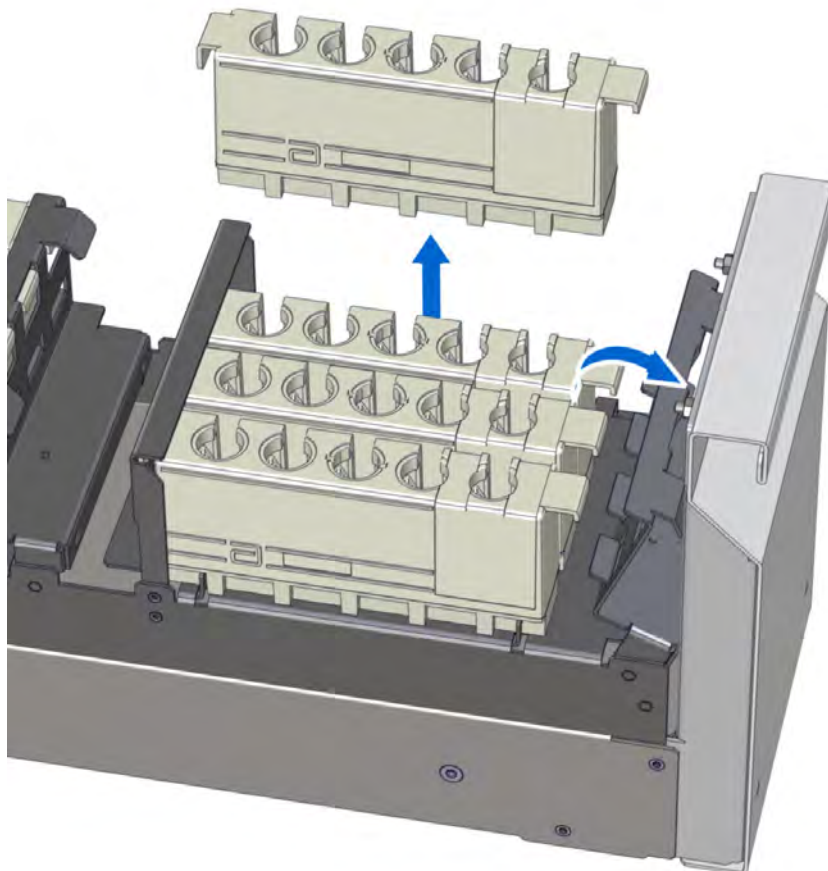


**CAUTION:** A minimum clearance between the module and the operator is required to avoid injury when opening the drawer.

**IMPORTANT:** Do not pull on the drawer handle to open the drawer. Pulling on the drawer handle causes an error status for the drawer and does not fully open the drawer.

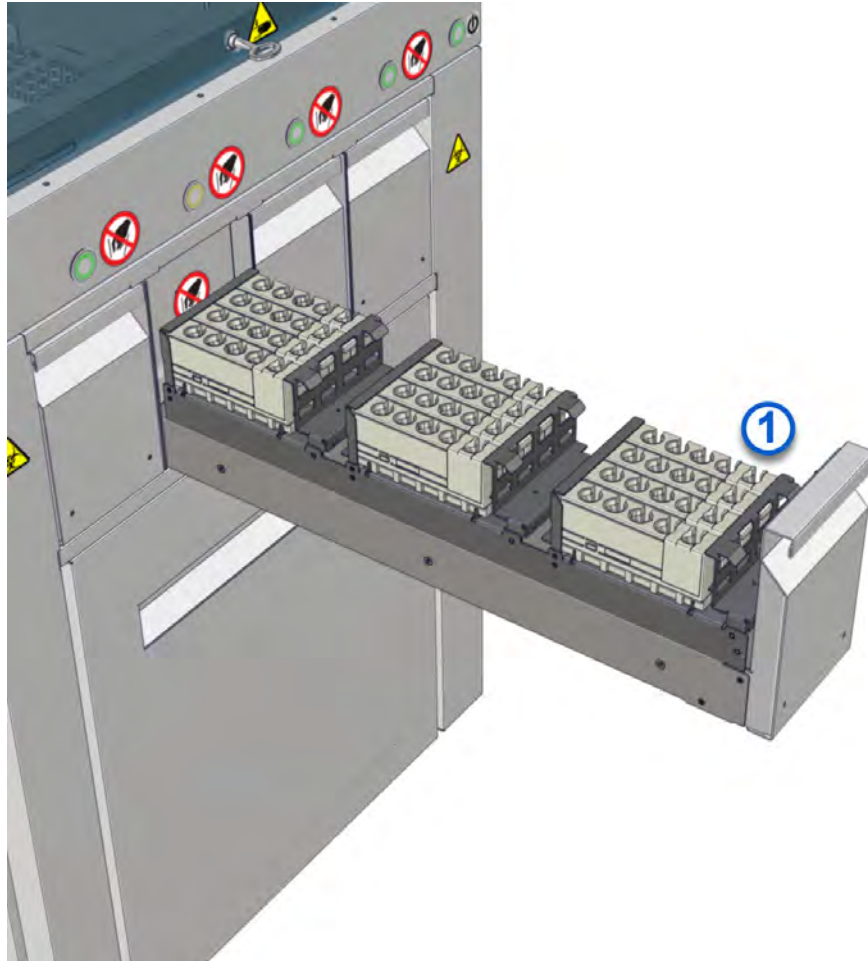
2. Unlock the analyzer-specific rack in the RackPort.

Figure 38: Unlocking empty analyzer-specific racks



3. Unload the analyzer-specific rack from the RackPort.
4. If unloading an output area, perform one of the following steps:
  - Load empty analyzer-specific racks into all output positions in the RackPort.
  - Leave all rack positions empty.

Figure 39: Empty analyzer-specific racks loaded in all output positions



**IMPORTANT:** If any analyzer-specific racks are loaded into a RackPort for output, all analyzer-specific rack positions **must** be filled. [1]



**CAUTION: Risk of infection due to contamination.** Empty analyzer-specific rack positions in output areas of a RackPort can cause spilled sample matter. Spilled sample matter from the sample tubes may cause infections due to contact with non-intact skin or mucous membranes. Wear personal protective equipment while operating the laboratory automation system. Avoid direct contact with the sample matter. Follow all disinfection instructions specified by the laboratory for contaminated areas.



**CAUTION: Risk of delayed analysis due to loss of sample.** Empty analyzer-specific rack positions in output areas of a RackPort can cause spilled sample matter. Spilled sample matter can cause contamination and severe injuries to the operator. Inadequate sample volume in sample tubes causes delays in diagnosis and treatment of patients.

5. Lock the empty analyzer-specific racks into position in the RackPort.

6. To close the drawer, press the drawer push button or tap the **Open/Close** button on the touchscreen user interface.

**Related information...**

*Input/Output Module procedures*, page 187

*Sample tube technical data*, page 95

*Sample bar code label technical data*, page 93

## Introduction

The GLP systems Track does not require calibration.

## NOTES

## 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.

### **Related information...**

*Covers, hoods, and sensors*, page 208

*Requirements for handling the specimens*, page 210

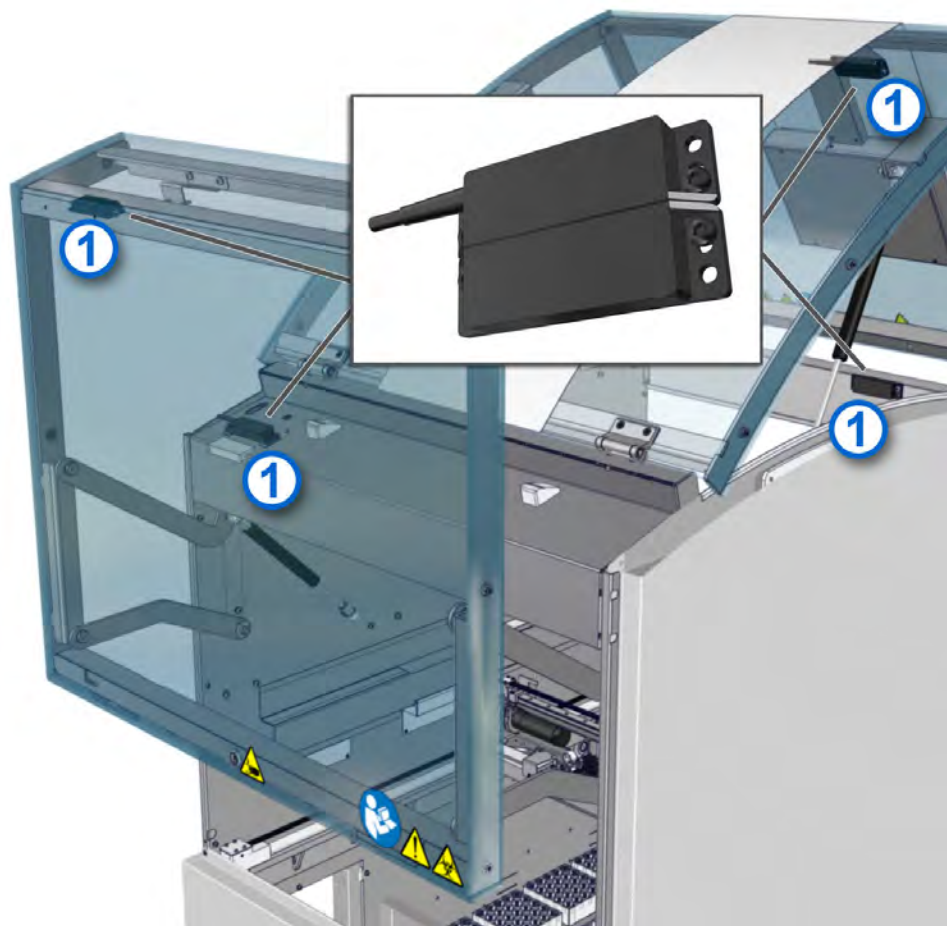
*General safety information*, page 9

## Covers, hoods, and sensors

Electronic sensors should not be circumvented or removed from operation. The following components are fitted on the laboratory automation system:

- Contact sensors on the module covers, doors, and drawers
- Photoelectric sensors on the module drawers
- Covers on the modules and hoods on the track elements

**Figure 40: Module contact sensors**



**Legend:**

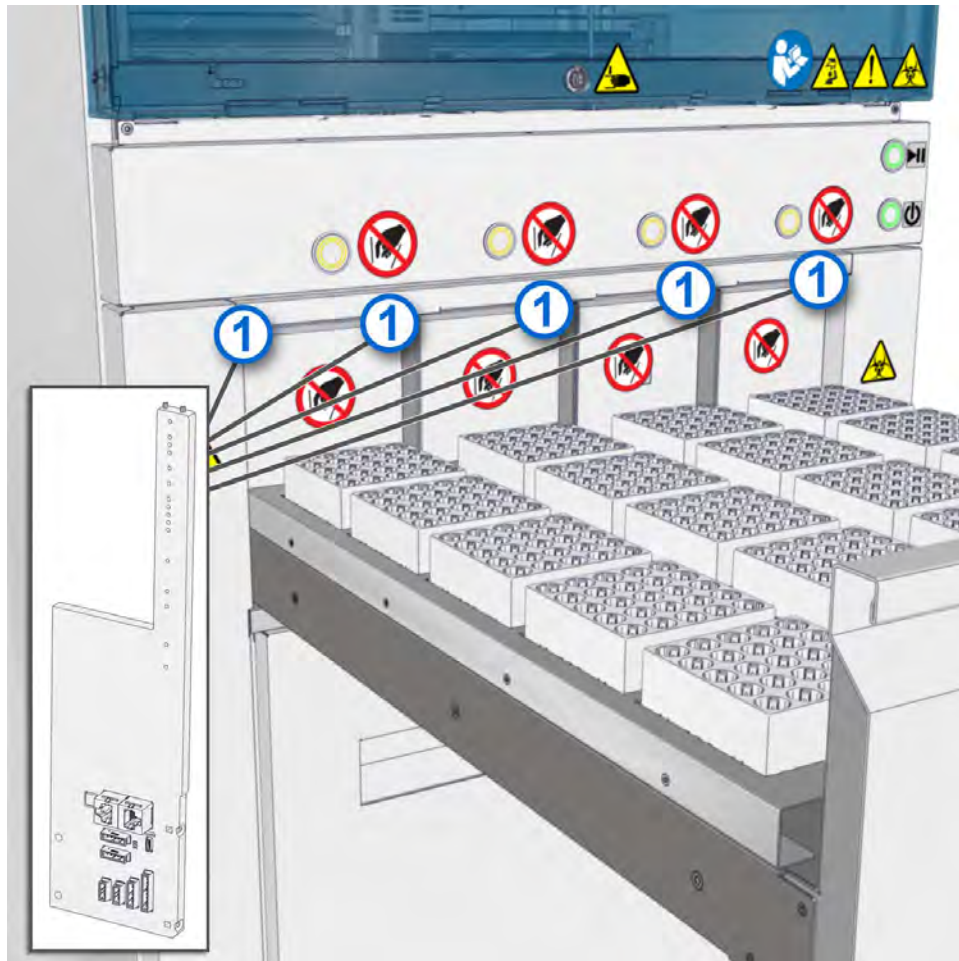
1. Module contact sensors: Opening the module covers slows down the robot movement. The module covers and track hoods provide protection against direct access.



**CAUTION:** To prevent operator injury, the module status must be transitioned to Offline before the module interior is accessed.



Figure 41: Photoelectric sensors

**Legend:**

1. Photoelectric sensors: Detect the loading status of RackPorts and any manual intervention in the drawer. Photoelectric sensors are used to stop the closing operation if an object or a body part is placed between the drawers and the housing. These sensors are located on the sides of the drawer inserts and form a light grid.

**NOTE:** Some modules have additional components. For more information, refer to the appropriate manual.

**Related information...**

*Operational precautions and limitations*, page 207

## Requirements for handling the specimens

Consider all specimens as potentially infectious. In addition, consider all system surfaces or components that have come in contact with specimens as potentially infectious.



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

### Related information...

*Operational precautions and limitations*, page 207

## 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.

### **Related information...**

*Operator responsibility*, page 212

*Safety icons*, page 213

*Biological hazards*, page 215

*Basic safety*, page 217

*CAR safety*, page 220

*Laser safety*, page 221

*Spill cleanup*, page 222

*Requirements for decontamination*, page 223

*Input/Output Module safety*, page 224

*General safety information*, page 9

## Operator responsibility

Use the system only according to its designed purpose. Operators must be trained before operating the system. Failure to comply with safe-use instructions may cause personal injury, harm the environment, damage the system, or adversely affect test results.











### **Related information...**





*Hazards*, page 211

## 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.

**Table 21: Safety icons and descriptions**

Icon	Description
 	<b>CAUTION: Biological RISKS</b> Identifies an activity or an area where the operator may be exposed to potentially infectious material.
	<b>CAUTION: Class 2 Laser radiation when open. Avoid eye exposure to light. Do not stare into the beam.</b> Warns against the direct viewing of the beam or reflections from the beam.
	<b>CAUTION: Hot Surface</b> Identifies an activity or an area where the operator may be exposed to hot surfaces.
	<b>CAUTION: Mind or watch your hands</b> Identifies an activity or an area where the operator may be exposed to hand injuries.
	<b>CAUTION: Overhead obstruction</b> Identifies an activity or an area where the operator may be exposed to overhead obstructions.
	<b>CAUTION: Possibility of electric shock</b> Indicates the possibility of electric shock if procedural controls or engineering controls are not observed.
	<b>CAUTION: Sharp Element</b> Identifies an activity or an area where the operator may be exposed to sharp elements.
	<b>CAUTION</b> 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: <b>CAUTION: Moving Parts</b> Identifies an activity or an area where the operator may be exposed to moving parts.
	<b>CAUTION: Power off mains disconnect switch from electrical supply</b> 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
	<b>CAUTION: Do not reach inside</b> Identifies an activity or an area where the operator may be exposed to injury.
	<b>CAUTION: Protective conductor terminal</b> Identifies an area where a terminal is connected to an external conductor or the terminal of a ground electrode.
	<b>Observe operations manual</b> Indicates that the operations manual must be read.
	<b>WEEE: Waste Electrical and Electronic Equipment</b> 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 211

## Biological hazards

Exposure to potentially infectious materials may occur when the following activities are performed:

- Handling of specimens
- Spill cleanup
- Waste handling and disposal
- System relocation
- Maintenance procedures
- Decontamination procedures
- Component replacement procedures

Comply with the precautions to help minimize the impact of this exposure.

### Related information...

[Hazards](#), page 211

[Precautions](#), page 215

## Precautions

Consider as potentially infectious all system surfaces, components, and consumables that have come in contact with human-sourced materials. No known test method can offer complete assurance that products derived from human-sourced materials do not transmit infection.

It is recommended that all potentially infectious materials are handled according to the OSHA Standard on Bloodborne Pathogens<sup>1</sup>. Use Biosafety Level 2<sup>2</sup> or appropriate regional, national, and institutional biosafety practices<sup>3,4</sup> for materials that contain, are suspected of containing, or are contaminated with infectious agents. Precautions include the following actions:

- When handling human-sourced materials or contaminated system components:
  - Wear gloves, a lab coat, and protective eyewear.
  - Do not eat, drink, smoke, apply cosmetics, or handle contact lenses.
- Do not pipette by mouth.
- Clean spills of potentially infectious materials and contaminated system components with a detergent. Then mist or wipe the surface with 0.5% sodium hypochlorite solution. Let the disinfectant remain on the surface for a minimum of 10 minutes of contact time.
- Decontaminate and dispose of all samples, reagents, and other potentially contaminated materials in accordance with local, state, and national regulations.

Immediately clean an affected area if any exposure to biohazardous or potentially infectious materials occurs:

<b>Eyes</b>	Rinse with water for 15 minutes.
<b>Mouth</b>	Rinse with water.
<b>Skin</b>	Wash the affected area with soap and water. Apply alcohol, povidone iodine, chlorhexidine, or another antiseptic.
<b>Puncture wound</b>	Let the wound bleed freely. Wash the affected area with soap and water.

Seek medical attention as soon as possible for appropriate follow-up.

### **Bibliography references**

1. US Department of Labor, Occupational Safety and Health Administration, 29 CFR Part 1910.1030, Bloodborne pathogens.
2. US Department of Health and Human Services. *Biosafety in Microbiological and Biomedical Laboratories*. 6th ed. Washington, DC: US Government Printing Office; June 2020.
3. World Health Organization. *Laboratory Biosafety Manual*. 4th ed. Geneva: World Health Organization; 2020.
4. Clinical and Laboratory Standards Institute (CLSI). *Protection of Laboratory Workers From Occupationally Acquired Infections; Approved Guideline--Fourth Edition*. CLSI Document M29-A4. Wayne, PA: CLSI; 2014.

### **Related information...**

[Biological hazards](#), page 215



## Basic safety

The following hazard information and safety instructions are applicable to operation of the laboratory automation system (LAS).



**CAUTION: Device generates magnetic fields.** Any person with a pacemaker or other similar implanted devices should exercise caution during operation of the LAS.



**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.



**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.**



**CAUTION: Do not reach inside.** The module covers can be opened **only** with the key when the module is offline. **Never reach into the module when it is online. Exposure to potentially harmful crushing by the robots can occur.**



**CAUTION: Possibility of electric shock.** Activities or areas on the track may expose the operator or service personnel to high voltage if procedural or engineering controls are not followed. High voltage cables and electrical components are located in the correspondingly identified areas. Inappropriate handling poses a health hazard and can damage the components.

- Only allow trained service personnel and electricians to work in these areas.
- Interrupt the supply voltage before working in these areas.



**CAUTION: Risk of contamination and injury.** During operation of the 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 or 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.



**CAUTION: Contamination hazards and misdiagnosis.** During operation of the LAS, sample tubes and components may be damaged due to failure to comply with safe-use instructions. Sample matter leaks may cause cross contamination with other sample matter and a subsequent misdiagnosis.

- Follow all disinfection instructions specified by the laboratory.
- For any affected samples, have the test result assessed separately by trained personnel.



**CAUTION: Incorrect results caused by manual intervention on the LAS.** Manual intervention or exchanging of samples can cause incorrect assignment of test results and incorrect patient diagnoses.

- Do not exchange samples in CARs on the LAS.
- Only allow trained personnel to operate the LAS.
- Only use the specified input and output areas to intervene on the LAS.



**CAUTION: Incorrect results may constitute a health hazard.** Sample contamination can occur if a robotic arm drops an open sample tube. Sample contamination can cause delayed or incorrect results, or incorrect patient diagnoses.

- Only allow trained personnel to operate the LAS.
- Specifically assess the situation each time after a fault has occurred.



**CAUTION: Delayed analysis due to power failure.** In the case of a power failure, the samples (including emergency samples) remain inside the LAS and must be removed manually as required.

- Only allow trained personnel to remove the samples manually.
- If a sample is held by a robot gripper, manually remove the sample.
- Observe the LAS for any remaining emergency samples and remove them manually.
- Follow the information in the operations manuals for the modules.



**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.

**NOTE:** If the power supply is interrupted, the current status of the modules is saved and the modules are powered off automatically. The data is also saved. As soon as the power supply has been restored, the modules must be initialized manually.

**NOTE:** For optimal system performance, comply with the following general requirements of the system:

- Perform frequent visual inspections of the entire LAS.
- Adhere to the LAS maintenance schedule.
- Do not use transmitters, such as mobile phones, in the immediate vicinity of the LAS.
- Do not place objects on the module covers and track hoods.
- Confirm that faulty samples are directed into an error area.
- Only use approved customer-replaceable components on the LAS.

- Only use Abbott consumables. All consumables are intended for single-use only.
- Follow all necessary precautions to provide electrostatic discharge protection.
- For information related to Article 33 of the EU REACH regulation (EC 1907/2006, Registration, Evaluation, Authorisation, and Restriction of Chemicals), go to [pmis.abbott.com](http://pmis.abbott.com). For website logon issues, contact Abbott Laboratories at [abbott.REACH@abbott.com](mailto:abbott.REACH@abbott.com). Follow all necessary precautions to provide electrostatic discharge protection.
- To view the China RoHS 2 Hazardous Substance tables, in accordance with the People's Republic of China Electronic Industry Standard SJ/T 11364-2014, go to [corelaboratory.abbott.com/registration-ous](http://corelaboratory.abbott.com/registration-ous) (select Technical Library > Other Reference Documents > China RoHS Hazardous Substance Tables).

**Related information...**

[Hazards](#), page 211

[Sample tube technical data](#), page 95

[Spill cleanup](#), page 222

## CAR safety

The following hazard information and safety instructions are applicable to CARs. No safety indications are attached to the CARs.



**CAUTION: Rechargeable lithium battery fire and explosion hazards.** The CARs contain lithium-ion batteries. Charging deep-discharged batteries or inappropriately handling batteries results in a risk of fire and explosion.

- Do not repair or replace CAR batteries.
- Do not store CARs where they could be impacted by mechanical force. Treat the CARs as fragile to ensure the plastic material contains no openings or cracks. If the plastic is cracked, dispose of the CAR according to local regulations for lithium battery disposal.
- Regularly maintain the CARs.
- Do not charge a CAR if it fails to respond to an activation attempt. Failure to respond indicates a deep-discharged lithium battery.
- Store CARs in a cool, dry environment away from any heat source, such as heaters, lamps, or direct sunlight.
- Do not store any defective CARs.
- Ensure that any defective CARs are immediately repaired or disposed of in an appropriate manner.
- Do not dispose of CARs in a fire or heater. Adhere to local regulations for lithium battery disposal.

### Related information...

[Hazards](#), page 211

[CAR disposal](#), page 238

## Laser safety

The GLP systems Track is a CLASS 1 LASER PRODUCT.



**CAUTION:** Use of controls or adjustments or performance of procedure other than those specified herein may result in hazardous radiation exposure.

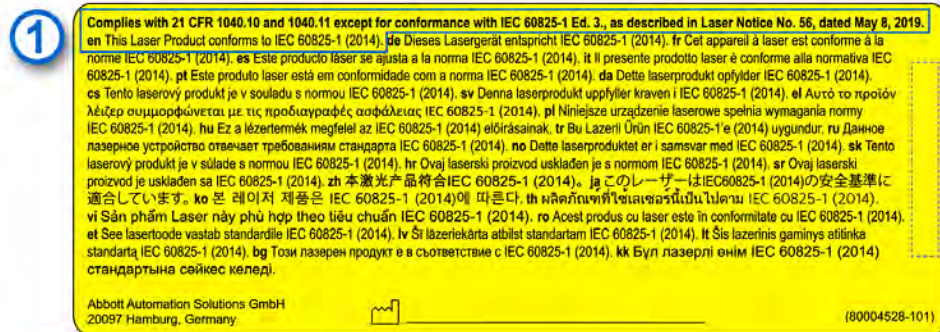
Some modules contain embedded Class 2 laser bar code readers. Refer to the supplemental and interface manuals for module-specific information about Class 2 lasers.

Although momentary exposure to a Class 2 laser (1 mW maximum power, 650 nm wavelength with a pulse duration of 91  $\mu$ s) is not known to be harmful due to the blink reflex, failure to follow appropriate procedures may result in a hazardous situation.

- Do not look into the aperture.
- Do not stare directly into the beam.
- Do not place any objects into the beam.
- Do not remove any protective covers or beam blocks.

Only an Abbott Laboratories service representative or an authorized service representative should service the laser. The protective covers should only be removed by an Abbott Laboratories service representative or an authorized service representative. The bar code reader is not serviceable and should be replaced **only** by an Abbott Laboratories service representative or an authorized service representative.

**Figure 42: Manufacturer laser certification label for the Input/Output Module (IOM)**



### Legend:

1. Manufacturer laser certification label: This label is located near the ratings label on the IOM.

**Complies with 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019. en This Laser Product conforms to IEC 60825-1 (2014).**

### Related information...

[Hazards](#), page 211

## Spill cleanup

Clean spills according to established biosafety practices and follow instructions in the Safety Data Sheets. In general, safe work practices for spill cleanup include the following requirements:

1. Wear appropriate personal protective equipment, such as gloves, a lab coat, and eyewear.
2. Absorb the spill with an absorbent material.
3. Wipe the spill area with a detergent.
4. Wipe the spill area with 0.5% sodium hypochlorite solution. Let the disinfectant remain on the surface for a minimum of 10 minutes of contact time.
5. Dispose of all absorbent material and wipes according to local, state, and national regulations.

### Related information...

[Hazards](#), page 211

[Basic safety](#), page 217

## Requirements for decontamination

Sodium hypochlorite and other disinfectants are typically hazardous chemicals that react with many chemicals, materials, and living tissues. To reduce the potential for exposure to disinfectants, comply with the following general precautions:

- Obtain and review the manufacturer's safety information before using any disinfectant.
- Wear appropriate personal protective equipment (such as gloves, a lab coat, and eyewear) when performing decontamination activities.

### Related information...

[Hazards](#), page 211

## Input/Output Module safety

Follow all safety information in this manual. 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. For example, if sample matter flows below an active or a passive lane element, service intervention is required.



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



**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.



**CAUTION:** To prevent operator injury, the module status must be transitioned to Offline before the module interior is accessed.



**CAUTION: Moving parts.** The operator may be injured by moving parts inside the module.

- Do not reach into the module while the module covers are closed.
- Be aware of moving parts while the module covers are open.
- Keep the module covers closed and locked during operation.



**CAUTION: Incorrectly loaded samples may constitute a health hazard for patients.**

The input area can be configured in different ways, which may increase the risk of samples being loaded incorrectly. Samples loaded in the wrong area can cause delayed or incorrect results and can cause highly sensitive analyzers to malfunction. Only allow trained personnel to operate the laboratory automation system (LAS). Ensure that samples are loaded into the defined area for the sample type (for example, centrifuged, uncentrifuged, capped, or uncapped) on the LAS.



**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.



**CAUTION: Risk of cross contamination.** The placement of 16 mm x 100 mm sample tubes next to each other in FlexRacks can cause robot gripper errors. These errors can cause cross contamination of sample matter, resulting in delayed or incorrect results. For any affected samples, the results should be assessed separately by trained personnel. When loading 16 mm x 100 mm sample tubes into FlexRacks, place the tubes apart from each other. Contact an Abbott Laboratories representative or an authorized service representative if help is needed to integrate this option into the laboratory workflow.





**CAUTION: Risk of infection due to contamination.** The placement of 16 mm x 100 mm sample tubes next to each other in FlexRacks can cause robot gripper errors. Spilled sample matter from the sample tubes may cause infections due to contact with non-intact skin or mucous membranes. Wear personal protective equipment while operating the LAS. Avoid direct contact with the sample matter. Follow all disinfection instructions specified by the laboratory for contaminated areas. When loading 16 mm x 100 mm sample tubes into FlexRacks, place the tubes apart from each other. Contact an Abbott Laboratories representative or an authorized service representative if help is needed to integrate this option into the laboratory workflow.

**NOTE:** Only use sample tubes that are approved for the LAS.

**Related information...**

[Hazards](#), page 211

[Sample tube technical data](#), page 95

## 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*, page 228

## Cleaning and maintenance

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 laboratory automation system (LAS). Only allow trained personnel to clean the LAS. Only use the recommended cleaning agents.

The appropriate maintenance of the LAS is important for optimal performance.



**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 LAS.

Follow all safety information in this manual. 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. For example, if sample matter flows below an active or a passive lane element, service intervention is required.

### Related information...

*Service, maintenance, and diagnostics*, page 227

*Track cleaning*, page 228

*Track maintenance*, page 230

*CAR cleaning*, page 231

*CAR maintenance*, page 234

*Input/Output Module cleaning*, page 238

*Input/Output Module maintenance*, page 243

## Track cleaning

Cleaning procedures should be performed only when no samples are present on the track to prevent contamination of samples.



**CAUTION: Risk of deformed lane element.** Do not use a dishwasher to clean the lane elements as it may cause deformities. Only use a laboratory-grade surface disinfectant or a mild, nongreasing cleaning agent to clean the lane elements.

### Related information...

*Cleaning and maintenance*, page 228

*Weekly cleaning procedure*, page 228

*As-needed cleaning procedures*, page 229

## Weekly cleaning procedure

A weekly cleaning procedure is required on the track.

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### Related information...

[Track cleaning](#), page 228

[Clean the track hoods](#), page 229

### Clean the track hoods

#### Required materials

- Antistatic plastic cleaner
- Lint-free cloth

Perform this weekly procedure to clean the track hoods.

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

### Related information...

[Weekly cleaning procedure](#), page 228

[Open and close the track hoods](#), page 112

### As-needed cleaning procedures

As-needed cleaning procedures are required on the track.

### Related information...

[Track cleaning](#), page 228

[Clean the lane elements](#), page 229

[Clean the guiding slot](#), page 230

### Clean the lane elements

#### Required materials

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

Perform this as-needed procedure to clean the lane elements.

1. Open the track hood.
2. Remove dust from the lane elements with the handheld vacuum cleaner.
3. Dampen a lint-free cloth with a surface disinfectant.
4. Carefully wipe the lane elements to remove any remaining dust.
5. Close the track hood.

**NOTE:** If fluid flows below an active or a passive lane element, contact an Abbott Laboratories representative or an authorized service representative.

**Related information...**

*As-needed cleaning procedures*, page 229

*Open and close the track hoods*, page 112

**Clean the guiding slot**

**Required materials**     Extra thin cotton swab or soft brush

Perform this as-needed procedure to clean the guiding slot.

1. Open the track hood.
2. Carefully remove any dust from the guiding slot with an extra thin cotton swab or a soft brush.
3. Close the track hood.

**Related information...**

*As-needed cleaning procedures*, page 229

*Open and close the track hoods*, page 112

## Track maintenance

A daily visual inspection of the track is recommended. Sample matter found on the track may indicate mechanical malfunctions.

The following checks are required on the track to maintain optimal system performance.

Check	Activity	Interval
Inspect the cross switch controllers for dust.	Perform <i>Clean the lane elements</i> , page 229 if necessary.	Daily
Verify that no foreign objects are present on the cross switch controllers.	Remove any foreign objects.	Daily
Verify that the track hoods are closed and locked.	Perform <i>Open and close the track hoods</i> , page 112 to close the track hoods if necessary.	Daily
Verify that no recaps are present on the track.	Remove any recaps.	Daily
Verify that there are no observed problems.	Resolve any observed problems as needed. See <i>Track observed problems</i> , page 370.	Daily
Inspect the lane elements for dust.	Perform <i>Clean the lane elements</i> , page 229 or <i>Clean the guiding slot</i> , page 230 if necessary.	Weekly

**Related information...**

*Cleaning and maintenance*, page 228

## CAR cleaning

Cleaning procedures should be performed only when the CARs are empty.



**CAUTION: Material damage due to incorrect cleaning.** Incorrect cleaning may damage the electronics in the CAR. Regularly clean and maintain the CARs. Only use the recommended cleaning agents. Keep liquid or moisture from entering the CARs.

**Related information...**

*Cleaning and maintenance*, page 228

*Weekly cleaning procedure*, page 231

*Monthly cleaning procedure*, page 232

*Quarterly cleaning procedure*, page 232

*As-needed cleaning procedures*, page 233

### Weekly cleaning procedure

A weekly cleaning procedure is required on the CARs.

**Related information...**

*CAR cleaning*, page 231

*Clean the sensors*, page 231

### Clean the sensors

**Required materials**     Lint-free brush or cloth

Perform this weekly procedure to clean the collision sensors and drive operation sensor on a CAR.

1. Open the track hood.
2. Remove the CAR from the track and turn it off.
3. Carefully remove any dust from the three collision sensors with a lint-free brush or cloth.
4. Carefully remove any dust from the drive operation sensor with a lint-free brush or cloth.
5. Turn on the CAR and place it back on the track in front of an active lane element.
6. Close the track hood.

**Related information...**

*Weekly cleaning procedure*, page 231

*Open and close the track hoods*, page 112

## Monthly cleaning procedure

A monthly cleaning procedure is required on the CARs.

### Related information...

[CAR cleaning](#), page 231

[Clean the housing](#), page 232

### Clean the housing

- Required materials**
- Laboratory-grade surface disinfectant
  - Lint-free cloth

Perform this monthly procedure to clean the housing on a CAR.

1. Open the track hood.
2. Remove the CAR from the track and turn it off.
3. Dampen a lint-free cloth with a surface disinfectant.
4. Carefully wipe the housing to remove any dust.
5. Turn on the CAR and place it back on the track in front of an active lane element.
6. Close the track hood.

### Related information...

[Monthly cleaning procedure](#), page 232

[Open and close the track hoods](#), page 112

## Quarterly cleaning procedure

A quarterly cleaning procedure is required on the CARs.

### Related information...

[CAR cleaning](#), page 231

[Clean the charging contacts](#), page 232

### Clean the charging contacts

- Required materials**
- Cotton swabs
  - 99% isopropanol

Perform this quarterly procedure to clean the charging contacts on a CAR.

1. Open the track hood.
2. Remove the CAR from the track and turn it off.



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3. Wet a cotton swab with 99% isopropanol.
4. Carefully remove any dust from the charging contacts.
5. Turn on the CAR and place it back on the track in front of an active lane element.
6. Close the track hood.

### Related information...

[Quarterly cleaning procedure](#), page 232

[Open and close the track hoods](#), page 112

## As-needed cleaning procedures

As-needed cleaning procedures are required on the CARs.

### Related information...

[CAR cleaning](#), page 231

[Clean the sample holder](#), page 233

[Clean the drive wheel and the wheel arch](#), page 233

## Clean the sample holder

### Required materials

- Laboratory-grade surface disinfectant
- Lint-free cloth

Perform this as-needed procedure to clean the sample holder on a CAR.

1. Open the track hood.
2. Remove the CAR from the track and turn it off.
3. Dampen a lint-free cloth with a surface disinfectant.
4. Carefully wipe the sample holder to remove any dust.
5. Turn on the CAR and place it back on the track in front of an active lane element.
6. Close the track hood.

### Related information...

[As-needed cleaning procedures](#), page 233

[CAR design and function](#), page 42

[Open and close the track hoods](#), page 112

## Clean the drive wheel and the wheel arch

### Required materials

- Laboratory-grade surface disinfectant
- Lint-free cloth

Perform this as-needed procedure to clean the drive wheel and the wheel arch on a CAR.

1. Open the track hood.
2. Remove the CAR from the track and turn it off.
3. Dampen a lint-free cloth with a surface disinfectant.
4. Carefully wipe the drive wheel and the wheel arch to remove any dust.
5. Turn on the CAR and place it back on the track in front of an active lane element.
6. Close the track hood.

#### Related information...

[As-needed cleaning procedures](#), page 233

[CAR design and function](#), page 42

[Open and close the track hoods](#), page 112

## CAR maintenance

A daily visual inspection of the CARs is recommended.

**IMPORTANT:** The CARs must be serviced by an Abbott Laboratories representative or an authorized service representative at least one time each year.

The following checks are required on the CARs to maintain optimal system performance.

Check	Activity	Interval
Verify that there are no observed problems.	Resolve any observed problems as needed. See <a href="#">CAR observed problems</a> , page 372.	Daily
Verify that the guiding pin is not worn.	Perform <a href="#">Replace the front underseal of a CAR</a> , page 237 if necessary.	Weekly
Verify that the sliders are not worn.	Perform <a href="#">Replace the front underseal of a CAR</a> , page 237 if necessary.	Weekly
Inspect the drive wheel for dust.	Perform <a href="#">Clean the drive wheel and the wheel arch</a> , page 233 if necessary.	Weekly
Inspect the drive wheel for malfunctions.	Contact an Abbott Laboratories representative or an authorized service representative if necessary.	Weekly
Verify that the sample holder is not defective.	Contact an Abbott Laboratories representative or an authorized service representative if necessary.	Biweekly
Verify the tension at the sample holder.	Contact an Abbott Laboratories representative or an authorized service representative if necessary.	Monthly
Verify that the serial number is affixed to the CAR.	Contact an Abbott Laboratories representative or an authorized service representative if necessary.	Monthly

**Figure 43: Slider wear on the front underseal of the CAR****Legend:**

1. Slider is OK.
2. Slider is still OK.
3. Slider is worn and permanent magnet is visible.
4. Guiding pin is OK.
5. Guiding pin is still OK.
6. Guiding pin is worn.

**Related information...**

[Cleaning and maintenance](#), page 228

[As-needed maintenance procedures](#), page 235

[CAR design and function](#), page 42

**As-needed maintenance procedures**

As-needed maintenance procedures are required on the CARs.

**Related information...**

[CAR maintenance](#), page 234

[CAR replacement](#), page 235

[CAR disposal](#), page 238

**CAR replacement**

Defective CARs are located either in the maintenance lane or charge lane or on the track. If a CAR is no longer functional or if it has a deep-discharged or hot lithium battery, the CAR must be replaced.

**Related information...**

[As-needed maintenance procedures](#), page 235

[Remove a CAR without a sample](#), page 236

[Remove a CAR with a sample](#), page 236

[Replace the front underseal of a CAR](#), page 237

### ***Remove a CAR without a sample***

**Prerequisite**

- A defective CAR is in the maintenance lane, in the charge lane, or on the track.
- A new CAR is available.

Perform this as-needed procedure to remove a CAR that does not carry a sample.

**NOTE:** Send the defective CAR to an Abbott Laboratories representative or an authorized service representative for repair and inspection.

1. Open the track hood.
2. Remove the defective CAR from the track.
3. Turn off the defective CAR by using the on/off switch.
4. Turn on the new CAR by using the on/off switch.
5. Place the new CAR back on the track in front of an active lane element.
6. Close the track hood.

### **Related information...**

[CAR replacement](#), page 235

[Open and close the track hoods](#), page 112

### ***Remove a CAR with a sample***

**Prerequisite**

- A defective CAR and its sample are on the track.
- A new CAR is available.

Perform this as-needed procedure to remove a CAR that carries a sample.

**NOTE:** Send the defective CAR to an Abbott Laboratories representative or an authorized service representative for repair and inspection.

1. Open the track hood.
2. Remove the defective CAR with the sample from the track.
3. Remove the sample from the defective CAR.
4. Turn off the defective CAR by using the on/off switch.
5. Turn on the new CAR by using the on/off switch.
6. Place the new CAR back on the track in front of an active lane element.
7. Close the track hood.
8. On the Track Sample Manager (TSM), remove the sample from the database.
9. Load the sample into the appropriate input area.

**Related information...**

[CAR replacement](#), page 235

[Open and close the track hoods](#), page 112

[Remove a sample \(TSM\)](#), page 151

**Replace the front underseal of a CAR**

Perform this as-needed procedure to replace the front underseal of a CAR.

The front underseal of the CAR requires replacement if the permanent magnet on the bottom side is visible, the position of the CAR is skewed, or the guiding pin is worn.

1. Open the track hood.
2. Remove the CAR from the track and turn it off.
3. Push the front underseal [1] forward and remove it.

**Figure 44: Front underseal**



4. Insert the new front underseal [1] and push it back until it engages.
5. Turn on the CAR and place it back on the track in front of an active lane element.
6. Close the track hood.

**Related information...**

[CAR replacement](#), page 235

[Open and close the track hoods](#), page 112

**CAR disposal**

The CARs may only be disposed of by an Abbott Laboratories representative or an authorized service representative.



**CAUTION: Risk of environmental damage.** Environmental damage may occur due to incorrect disposal of the CARs. Dispose of the CARs in accordance with local, state, and national regulations. Do not dispose of the CARs in domestic waste. Follow the disposal instructions.

**Related information...**

[As-needed maintenance procedures](#), page 235

[CAR safety](#), page 220

## Input/Output Module cleaning

Before cleaning procedures are performed, the module must be transitioned to the required module status.

Cleaning procedures should be performed only when all samples have completed processing on the module to prevent contamination of samples.

**NOTE:** Do not immerse RackPorts with a radio-frequency identification (RFID) tag in water. Do not use a dishwasher to clean RackPorts with an RFID tag.

**Related information...**

[Cleaning and maintenance](#), page 228

[Weekly cleaning procedures](#), page 238

[As-needed cleaning procedures](#), page 239

### Weekly cleaning procedures

Weekly cleaning procedures are required on the Input/Output Module.

**Related information...**

[Input/Output Module cleaning](#), page 238

[Clean the monitor](#), page 238

[Clean the module covers](#), page 239

### 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 238

[Open and close the front and rear module covers](#), page 187

**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 238

[Open and close the front and rear module covers](#), page 187

**As-needed cleaning procedures**

As-needed cleaning procedures are required on the Input/Output Module.

**Related information...**

[Input/Output Module cleaning](#), page 238

[Clean the robot gripper](#), page 240

[Clean the RackPorts](#), page 240

[Clean the FlexRacks](#), page 241

*Clean the drawers*, page 242

*Clean the AccessPoint*, page 242

*Clean the bar code reader*, page 243

### 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 239

*Open and close the front and rear module covers*, page 187

### Clean the RackPorts

- Required materials**
- Laboratory-grade surface disinfectant
  - Lint-free cloth

**Required module status** Offline

Perform this as-needed procedure to clean the RackPorts.

1. To open the drawer, press the drawer push button or tap the **Open/Close** button on the touchscreen user interface.



**CAUTION:** A minimum clearance between the module and the operator is required to avoid injury when opening the drawer.

**IMPORTANT:** Do not pull on the drawer handle to open the drawer. Pulling on the drawer handle causes an error status for the drawer and does not fully open the drawer.

2. Unload the samples from the FlexRacks.
3. Remove the FlexRacks from the RackPort.
4. Remove the RackPort from the drawer and place it on a flat surface.



**NOTE:** Each RackPort is configured for its specific drawer. Observe the drawer of each RackPort to ensure reinstallation in the same drawer.

5. Dampen a lint-free cloth with a surface disinfectant.
6. Carefully wipe the RackPort to remove any dust.
7. Reinstall the RackPort in the drawer.
8. Return the FlexRacks to the RackPort.
9. Reload the samples into the FlexRacks.
10. To close the drawer, press the drawer push button or tap the **Open/Close** button on the touchscreen user interface.
11. Repeat steps 1 (page 240) through 10 (page 241) for each drawer.

#### Related information...

*As-needed cleaning procedures*, page 239

### Clean the FlexRacks

#### Required materials

- Laboratory-grade surface disinfectant
- Lint-free cloth

#### Required module status

Offline

Perform this as-needed procedure to clean the FlexRacks.

1. To open the drawer, press the drawer push button or tap the **Open/Close** button on the touchscreen user interface.



**CAUTION:** A minimum clearance between the module and the operator is required to avoid injury when opening the drawer.

**IMPORTANT:** Do not pull on the drawer handle to open the drawer. Pulling on the drawer handle causes an error status for the drawer and does not fully open the drawer.

2. Unload the samples from the FlexRacks.
3. Remove the FlexRacks from the RackPort.
4. Dampen a lint-free cloth with a surface disinfectant.
5. Carefully wipe each FlexRack to remove any dust.
6. Return the FlexRacks to the RackPort.
7. Reload the samples for the input area into the FlexRacks.
8. To close the drawer, press the drawer push button or tap the **Open/Close** button on the touchscreen user interface.
9. Repeat steps 1 (page 241) through 8 (page 241) for each drawer.

**Related information...**

[As-needed cleaning procedures](#), page 239

**Clean the drawers**

- 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 drawers.

1. To open the drawer, press the drawer push button or tap the **Open/Close** button on the touchscreen user interface.



**CAUTION:** A minimum clearance between the module and the operator is required to avoid injury when opening the drawer.

**IMPORTANT:** Do not pull on the drawer handle to open the drawer. Pulling on the drawer handle causes an error status for the drawer and does not fully open the drawer.

2. Unload the samples from the FlexRacks.
3. Remove the RackPort from the drawer and place it on a flat surface.  
**NOTE:** Each RackPort is configured for its specific drawer. Observe the drawer of each RackPort to ensure reinstallation in the same drawer.
4. Vacuum the drawer.
5. Dampen a lint-free cloth with a surface disinfectant.
6. Carefully wipe the drawer to remove any dust.
7. Reinstall the RackPort in the drawer.
8. Reload the samples for the input area into the FlexRacks.
9. To close the drawer, press the drawer push button or tap the **Open/Close** button on the touchscreen user interface.
10. Repeat steps 1 (page 242) through 9 (page 242) for each drawer.

**Related information...**

[As-needed cleaning procedures](#), page 239

**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 239

*Open and close the front and rear module covers*, page 187

**Clean the bar code reader**

**Required materials**

- Gentle, antistatic glass cleaner
- Lint-free cloth

**Required module status** Offline

Perform this as-needed procedure to clean the bar code reader.

1. Open the module cover.
2. Dampen a lint-free cloth with a gentle, antistatic glass cleaner.
3. Carefully wipe each bar code reader to remove any dust.
4. Ensure that the orientation of each bar code reader is not changed so that no errors occur when the bar code is read.
5. Close the module cover.

**Related information...**

*As-needed cleaning procedures*, page 239

*Open and close the front and rear module covers*, page 187

## Input/Output Module maintenance

Before maintenance procedures are performed, the module must be transitioned to the required module status.

Maintenance procedures should be performed only when all samples have completed processing on the module to prevent contamination of samples.

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

Check	Activity	Interval
Inspect the module for dust.	Carefully remove any dust as needed. If necessary, perform the following procedures: <ul style="list-style-type: none"> <li>• <a href="#">Clean the monitor</a>, page 238</li> <li>• <a href="#">Clean the bar code reader</a>, page 243</li> <li>• <a href="#">Clean the AccessPoint</a>, page 242</li> <li>• <a href="#">Clean the robot gripper</a>, page 240</li> <li>• <a href="#">Clean the RackPorts</a>, page 240</li> <li>• <a href="#">Clean the drawers</a>, page 242</li> </ul>	Daily
Verify that there are no observed problems.	Resolve any observed problems as needed. See <a href="#">Input/Output Module observed problems</a> , page 380 and <a href="#">Track Sample Manager observed problems</a> , page 377.	Daily
Inspect the AccessPoints for contamination.	Perform <a href="#">Clean the AccessPoint</a> , page 242 if necessary.	Daily
Verify that the robot gripper fingers are not worn, damaged, or dirty.	Perform <a href="#">Clean the robot gripper</a> , page 240 or <a href="#">Replace the robot gripper fingers</a> , page 245 if necessary.	Daily
Verify that the FlexRacks are clean and undamaged.	Perform <a href="#">Clean the FlexRacks</a> , page 241 or <a href="#">Replace a FlexRack</a> , page 247 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 <a href="#">Open and close the front and rear module covers</a> , page 187 to close the module covers if necessary.	Daily

**Related information...**

[Cleaning and maintenance](#), page 228

[As-needed maintenance procedures](#), page 244

**As-needed maintenance procedures**

As-needed maintenance procedures are required on the Input/Output Module.

**Related information...**

[Input/Output Module maintenance](#), page 243

[Replace the robot gripper fingers](#), page 245

[Replace a FlexRack](#), page 247

## 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 gripper 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.

1. Open the module cover.
2. Move the robot to an accessible position.
3. Loosen both screws [2] on the robot gripper finger [1] with the Tx6 Torx screwdriver.

Figure 45: Robot gripper fingers and screws



4. Remove the screws [2].
5. Remove the robot gripper finger [1] from the bracket.
6. Insert a new robot gripper finger [1] into the bracket so that the robot gripper finger tooth points inward.
7. Insert new screws [2] into the new robot gripper finger [1].
8. Tighten the screws [2] with the Tx6 Torx screwdriver.
9. Close the module cover.
10. Power on the module.

**Related information...**

*As-needed maintenance procedures*, page 244

*Open and close the front and rear module covers*, page 187

*Power on the module*, page 191

## Replace a FlexRack

**Required module status**      Online

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



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



**CAUTION: Do not reach into drawers.** Injury can occur when accessing the module interior while the module is powered on. Do not access the drawers while they are opening or closing. Only load the drawers when they are fully open. The drawer push button blinks when it is unsafe to access the drawer. **Never reach into the module through the drawers.**

1. To open the drawer, press the drawer push button or tap the **Open/Close** button on the touchscreen user interface.

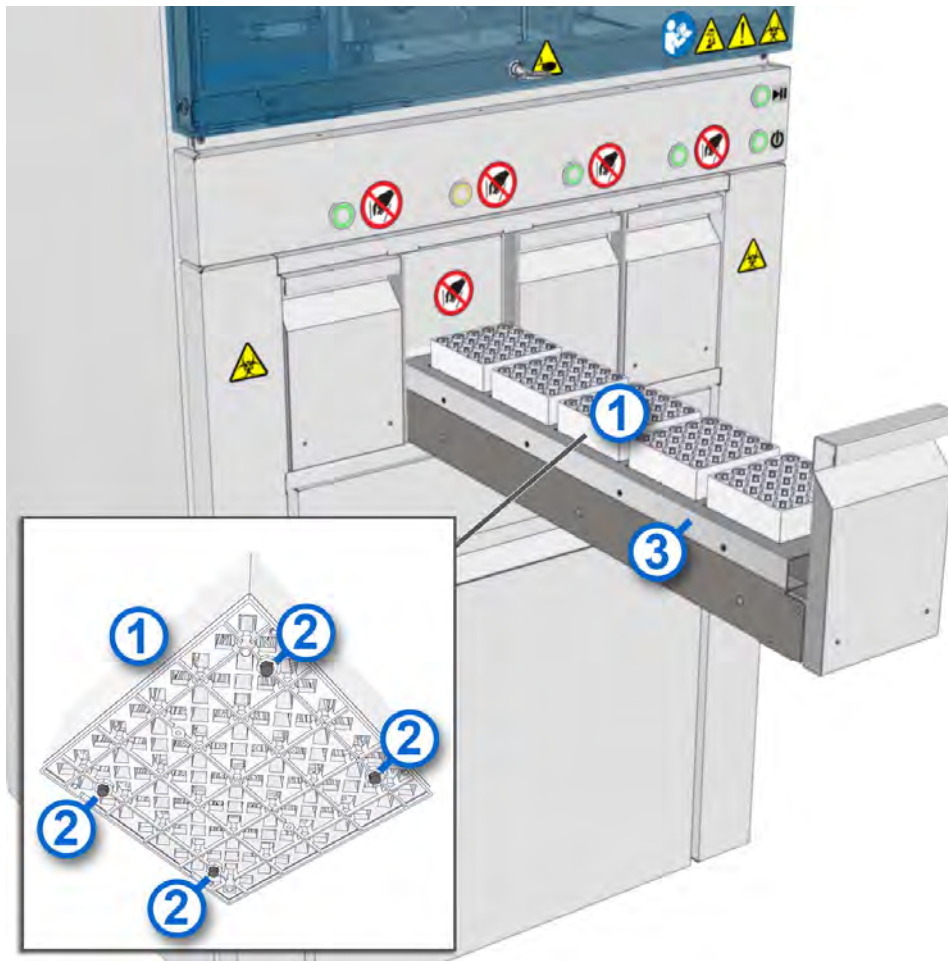


**CAUTION:** A minimum clearance between the module and the operator is required to avoid injury when opening the drawer.

**IMPORTANT:** Do not pull on the drawer handle to open the drawer. Pulling on the drawer handle causes an error status for the drawer and does not fully open the drawer.

2. Unload the samples from the damaged FlexRack.
3. Load the samples into a new FlexRack [1].

Figure 46: FlexRack with magnets



4. Remove the damaged FlexRack by pulling it up from the RackPort [3].
5. Insert the new FlexRack [1] on the RackPort [3].

**NOTE:** Magnets [2] are used to secure the new FlexRack [1] on the RackPort [3].

6. To close the drawer, press the drawer push button or tap the **Open/Close** button on the touchscreen user interface.

**Related information...**

*As-needed maintenance procedures*, page 244

*Load samples into FlexRacks*, page 195

*Unload samples from FlexRacks*, page 197



## Introduction

Problems with the GLP systems Track 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 only be performed by an Abbott Laboratories representative or an authorized service representative.

### **Related information...**

*Message codes*, page 250

*Observed problems*, page 370

*Start the GLP systems Track*, page 104

## Message codes

Message codes are displayed on the Track Sample Manager, Track Workflow Manager, and Input/Output Module user interfaces 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 249

*Message code screen (IOM)*, page 250

*Module message codes*, page 251

*Track Sample Manager message codes*, page 286

## Message code screen (IOM)

The Message code screen (IOM) displays the following screen elements.

**Figure 47: 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 250

[Acknowledge a message code](#), page 251

**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 \(IOM\)](#), page 250

**Module message codes**

Module-specific message codes are classified into several categories:

- Communication and software update message codes (100-109, 9002-9004)
- Track element message codes (700-800, 10003-15015)
- Module component general message codes (20105-20151, 20900-20913, 23100, 25150-27000)
- Module component track element message codes (20200-20300)
- Module component robot PICCOLA message codes (21000-21060)
- Module component lock message codes (22200-22202)
- Module component display message codes (23000-23017)
- Module component drawer message codes (25000-25107)

**Related information...**

[Message codes](#), page 250

[100](#), page 254

[101](#), page 255

[105](#), page 255

[106](#), page 255

[107](#), page 255

[108](#), page 256

*109*, page 256  
*700*, page 256  
*750*, page 256  
*751*, page 257  
*800*, page 257  
*9002*, page 257  
*9003*, page 257  
*9004*, page 258  
*10003*, page 258  
*10050*, page 258  
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*15010*, page 259  
*15015*, page 259  
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*20151*, page 260  
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*20910*, page 267

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*20912*, page 267  
*20913*, page 267  
*21000*, page 268  
*21001*, page 268  
*21002*, page 268  
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*21004*, page 269  
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- [25018](#), page 284
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- [25028](#), page 284
- [25032](#), page 284
- [25104](#), page 285
- [25105](#), page 285
- [25106](#), page 285
- [25107](#), page 285
- [25150](#), page 286
- [27000](#), page 286

**Message code: 100**

System error.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>• Ignore error message.</li> </ul>

**Related information...**[Module message codes](#), page 251**Message code: 101**

Invalid product code.

Product code invalid or not supported by display.

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**[Module message codes](#), page 251**Message code: 105**

Module Controller is out of memory.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>• Error cannot be repaired. Stop module and call service.</li> </ul>

**Related information...**[Module message codes](#), page 251**Message code: 106**

Invalid data structure.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>• Ignore error message.</li> <li>• Error cannot be repaired. Stop module and call service.</li> <li>• Switch module to offline status.</li> </ul>

**Related information...**[Module message codes](#), page 251**Message code: 107**

Unknown message type received.

Details	Solutions
Not applicable.	Please select one of the offered solutions below.

Details	Solutions
	<ul style="list-style-type: none"> <li>Ignore error message.</li> <li>Switch module to offline status.</li> <li>Error cannot be repaired. Stop module and call service.</li> </ul>

**Related information...**

*Module message codes*, page 251

**Message code: 108**

Data protocol version is not matching.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>Ignore error message.</li> <li>Switch module to offline status.</li> <li>Error cannot be repaired. Stop module and call service.</li> </ul>

**Related information...**

*Module message codes*, page 251

**Message code: 109**

Checksum error.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>Ignore error message.</li> <li>Error cannot be repaired. Stop module and call service.</li> <li>Switch module to offline status.</li> </ul>

**Related information...**

*Module message codes*, page 251

**Message code: 700**

Number of NFC reading failures exceeds threshold.

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

**Related information...**

*Module message codes*, page 251

**Message code: 750**

Number of measurement failures exceeds threshold.



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

**Related information...**

*Module message codes*, page 251

**Message code: 751**

Scale needs calibration.

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

**Related information...**

*Module message codes*, page 251

**Message code: 800**

Number of actuator failures exceeds threshold.

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

**Related information...**

*Module message codes*, page 251

**Message code: 9002**

Controller offline.

The controller is currently offline.

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Module message codes*, page 251

**Message code: 9003**

Controller identification verification failed.

The controller could not be identified.

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Module message codes*, page 251

**Message code: 9004**

Controller configuration failed.  
The controller could not be configured.

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Module message codes*, page 251

**Message code: 10003**

CAR did not leave track element within the allotted time.

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Locate the CAR and remove it from the track.</li> <li>2. Toggle the on/off switch at the rear of the CAR and place the CAR back on the track in front of an active lane element for further processing.</li> <li>3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Module message codes*, page 251

**Message code: 10050**

CAR not charging.

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Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Locate the CAR and remove it from the track.</li> <li>2. Toggle the on/off switch at the rear of the CAR and place the CAR back on the track in front of an active lane element for further processing.</li> <li>3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Module message codes*, page 251

**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...**

*Module message codes*, page 251

**Message code: 15010**

AccessPoint motor driver / hardware error.

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Module message codes*, page 251

**Message code: 15015**

AccessPoint might require reconfiguration.

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Module message codes, page 251*

**Message code: 20105**

No solution file found.

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Module message codes, page 251*

**Message code: 20150**

Invalid robot operation requested.

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Module message codes, page 251*

**Message code: 20151**

Invalid robot (0) target position.

0 = Robot type

Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>• Reset and initialize the component again.</li> </ul>

**Related information...**

*Module message codes, page 251*

**Message code: 20200**

AccessPoint connection problem.

Details	Solutions
AccessPoint heartbeat lost.	Please select one of the offered solutions below.

Details	Solutions
	<ul style="list-style-type: none"> <li>Reset and initialize the component again.</li> <li>Error cannot be repaired. Stop module and call service.</li> <li>Disable component until next restart.</li> </ul>

**Related information...**

[Module message codes](#), page 251

**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. <ul style="list-style-type: none"> <li>The CAR (0) is gone or has been removed.</li> <li>Reset and initialize the component again.</li> <li>Error cannot be repaired. Stop module and call service.</li> <li>Disable component until next restart.</li> </ul>

**Related information...**

[Module message codes](#), page 251

**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.	<ol style="list-style-type: none"> <li>Correct the error by following the instructions on the touchscreen user interface.</li> <li>If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

[Module message codes](#), page 251

**Message code: 20203**

AccessPoint hardware failure.

Details	Solutions
The AccessPoint has reported a hardware problem.	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>Reset and initialize the component again.</li> <li>Error cannot be repaired. Stop module and call service.</li> <li>Disable component until next restart.</li> </ul>

**Related information...**

[Module message codes](#), page 251

**Message code: 20204**

The AccessPoint restarted unexpectedly.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"><li>• Please check if module operation is safe and confirm.</li><li>• Reset and initialize the component again.</li><li>• Error cannot be repaired. Stop module and call service.</li><li>• Disable component until next restart.</li></ul>

**Related information...**

[Module message codes](#), page 251

**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. <ul style="list-style-type: none"><li>• Reset and initialize the component again.</li><li>• Error cannot be repaired. Stop module and call service.</li><li>• Disable component until next restart.</li></ul>

**Related information...**

[Module message codes](#), page 251

**Message code: 20206**

RFID read problems.

Details	Solutions
The AccessPoint reported RFID read problems.	Please select one of the offered solutions below. <ul style="list-style-type: none"><li>• Reset and initialize the component again.</li><li>• Error cannot be repaired. Stop module and call service.</li><li>• Disable component until next restart.</li></ul>

**Related information...**

[Module message codes](#), page 251

**Message code: 20207**

CARs could not be caught.

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Details	Solutions
The AccessPoint was not able to catch some CARs. Check the catch position.	<p>Please select one of the offered solutions below.</p> <ul style="list-style-type: none"> <li>Reset and initialize the component again.</li> <li>Error cannot be repaired. Stop module and call service.</li> <li>Disable component until next restart.</li> </ul>

**Related information...**

*Module message codes, page 251*

**Message code: 20209**

AccessPoint catch position too tight.

Details	Solutions
The AccessPoint reports that the catch position is too tight. Please adjust it.	<p>Please select one of the offered solutions below.</p> <ul style="list-style-type: none"> <li>Reset and initialize the component again.</li> <li>Error cannot be repaired. Stop module and call service.</li> <li>Continue operation and ignore the error until the next restart.</li> <li>Disable component until next restart.</li> </ul>

**Related information...**

*Module message codes, page 251*

**Message code: 20210**

The AccessPoint lost too many CARs.

Details	Solutions
Check the AccessPoint settings or replace the AccessPoint.	<p>Please select one of the offered solutions below.</p> <ul style="list-style-type: none"> <li>Reset and initialize the component again.</li> <li>Disable component until next restart.</li> <li>Error cannot be repaired. Stop module and call service.</li> </ul>

**Related information...**

*Module message codes, page 251*

**Message code: 20211**

AccessPoint did not respond.

Details	Solutions
The AccessPoint did not respond to a CAR ID request.	<p>Please select one of the offered solutions below.</p> <ul style="list-style-type: none"> <li>Reset and initialize the component again.</li> <li>Error cannot be repaired. Stop module and call service.</li> <li>Disable component until next restart.</li> </ul>

**Related information...**

*Module message codes, page 251*

**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. <ul style="list-style-type: none"> <li>The tube was removed from gripper by pressing the grippers release button.</li> </ul>

**Related information...**

*Module message codes, page 251*

**Message code: 20900**

Area configuration error.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>Ignore error message.</li> </ul>

**Related information...**

*Module message codes, page 251*

**Message code: 20901**

Teach positions not valid.

Details	Solutions
Robot (0).  0 = Robot type	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>Check the teach-in positions.</li> </ul>

**Related information...**

*Module message codes, page 251*

**Message code: 20902**

Invalid reference positions.

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>Correct the error by following the instructions on the touchscreen user interface.</li> <li>If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>



Section 10

**Related information...**

[Module message codes](#), page 251

**Message code: 20903**

Area configuration invalidated due to RackPort change.

Details	Solutions
New RackPort ID: (0).  0 = RackPort ID	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>• Keep Areas.</li> <li>• Delete the Areas of the affected Component.</li> <li>• Ignore error message.</li> </ul>

**Related information...**

[Module message codes](#), page 251

**Message code: 20904**

RackPort type configuration does not match RackPort type used.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>• Ignore error message.</li> </ul>

**Related information...**

[Module message codes](#), page 251

**Message code: 20905**

RackPort type undefined. No RackPort type programmed in RFID.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>• Show dialog to select RackPortType for Component.</li> <li>• Ignore error message.</li> </ul>

**Related information...**

[Module message codes](#), page 251

**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. <ul style="list-style-type: none"> <li>• Ignore error message.</li> </ul>

Details	Solutions
Lowest possible gripHeight for this module is (0). Chosen gripHeight is (1).  0 = Lowest possible grip height 1 = Selected grip height	

**Related information...**

*Module message codes*, page 251

**Message code: 20907**

The area configuration contains at least two areas with the same number.

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Module message codes*, page 251

**Message code: 20908**

Area configuration contains overlapping areas.

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Module message codes*, page 251

**Message code: 20909**

Area type is not specified for the area.

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**[Module message codes](#), page 251**Message code: 20910**

Configuration data checksum error.

The checksum of the configuration data is invalid.

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**[Module message codes](#), page 251**Message code: 20911**

Unexpected position detected.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>• Check the orientation of the robot axes.</li> </ul>

**Related information...**[Module message codes](#), page 251**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. <ul style="list-style-type: none"> <li>• Component was updated. Please reinitialize.</li> <li>• Error cannot be repaired. Stop module and call service.</li> </ul>

**Related information...**[Module message codes](#), page 251**Message code: 20913**

Missing RackPort type data.

Details	Solutions
Missing RackPort type data for RackPort ID (0).  0 = RackPort ID number	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>• Error cannot be repaired. Stop module and call service.</li> </ul>

**Related information...**

[Module message codes](#), page 251

**Message code: 21000**

Robot initialization error.

Details	Solutions
Axis: (0). 0 = Robot axis	Please select one of the offered solutions below. <ul style="list-style-type: none"><li>Reset and initialize the component again.</li></ul>

**Related information...**

[Module message codes](#), page 251

**Message code: 21001**

Robot invalid parameter detected.

Details	Solutions
Parameter: (1). 1 = Parameter name	Please select one of the offered solutions below. <ul style="list-style-type: none"><li>Ignore error message.</li></ul>

**Related information...**

[Module message codes](#), page 251

**Message code: 21002**

Robot invalid position detected.

Details	Solutions
Axis: (0). 0 = Robot axis	Please select one of the offered solutions below. <ul style="list-style-type: none"><li>Remove error status flag from Robot.</li></ul>

**Related information...**

[Module message codes](#), page 251

**Message code: 21003**

Invalid robot PICCOLA controller CAN ID.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"><li>Change robot status to defect.</li></ul>

**Related information...**

[Module message codes](#), page 251

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**Message code: 21004**

Robot crash detected.

Details	Solutions
Axis: (0). 0 = Robot axis	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>Reset and initialize the component again.</li> <li>Change robot status to defect.</li> </ul>

**Related information...**

[Module message codes](#), page 251

**Message code: 21005**

Robot hardware error.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>Remove error status flag from Robot.</li> </ul>

**Related information...**

[Module message codes](#), page 251

**Message code: 21006**

Robot is unresponsive.

Details	Solutions
Axis: (0). 0 = Robot axis	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>Reset and initialize the component again.</li> </ul>

**Related information...**

[Module message codes](#), page 251

**Message code: 21008**

Missing sensor signal at robot.

Details	Solutions
Axis: (0). 0 = Robot axis	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>Reset and initialize the component again.</li> </ul>

**Related information...**

[Module message codes](#), page 251

**Message code: 21009**

Invalid robot PICCOLA controller hardware version.

Hardware: (1)

1 = PICCOLA controller hardware version

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Module message codes*, page 251

**Message code: 21010**

Unexpected obstacles detected.

Axis: (0)

0 = Robot axis

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Module message codes*, page 251

**Message code: 21011**

No sample is detected at the gripper.

Details	Solutions
Not applicable.	<p>Please select one of the offered solutions below.</p> <ul style="list-style-type: none"> <li>• Reset and initialize component.</li> <li>• Confirm remaining sample(s) at position has been removed.</li> </ul>

**Related information...**

*Module message codes*, page 251

**Message code: 21012**

Sample is detected at the gripper.

Details	Solutions
Please also check the surrounding processing area to ensure no potential contamination.	<p>Please select one of the offered solutions below.</p> <ul style="list-style-type: none"> <li>• The tube was removed from gripper by pressing the grippers release button.</li> </ul>

**Related information...**[Module message codes](#), page 251**Message code: 21013**

Unknown robot command.

Details	Solutions
Command: (1). 1 = Robot command	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>Change robot status to defect.</li> </ul>

**Related information...**[Module message codes](#), page 251**Message code: 21014**

Robot PICCOLA communication error.

Details	Solutions
Program: (1). 1 = Program version	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>Reset and initialize the component again.</li> </ul>

**Related information...**[Module message codes](#), page 251**Message code: 21015**

Hardware CAN ID does not match Software CAN ID.

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>Correct the error by following the instructions on the touchscreen user interface.</li> <li>If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**[Module message codes](#), page 251**Message code: 21016**

Invalid firmware version for PICCOLA controller.

Details	Solutions
Firmware: (1). 1 = Firmware version	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>Change robot status to defect.</li> </ul>

**Related information...**

*Module message codes*, page 251

**Message code: 21017**

Invalid PICCOLA chipset.

Details	Solutions
Chipset: (1). 1 = Chipset number	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>Change robot status to defect.</li> </ul>

**Related information...**

*Module message codes*, page 251

**Message code: 21018**

Invalid PICCOLA extension ID.

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>Correct the error by following the instructions on the touchscreen user interface.</li> <li>If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Module message codes*, page 251

**Message code: 21019**

Robot end position not detected.

Details	Solutions
Axis: (0). 0 = Robot axis	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>Reset and initialize the component again.</li> </ul>

**Related information...**

*Module message codes*, page 251

**Message code: 21021**

The robot has reported the loss of a sample.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>As necessary, remove tube from the gripper. Please confirm that the tube is removed by pressing the gripper release button.</li> </ul>



**Related information...**[Module message codes](#), page 251**Message code: 21023**

Robot axis length out of tolerance.

Details	Solutions
Check the axis length and belt tension. Axis: (0). 0 = Robot axis	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>Change robot status to defect.</li> </ul>

**Related information...**[Module message codes](#), page 251**Message code: 21034**

Robot temperature out of range.

Details	Solutions
Temperature: (1). 1 = Temperature value	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>Change robot status to defect.</li> </ul>

**Related information...**[Module message codes](#), page 251**Message code: 21036**

Robot power error.

Details	Solutions
Status: (1). 1 = Robot status	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>Change robot status to defect.</li> </ul>

**Related information...**[Module message codes](#), page 251**Message code: 21037**

Unexpected gripper operation detected.

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>Correct the error by following the instructions on the touchscreen user interface.</li> <li>If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Module message codes*, page 251

**Message code: 21041**

Sample position check error.

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"><li>1. Correct the error by following the instructions on the touchscreen user interface.</li><li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li></ol>

**Related information...**

*Module message codes*, page 251

**Message code: 21045**

Gripper touched open tube.

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"><li>1. Correct the error by following the instructions on the touchscreen user interface.</li><li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li></ol>

**Related information...**

*Module message codes*, page 251

**Message code: 21050**

Unknown error (1).

1 = Error code

Details	Solutions
Axis: (0). 0 = Robot axis	Please select one of the offered solutions below. <ul style="list-style-type: none"><li>• Reset and initialize the component again.</li></ul>

**Related information...**

*Module message codes*, page 251

**Message code: 21060**

Barcode reading error.

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Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>Remove error status flag from Robot.</li> </ul>

**Related information...**

*Module message codes*, page 251

**Message code: 22200**

Locking failed.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>Reset and initialize the component again.</li> <li>Error cannot be repaired. Stop module and call service.</li> </ul>

**Related information...**

*Module message codes*, page 251

**Message code: 22201**

Unlocking failed.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>Reset and initialize the component again.</li> <li>Error cannot be repaired. Stop module and call service.</li> </ul>

**Related information...**

*Module message codes*, page 251

**Message code: 22202**

Lock not responding.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>Reset and initialize the component again.</li> <li>Error cannot be repaired. Stop module and call service.</li> </ul>

**Related information...**

*Module message codes*, page 251

**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. <ul style="list-style-type: none"><li>• Error cannot be repaired. Stop module and call service.</li></ul>

**Related information...**

*Module message codes*, page 251

**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. <ul style="list-style-type: none"><li>• Error cannot be repaired. Stop module and call service.</li></ul>

**Related information...**

*Module message codes*, page 251

**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. <ul style="list-style-type: none"><li>• Error cannot be repaired. Stop module and call service.</li></ul>

**Related information...**

*Module message codes*, page 251

**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. <ul style="list-style-type: none"><li>• Error cannot be repaired. Stop module and call service.</li></ul>

**Related information...**

*Module message codes*, page 251

**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. <ul style="list-style-type: none"> <li>• Error cannot be repaired. Stop module and call service.</li> </ul>

**Related information...**

*Module message codes*, page 251

**Message code: 23010**

Area configuration error. Invalid area type ID used.

Invalid area type ID (0) used.

0 = Area type ID number

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Module message codes*, page 251

**Message code: 23011**

Area configuration error. Invalid component used.

Invalid Component ID (0) used.

0 = Component ID number

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Module message codes*, page 251

**Message code: 23012**

Area configuration error. Invalid Rack start and/or Rack end position used.

Invalid Rack start and/or Rack end position (0).

0 = Rack position

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Module message codes*, page 251

**Message code: 23013**

Area configuration error. Invalid sample position.  
 Invalid sample start and/or sample end position (0).  
 0 = Sample position

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Module message codes*, page 251

**Message code: 23014**

Area configuration error. Invalid RackPort type ID.  
 Invalid RackPort type ID (0).  
 0 = RackPort type ID number

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Module message codes*, page 251

**Message code: 23015**

Area configuration error.  
 Invalid area ID (0).  
 0 = Area ID number

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Module message codes*, page 251

**Message code: 23016**

Area configuration error. Invalid rack type used.  
Invalid rack type used on RackPort with type ID (0).  
0 = RackPort type ID number

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Module message codes*, page 251

**Message code: 23017**

Area configuration error. Conflicting areas information.

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Module message codes*, page 251

**Message code: 23100**

Could not send removal message for drawer (0), area (1) to TSM.

0 = Drawer number

1 = Area number

Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>Ignore error message.</li> </ul>

**Related information...**

*Module message codes*, page 251

**Message code: 25000**

Error during initialization of drawer (0).

0 = Drawer number

Details	Solutions
Originated from error (1). 1 = Drawer hardware error code	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>Reset and initialize the component again.</li> <li>Disable the component.</li> </ul>

**Related information...**

*Module message codes*, page 251

**Message code: 25001**

Drawer (0) is not available.

Drawer status (1) at position (2).

0 = Drawer number

1 = Drawer status

2 = Drawer position

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>Correct the error by following the instructions on the touchscreen user interface.</li> <li>If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Module message codes*, page 251

**Message code: 25002**

Hardware error with drawer (0).

0 = Drawer number

Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>Reset and initialize the component again.</li> <li>Disable the component.</li> </ul>



**Related information...**[Module message codes, page 251](#)**Message code: 25003**

Drawer (0) jammed.

0 = Drawer number

Details	Solutions
Drawer status (1) at position (2). 1 = Drawer status 2 = Drawer position	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>Reset and initialize the component again.</li> <li>Disable the component.</li> <li>Ignore error message.</li> </ul>

**Related information...**[Module message codes, page 251](#)**Message code: 25005**

Drawer (0) movement interrupted.

Drawer status (1) at position (2).

0 = Drawer number

1 = Drawer status

2 = Drawer position

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...**[Module message codes, page 251](#)**Message code: 25006**

Drawer (0) forcefully opened.

Drawer status (1) at position (2).

0 = Drawer number

1 = Drawer status

2 = Drawer position

Probable cause	Corrective action
An error has occurred.	1. Correct the error by following the instructions on the touchscreen user interface.

Probable cause	Corrective action
	2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.

**Related information...**

*Module message codes*, page 251

**Message code: 25009**

Intervention by user has been detected with drawer (0).

Drawer status (1) at position (2).

0 = Drawer number

1 = Drawer status

2 = Drawer position

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Module message codes*, page 251

**Message code: 25010**

Execution of drawer command failed.

Details	Solutions
Not applicable.	<p>Please select one of the offered solutions below.</p> <ul style="list-style-type: none"> <li>• Reset and initialize the component again.</li> <li>• Use Drawer in manual mode.</li> <li>• Disable the component.</li> </ul>

**Related information...**

*Module message codes*, page 251

**Message code: 25014**

Timeout error for drawer (0).

0 = Drawer number

Details	Solutions
Not applicable.	<p>Please select one of the offered solutions below.</p> <ul style="list-style-type: none"> <li>• Reset and initialize the component again.</li> <li>• Use Drawer in manual mode.</li> </ul>

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Details	Solutions
	<ul style="list-style-type: none"> <li>• Disable the component.</li> </ul>

**Related information...**

[Module message codes](#), page 251

**Message code: 25015**

Drawer (0) initialization timeout.

0 = Drawer number

Details	Solutions
Drawer status (1) at position (2). 1 = Drawer status 2 = Drawer position	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>• Reset and initialize the component again.</li> <li>• Use Drawer in manual mode.</li> <li>• Disable the component.</li> </ul>

**Related information...**

[Module message codes](#), page 251

**Message code: 25016**

Drawer (0) home sensor error.

0 = Drawer number

Details	Solutions
Drawer status (1) at position (2). 1 = Drawer status 2 = Drawer position	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>• Disable the component.</li> <li>• Ignore error message.</li> </ul>

**Related information...**

[Module message codes](#), page 251

**Message code: 25017**

Drawer (0) motor encoder error.

0 = Drawer number

Details	Solutions
Drawer status (1) at position (2). 1 = Drawer status 2 = Drawer position	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>• Use Drawer in manual mode.</li> <li>• Disable the component.</li> <li>• Ignore error message.</li> </ul>

**Related information...**

[Module message codes](#), page 251

**Message code: 25018**

Drawer (0) full. Available position not found.

0 = Drawer number

Details	Solutions
Drawer status (1) at position (2). 1 = Drawer status 2 = Drawer position	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>• Use Drawer in manual mode.</li> <li>• Disable the component.</li> <li>• Ignore error message.</li> </ul>

**Related information...**

*Module message codes*, page 251

**Message code: 25019**

Drawer (0) motor current error.

0 = Drawer number

Details	Solutions
Drawer status (1) at position (2). 1 = Drawer status 2 = Drawer position	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>• Use Drawer in manual mode.</li> <li>• Disable the component.</li> <li>• Ignore error message.</li> </ul>

**Related information...**

*Module message codes*, page 251

**Message code: 25028**

Drawer (0) incorrect motor wiring.

0 = Drawer number

Details	Solutions
Drawer status (1) at position (2). 1 = Drawer status 2 = Drawer position	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>• Use Drawer in manual mode.</li> <li>• Disable the component.</li> <li>• Ignore error message.</li> </ul>

**Related information...**

*Module message codes*, page 251

**Message code: 25032**

RackPort type of drawer (0) invalid.

0 = Drawer number

Section 10

Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>• Drawer has no RackPort, use without Rackport.</li> <li>• Show dialog to select RackPort Type for Component.</li> </ul>

**Related information...**

*Module message codes*, page 251

**Message code: 25104**

Drawer RFID reader error.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>• Reset and initialize the component again.</li> </ul>

**Related information...**

*Module message codes*, page 251

**Message code: 25105**

Drawer RFID tag error.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>• Reset and initialize the component again.</li> </ul>

**Related information...**

*Module message codes*, page 251

**Message code: 25106**

Light barrier dark value too high.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>• Disable the component.</li> </ul>

**Related information...**

*Module message codes*, page 251

**Message code: 25107**

Light barrier bright value too low.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>• Disable the component.</li> </ul>

**Related information...**

[Module message codes, page 251](#)

**Message code: 25150**

Lock not configured.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. <ul style="list-style-type: none"> <li>• Error cannot be repaired. Stop module and call service.</li> </ul>

**Related information...**

[Module message codes, page 251](#)

**Message code: 27000**

CAR needs maintenance.

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

[Module message codes, page 251](#)

## Track Sample Manager message codes

The Track Sample Manager (TSM) software itself does not generate error codes. For issues related to TSM, see the TSM message codes and observed problems in this manual. If the issues related to TSM cannot be resolved, contact an Abbott Laboratories representative or an authorized service representative.

**Related information...**

[Message codes, page 250](#)

[Track element message codes, page 287](#)

[Controller interfaces sent by module controllers, page 290](#)

[TSM generated message codes, page 302](#)

[Warning messages of controller interfaces sent by analyzers, page 340](#)

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[Track Sample Manager observed problems, page 377](#)

**Track element message codes**

This section contains track element message codes for the Track Sample Manager.

**Related information...**

[Track Sample Manager message codes](#), page 286

[700](#), page 287

[750](#), page 287

[751](#), page 288

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[10003](#), page 289

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[15004](#), page 290

[15009](#), page 290

**Message code: 700**

Too many NFC read timeouts

Too many NFC read timeouts at track element (0) in segment "(1)".

0 = Track element

1 = Controller name

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

**Related information...**

[Track element message codes](#), page 287

**Message code: 750**

Too many weighing errors

Too many weighing errors at track element (0) in segment "(1)".

0 = Track element

1 = Controller name

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

**Related information...**

[Track element message codes](#), page 287

**Message code: 751**

Scale needs calibration

Calibrate scale (0) in segment "(1)".

0 = Weight

1 = Controller name

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

**Related information...**

*Track element message codes, page 287*

**Message code: 800**

Too many initialization errors

Too many initialization errors at track element (0) in segment "(1)".

0 = Track element

1 = Controller name

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

**Related information...**

*Track element message codes, page 287*

**Message code: 801**

Actuator faults / Positioning error

Positioning times at track element (0) in segment "(1)" in critical range too often.

0 = Track element

1 = Controller name

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

**Related information...**

*Track element message codes, page 287*

**Message code: 9000**

No controller signal

No heartbeat signal at track element (0) in segment controller "(1)".

0 = Track element

1 = Controller name



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

**Related information...**

*Track element message codes, page 287*

**Message code: 9001**

CAN bus offline

CAN bus offline. Controller "(1)" cannot communicate via CAN bus.

1 = Controller name

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

**Related information...**

*Track element message codes, page 287*

**Message code: 10003**

CAR not starting

CAR at track element (0) in segment "(1)" cannot start.

0 = Track element

1 = Controller name

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Locate the CAR and remove it from the track.</li> <li>2. Toggle the on/off switch at the rear of the CAR and place the CAR back on the track in front of an active lane element for further processing.</li> <li>3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Track element message codes, page 287*

**Message code: 10050**

CAR battery not charging

First CAR at track element (0) in segment "(1)" has lost 2% battery charge.

0 = Track element

1 = Controller name

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Locate the CAR and remove it from the track.</li> </ol>

Probable cause	Corrective action
	<ol style="list-style-type: none"> <li>2. Toggle the on/off switch at the rear of the CAR and place the CAR back on the track in front of an active lane element for further processing.</li> <li>3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Track element message codes, page 287*

**Message code: 15004**

Too many CARs stop errors

Too many CARs not stopped at track element (0) in segment "(1)".

0 = Track element

1 = Controller name

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

**Related information...**

*Track element message codes, page 287*

**Message code: 15009**

Too many CARs not identified

Too many CARs not identified at track element (0) in segment "(1)".

0 = Track element

1 = Controller name

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

**Related information...**

*Track element message codes, page 287*

**Controller interfaces sent by module controllers**

This section contains message codes for controller interfaces sent by module controllers.

**Related information...**

*Track Sample Manager message codes, page 286*

*28100, page 291*

*28101, page 292*

*28102, page 292*

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- [28105](#), page 293
- [28108](#), page 293
- [28109](#), page 293
- [28110](#), page 294
- [28111](#), page 294
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**Message code: 28100**

CAR without sample

Sample (1) (barcode "(2)") expected on CAR (0) but not found.

0 = CAR

1 = TSM sample number

2 = Sample barcode

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Search for the sample and locate the last known position to recover the sample.</li> <li>2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*[Controller interfaces sent by module controllers](#), page 290*

**Message code: 28101**

Sample number unknown

Module does not recognize sample (0) (barcode "(1)"). "(1)"

0 = TSM sample number

1 = Sample barcode

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

**Related information...**

*Controller interfaces sent by module controllers*, page 290

**Message code: 28102**

Sample not at expected position

Sample (0) (barcode "(1)") expected in rack "(2)" at position (3) but not found.

0 = TSM sample number

1 = Sample barcode

2 = Rack

3 = Position

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

**Related information...**

*Controller interfaces sent by module controllers*, page 290

**Message code: 28104**

Barcode validation failed

Sample entry: Barcode verification failed for sample (0) (barcode "(1)") at module "(3)". Barcode read: "(2)".

0 = TSM sample number

1 = Sample barcode

2 = Sample barcode

3 = Controller name

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Verify that the placement of the sample bar code is correct and meets requirements.</li> <li>2. Ensure that the bar code reader is functioning.</li> <li>3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

[Controller interfaces sent by module controllers](#), page 290

**Message code: 28105**

Barcode validation failed

Sample exit: Barcode verification failed for sample (0) (barcode "(1)") at module "(3)". Barcode read: "(2)".

0 = TSM sample number

1 = Sample barcode

2 = Sample barcode

3 = Controller name

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Verify that the placement of the sample bar code is correct and meets requirements.</li> <li>2. Ensure that the bar code reader is functioning.</li> <li>3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

[Controller interfaces sent by module controllers](#), page 290

**Message code: 28108**

Unknown sample in module

Unknown sample with barcode "(0)" in module.

0 = Sample barcode

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

**Related information...**

[Controller interfaces sent by module controllers](#), page 290

**Message code: 28109**

Sample destroyed by mistake

Sample with barcode "(2)" found at the position of sample (0) (barcode "(1)"). Sample disposed of to area (3).

0 = TSM sample number

1 = Sample barcode

2 = Sample barcode

3 = Area

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

**Related information...**

*Controller interfaces sent by module controllers*, page 290

**Message code: 28110**

Sample removed from module

Module (2) failed to pick up sample (0) (barcode "(1)"). Sample was removed manually from module.

0 = TSM sample number

1 = Sample barcode

2 = Controller name

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

**Related information...**

*Controller interfaces sent by module controllers*, page 290

**Message code: 28111**

Different sample inventory detected

Sample inventory of module "(0)" and TSM different.

0 = Controller name

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

**Related information...**

*Controller interfaces sent by module controllers*, page 290

**Message code: 28112**

Decapping failed

Decapper "(0)" reported error for sample (1) (barcode "(2)").

0 = Controller name

1 = TSM sample number

2 = Sample barcode

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

**Related information...**

*Controller interfaces sent by module controllers*, page 290

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**Message code: 28113**

Centrifugation failed

Centrifuge "(0)" reported error for sample (1) (barcode "(2)").

0 = Controller name

1 = TSM sample number

2 = Sample barcode

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

**Related information...**

*Controller interfaces sent by module controllers, page 290*

**Message code: 28114**

Analysis failed

Analyzer error (0): Analyzer (1) reported error for sample (2) (barcode "(3)").

0 = Error code

1 = Controller name

2 = TSM sample number

3 = Sample barcode

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Verify that the sample is present.</li> <li>2. Ensure that the module is functioning.</li> <li>3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Controller interfaces sent by module controllers, page 290*

**Message code: 28116**

Aliquoting failed

Failed to create aliquot (2) from primary sample (1) on CAR (0). Error code: (3).

0 = CAR

1 = TSM sample number

2 = TSM sample number

3 = Error code

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Verify that the sample is present.</li> <li>2. Ensure that the module is functioning.</li> </ol>

Probable cause	Corrective action
	<ol style="list-style-type: none"> <li>3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Controller interfaces sent by module controllers*, page 290

**Message code: 28117**

Aliquoting failed

Failed to aliquot primary sample (1) on CAR (0). Error code: (2).

0 = CAR

1 = TSM sample number

2 = Error code

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Verify that the sample is present.</li> <li>2. Ensure that the module is functioning.</li> <li>3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Controller interfaces sent by module controllers*, page 290

**Message code: 28118**

Aliquot labeling failed

Failed to create label for aliquot (2) from parent sample (1) on CAR (0).

0 = CAR

1 = TSM sample number

2 = TSM sample number

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Verify that the sample is present.</li> <li>2. Ensure that the Aliquot Module and printer are functioning.</li> <li>3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Controller interfaces sent by module controllers*, page 290



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**Message code: 28119**

Aliquot tube type not supported

Failed to create aliquot from parent sample (1) on CAR (0). Reason: Tube type (2) not supported.

0 = CAR

1 = TSM sample number

2 = Tube type

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

**Related information...**

[Controller interfaces sent by module controllers](#), page 290

**Message code: 28120**

Consumable supply low

Insufficient consumable supply (0).

0 = Area

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Observe the inventory of required consumables for modules.</li> <li>2. Refill the consumables if necessary.</li> </ol>

**Related information...**

[Controller interfaces sent by module controllers](#), page 290

**Message code: 28122**

Recapping failed

Recapper "(0)" reported error for sample (1) (barcode "(2)").

0 = Controller name

1 = TSM sample number

2 = Sample barcode

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

**Related information...**

[Controller interfaces sent by module controllers](#), page 290

**Message code: 28124**

Decapping failed

Remover "(0)" reported error for sample (1) (barcode "(2)").

0 = Controller name

1 = TSM sample number

2 = Sample barcode

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

**Related information...**

*Controller interfaces sent by module controllers*, page 290

**Message code: 28126**

Label layout for aliquot not loaded

Label layout (2) not loaded for aliquot of parent sample (1) on CAR (0).

0 = CAR

1 = TSM sample number

2 = Aliquot label layout

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

**Related information...**

*Controller interfaces sent by module controllers*, page 290

**Message code: 28127**

Unknown sample in module

Module "(1)" does not recognize sample "(0)".

0 = TSM sample number

1 = Controller name

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

**Related information...**

*Controller interfaces sent by module controllers*, page 290

**Message code: 28128**

Questionable Analysis Result

Analyzer (1) reported suspicious analysis result for sample (2) ("(3)"). Scanned barcode "(0)". Please check.

0 = Sample barcode

1 = Controller name

2 = TSM sample number

3 = Sample barcode

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Probable cause	Corrective action
<ul style="list-style-type: none"> <li>• The AccessPoint released the CAR unexpectedly.</li> <li>• The sample identified at the AccessPoint during aspiration did not match the sample identified before aspiration.</li> <li>• Identification failure occurred for the CAR ID and sample ID.</li> <li>• The AccessPoint reset unexpectedly.</li> <li>• Power loss occurred at the AccessPoint.</li> </ul>	<ol style="list-style-type: none"> <li>1. Locate the sample ID at the AccessPoint.</li> <li>2. Compare the sample ID at the AccessPoint with the sample bar code in the message text (see variable 3).</li> <li>3. If the sample ID at the AccessPoint is the same as the sample bar code in the message text, follow the recovery steps for module error 22600 on the module touchscreen user interface.</li> <li>4. <b>If the sample ID at the AccessPoint is not the same as the sample bar code in the message text, perform the following steps for the sample with the sample bar code in the message text to prevent erroneous results from being reported:</b> <ol style="list-style-type: none"> <li>a. On the Alinity ci-series where the error occurred, delete all the results for the sample by following the steps on the module touchscreen user interface.</li> <li>b. On the middleware and host laboratory information system (LIS), perform the steps needed to prevent the release of results for the sample.  <b>NOTE:</b> Contact the middleware and host LIS vendor for more information. Follow the laboratory guidelines if any results were released for the sample.</li> <li>c. Rerun all the tests ordered for the sample on the middleware and host LIS.</li> <li>d. Reload the sample.</li> </ol> </li> </ol>

**Related information...**

*Controller interfaces sent by module controllers*, page 290

**Message code: 28129**

Barcode validation failed during disposal

Sample disposal: Barcode verification failed for sample (0) (barcode "(1)") at module "(3)". Barcode read: "(2)". Sample remains in "(4)".

0 = TSM sample number

1 = Sample barcode

2 = Sample barcode

3 = Controller name

4 = Controller name

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

**Related information...**

*Controller interfaces sent by module controllers*, page 290

**Message code: 28130**

Potential cross-contamination of sample

Potential cross-contamination of sample (0) with barcode "(1)" at "(3)".

0 = TSM sample number

1 = Sample barcode

3 = Controller name

Probable cause	Corrective action
<ul style="list-style-type: none"> <li>• The AccessPoint released the CAR unexpectedly.</li> <li>• The sample identified at the AccessPoint during aspiration did not match the sample identified before aspiration.</li> <li>• Identification failure occurred for the CAR ID and sample ID.</li> <li>• The AccessPoint reset unexpectedly.</li> <li>• Power loss occurred at the AccessPoint.</li> </ul>	<p><b>NOTE:</b> The Alinity i processing module has no potential for cross-contamination because the module washes the probe between sample aspirations. <b>Perform the following steps only for the Alinity c processing module:</b></p> <ol style="list-style-type: none"> <li>1. Locate the sample IDs of the samples that are present at the local queue of the specified AccessPoint.</li> <li>2. If sample (1) is present at the local queue but is not at the aspiration point, follow the recovery steps for module error 22600 on the module touchscreen user interface.</li> <li>3. <b>If sample (1) is not present at the aspiration point or is not present at the local queue, perform the following steps to prevent erroneous results from being reported:</b> <ol style="list-style-type: none"> <li>a. Cancel the current orders on the host laboratory information system for the specified sample ID.</li> <li>b. <b>Do not release any complete or partial results that were generated for the sample after the error occurred.</b> Follow the laboratory guidelines if any results were released for the potentially contaminated sample.</li> <li>c. Follow the recovery steps on the module touchscreen user interface to release the sample to an error output area.</li> <li>d. Dispose of the sample in accordance with local, state, and national regulations.</li> </ol> </li> </ol>

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**Related information...**

*Controller interfaces sent by module controllers, page 290*

**Message code: 28131**

Duplicate sample number detected  
Sample (1) already at module "(2)". Barcode: "(0)".  
0 = Sample barcode  
1 = TSM sample number  
2 = Controller name

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

**Related information...**

*Controller interfaces sent by module controllers, page 290*

**Message code: 30001**

Tube-type recognition failed  
TAC "(1)" failed to determine the tube type of sample (2) (barcode "(3)"). Mismatch of (0)%.  
0 = Number  
1 = Controller name  
2 = TSM sample number  
3 = Sample barcode

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

**Related information...**

*Controller interfaces sent by module controllers, page 290*

**Message code: 30002**

Failed to save tube image  
TAC LEARN at "(0)" failed for sample (1) (barcode "(2)").  
0 = Controller name  
1 = TSM sample number  
2 = Sample barcode

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

**Related information...**

*Controller interfaces sent by module controllers, page 290*

## TSM generated message codes

This section contains message codes generated by the Track Sample Manager.

### Related information...

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**Message code: 70000**

All other errors

Never sent as message. Instead, it is just used to configure the general error area.

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

**Related information...**

[TSM generated message codes](#), page 302

**Message code: 70001**

No barcode

Module "(0)" reported a sample without a barcode. Default barcode "(2)" assigned to sample (1). "(2)"

0 = Controller name

1 = TSM sample number

2 = Sample barcode

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Verify that the position of the sample bar code is correct.</li> <li>2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

[TSM generated message codes](#), page 302

**Message code: 70002**

No general error area

General error area has not been defined.

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70003**

Unknown controller

Unknown controller connected. ID: (0), connected as (1).

0 = Controller ID

1 = Controller ID

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70004**

Invalid controller product code

Controller (0) connected as (1) reported invalid product code. Expected: (2); reported: (3).

0 = Controller ID

1 = TCP/IP port of segment or module controller

2 = Product code

3 = Product code

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70005**

Invalid element product code

Controller (0) reported invalid product codes. Tuple (element ID, expected product code, reported product code): (1)

0 = Controller name

1 = Element ID, expected product code, reported product code

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

**Related information...***TSM generated message codes*, page 302**Message code: 70006**

Unknown elements

Controller "(0)" reported unknown elements. Tuples (element ID and product code): (1)

0 = Controller name

1 = Element ID, expected product code, reported product code

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

**Related information...***TSM generated message codes*, page 302**Message code: 70007**

Elements not found

Missing elements in init. message of controller "(0)": (1)

0 = Controller name

1 = Element ID

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

**Related information...***TSM generated message codes*, page 302**Message code: 70008**

Controller connected

Controller "(0)" connected.

0 = Controller name

Probable cause	Corrective action
An error has occurred.	Informational message.

**Related information...***TSM generated message codes*, page 302**Message code: 70009**

Routing Engine connected

Routing Engine connected.

Probable cause	Corrective action
An error has occurred.	Informational message.

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70010**

Maximum archive fill level reached  
 Area "(0)" reached maximum fill level of (1)%.  
 0 = Area  
 1 = Number

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70011**

Waste bin full  
 At least one module controller's "(0)" waste bin is full: (1)  
 0 = Controller name  
 1 = Waste area: number

Probable cause	Corrective action
An error has occurred.	Empty the waste bin at the appropriate module.

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70012**

Last waste bin almost full  
 Last waste bin (0) in module controller "(1)" has reached critical fill level: (2)%  
 0 = Waste bin  
 1 = Controller name  
 2 = Number

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70013**

All waste bins full  
 All waste bins in module "(0)" full.  
 0 = Controller name

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70015**

Mandatory error area removed

Following mandatory error areas of module controller "(0)" are removed: (1)

0 = Controller name

1 = Area

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70016**

Optional error area removed

Following optional error areas of module controller "(0)" are removed: (1)

0 = Controller name

1 = Area type

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70017**

Unknown error code

Error not processed. Reason: Error code (0) unknown. (1) argument(s): (2)

0 = Error code

1 = Number

2 = Arguments

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70018**

Unexpected CAR loading

CAR (0) load change detected. Unloaded at (1), loaded at (2).

0 = CAR

1 = Track element

2 = Track element

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70019**

Unexpected CAR unloading

CAR (0) load change detected: Loaded at: (1), unloaded at (2).

0 = CAR

1 = Track element

2 = Track element

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70021**

Area type not supported

Module "(0)" reported invalid area types: (1). Alternative: Assignment area type / AccessPoint type invalid.

0 = Controller name

1 = Area name, area type

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70022**

Area type cannot be changed

Area types of module "(0)" cannot be changed. Reason: Areas not empty. Tuples (area name, old area type and new area type): (1)

0 = Controller name

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1 = Area, old area type and new area type

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70023**

Controller initialization error

Initialization of controller "(0)" has failed with the following errors: (1)

0 = Controller name

1 = Error code

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Reinitialize the module.</li> <li>2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70026**

Invalid barcode length

Reported barcode length "(0)" is outside of valid interval [(1), (2)].

0 = Sample barcode

1 = Minimum barcode length

2 = Maximum barcode length

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Verify that the sample bar code meets requirements.</li> <li>2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70029**

Samples cannot reach error area

Failed to target error area "(1)" for (0) samples with error code (2). Timeout of (3) minutes exceeded. If no samples are on the track, search the target area and remove the samples in the TSM.

- 0 = Number
- 1 = Area
- 2 = Error code
- 3 = Number

Probable cause	Corrective action
An error has occurred.	The error area at the module is empty. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70031**

Message parsing error  
Failed to parse a message from controller "(0)"; see log for more details.  
0 = Controller name

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70032**

Areas added  
Areas (1) added to module "(0)".  
0 = Controller name  
1 = Area

Probable cause	Corrective action
An error has occurred.	Informational message.

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70033**

Areas removed  
Areas (1) removed from module "(0)".  
0 = Controller name  
1 = Area

Probable cause	Corrective action
An error has occurred.	Informational message.



**Related information...***TSM generated message codes*, page 302**Message code: 70034**

Controller ID changing not supported

Controller "(0)" reported ID change to (1) within the same connection. This is not yet supported.

0 = Controller name

1 = Controller name

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>Restart the module.</li> <li>If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...***TSM generated message codes*, page 302**Message code: 70035**

Area type cannot be changed

The area type of module "(0)" cannot be changed. Reason: The following modules are still connected: (1)

0 = Controller name

1 = Controller ID, controller name, status

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

**Related information...***TSM generated message codes*, page 302**Message code: 70036**

Area cannot be removed

Areas (1) of module "(0)" cannot be removed. Reason: Areas still contain samples.

0 = Controller name

1 = Area

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

**Related information...***TSM generated message codes*, page 302**Message code: 70037**

Too many loaded state errors

CAR (0) has reported the wrong loading state (1) time(s) within (2) hour(s).

0 = CAR

1 = Number

2 = Number

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Locate the CAR and remove it from the track for maintenance.</li> <li>2. Contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*TSM generated message codes, page 302*

**Message code: 70038**

Unexpected CAR on maintenance lane

A switch has misrouted CAR (0) to the maintenance lane.

0 = CAR

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Remove the CAR from the maintenance lane and place it back on the track in front of an active lane element for further processing.</li> <li>2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*TSM generated message codes, page 302*

**Message code: 70039**

CAR requires maintenance

CAR (0) requires maintenance and is being routed to maintenance lane (1).

0 = CAR

1 = Maintenance point ID

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Remove the CAR from the maintenance lane.</li> <li>2. Contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*TSM generated message codes, page 302*

**Message code: 70040**

Failed to send RE message

Failed to send message to RE. Reason: (0)

0 = Error code

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

**Related information...**[TSM generated message codes](#), page 302**Message code: 70041**

Failed to resolve RE host

IP address for RE hostname "(0)" could not be resolved.

0 = RE host name

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

**Related information...**[TSM generated message codes](#), page 302**Message code: 70042**

Controller renamed

Controller "(0)" (name "(1)") renamed to (2).

0 = Controller ID

1 = Controller name

2 = Controller name

Probable cause	Corrective action
An error has occurred.	Informational message.

**Related information...**[TSM generated message codes](#), page 302**Message code: 70043**

Area full

Area "(0)" in module "(1)" is full.

0 = Area

1 = Controller name

Probable cause	Corrective action
An error has occurred.	The output area or error area at the module is empty.

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70044**

Error area zero capacity

Error area "(0)" in module "(1)" at zero capacity.

0 = Area

1 = Controller name

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70045**

Area fill-level threshold reached

Area "(0)" in module "(1)" has reached the fill-level threshold (2).

0 = Area

1 = Controller name

2 = Number

Probable cause	Corrective action
An error has occurred.	An area at the module is empty.

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70046**

Correct BUFFER area name.

Module controller "(0)" has reported the invalid BUFFER name "(1)". Expected BUFFER area name is BUFFER.

0 = Controller name

1 = Area

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70047**

Unexpected CAR unloading

CAR (0) load detected: Loaded at (1), unloaded at (2).

0 = CAR

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1 = AccessPoint ID

2 = AccessPoint ID

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

**Related information...**

*TSM generated message codes, page 302*

**Message code: 70048**

CAR loaded twice

Sample (0) has been loaded on CAR (1), which has supposedly already been loaded with sample (2).

0 = TSM sample number

1 = CAR

2 = TSM sample number

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

**Related information...**

*TSM generated message codes, page 302*

**Message code: 70050**

Error areas cannot be found

The following error areas cannot be found in any module, but have been configured as the destination for samples in the TSM: (0)

0 = Area

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

**Related information...**

*TSM generated message codes, page 302*

**Message code: 70051**

Error areas inactive

The following error areas are inactive, but have been configured as the destination for samples in the TSM: (0)

0 = Area

Probable cause	Corrective action
An error has occurred.	1. Ensure that the module sample drawer is closed.

Probable cause	Corrective action
	2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70052**

Modules with error areas offline  
All modules with error area(s) (0) offline.  
0 = Area

Probable cause	Corrective action
An error has occurred.	1. Ensure that the module is online. 2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70053**

Error areas have no capacity  
No capacity available for error areas (0).  
0 = Area

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70054**

Unexpected status change  
Controller (0) reported status change from status (1) to status (2).  
0 = Controller name  
1 = Status  
2 = Status

Probable cause	Corrective action
An error has occurred.	Informational message.

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**Related information...**

*TSM generated message codes*, page 302

**Message code: 70062**

No secondary node IDs

Module controller "(0)" did not report secondary node IDs for the following areas: (1)

0 = Controller name

1 = Area

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70063**

Invalid secondary node IDs

Module controller "(0)" reported invalid secondary node IDs for the following areas: (1).

0 = Controller name

1 = Area

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70070**

Sample potentially decapped

Missing processing response for sample (0) (barcode "(1)") at Decapper "(2)".

0 = TSM sample number

1 = Sample barcode

2 = Controller name

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70072**

Instruction timed out

Target step canceled for calibration sample (1) (barcode "(2)") at module "(3)". Reason: Missing response for more than (0) minutes. Target steps for calibration samples are not reattempted.

- 0 = Number
- 1 = TSM sample number
- 2 = Sample barcode
- 3 = Controller name

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70073**

Target area unavailable  
 The destination for calibration sample (0) (barcode "(1)") could not be reached. Calibration samples cannot be buffered.  
 0 = TSM sample number  
 1 = Sample barcode

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70074**

Invalid RE error code  
 TSM cannot process the error from the Routing Engine due to an invalid error code. Invalid error code of (0). (1) argument(s): (2)  
 0 = Error code  
 1 = Number  
 2 = Arguments

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70075**

Invalid track error code  
 Controller "(3)" reported an invalid error code (0) with (1) arguments: (2)  
 0 = Error code  
 1 = Number  
 2 = Arguments



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3 = Controller name

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70076**

Invalid track element product code

Invalid product code of track element (0) in segment "(3)". Expected: (1); reported: (2)

0 = Track element

1 = Product code

2 = Product code

3 = Controller name

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70077**

Consumables low

Consumables level (0) in module controller "(1)" has reached a critical fill level: (2)%

0 = Area

1 = Controller name

2 = Number

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Observe the inventory of required consumables for modules.</li> <li>2. Refill the consumables if necessary.</li> </ol>

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70078**

Consumables empty

Consumables (0) in module controller "(1)" are empty.

0 = Consumable name

1 = Controller name

Probable cause	Corrective action
An error has occurred.	Refill the required consumables for modules.

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70079**

Aliquot CAR started unexpectedly

CAR with aliquot sample (0) (barcode "(1)") started unexpectedly at Aliquot Module "(2)".

0 = TSM sample number

1 = Sample barcode

2 = Controller name

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70080**

Incompatible area requirements

Area "(1)" cannot be created for module "(0)". Reason: Area exists at another module with different sample requirements.

0 = Controller name

1 = Area

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70082**

TAC classification data not found

Missing classification data for recognizing tube type (0) at TAC (1).

0 = Tube type

1 = Controller name

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

**Related information...**

*TSM generated message codes*, page 302

Section 10

**Message code: 70083**

TAC area not found

Sample (0) (barcode "(1)") entered at input (2) cannot be routed to a TAC, because there no active TAC area.

0 = TSM sample number

1 = Sample barcode

2 = Controller name

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

**Related information...**

[TSM generated message codes](#), page 302

**Message code: 70084**

Tube type not active

Tube type (0) of sample (1) (barcode "(2)" from (3)) not active.

0 = Tube type

1 = TSM sample number

2 = Sample barcode

3 = Controller name

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

**Related information...**

[TSM generated message codes](#), page 302

**Message code: 70085**

No TAC response

Tube recognition response from TAC (0) not found for sample (1) (barcode "(2)").

0 = Controller name

1 = TSM sample number

2 = Sample barcode

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

**Related information...**

[TSM generated message codes](#), page 302

**Message code: 70086**

Area type cannot be changed

Area types of module "(0)" cannot be changed: Areas are still configured as target for error codes.

Tuples (area name, old area type and new area type): (1)

0 = Controller name

1 = Area, old area type and new area type

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70087**

Target area type changed

The type of current or future target area "(0)" of sample (1) (barcode "(2)") changed at module "(3)".

0 = Area

1 = TSM sample number

2 = Sample barcode

3 = Controller name

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70088**

Areas not found

Module "(0)" does not report the following mandatory areas: (1).

0 = Controller name

1 = Area

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70089**

Invalid area type

Module "(0)" reported invalid area types. Tuples (area, expected type, reported type): (1).

0 = Controller name

1 = Area, expected type, reported type

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70090**

No Aliquot tube types

Aliquot Module "(0)" is set to inactive. Reason: Missing tube type mapping of SCREW and PUSH to active tube types.

0 = Controller name

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70091**

Incorrect area diameter ranges

Module "(0)" reported invalid diameter ranges for an area. They must be descending and non-overlapping. The module reported the following ranges: (1)

0 = Controller name

1 = Area and ranges

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70092**

Sample may have incorrect cap

Missing result message from Recapper "(0)" for sample (1) (barcode "(2)").

0 = Controller name

1 = TSM sample number

2 = Sample barcode

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70093**

No cap removal result

Missing result message from cap remover "(0)" for (1) (barcode "(2)").

0 = Controller name

1 = TSM sample number

2 = Sample barcode

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70094**

Possible sample mix-up

Possible sample mix-up detected: Module "(1)" reported detected barcode "(0)" for sample (2) (barcode "(3)").

0 = Sample barcode

1 = Controller name

2 = TSM sample number

3 = Sample barcode

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Locate both samples.</li> <li>2. Observe the sample results in the middleware to ensure that no sample exchanges or mix-ups occurred.</li> <li>3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70096**

Sample warning message not supported

Analysis for sample (1) (barcode "(2)") contains warning code (0), but the RE could not be informed, because it does not yet support sample warning messages.

0 = Error code

1 = TSM sample number

2 = Sample barcode

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Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Informational message.</li> <li>2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70097**

Unknown sample warning

The analysis for sample (1) (barcode "(2)") contains the invalid warning code (0).

0 = Error code

1 = TSM sample number

2 = Sample barcode

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Informational message.</li> <li>2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70098**

Data recovery failed

Data recovery failed: Invalid message content or message processing failed. Technical details: (0)

0 = Error code

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70099**

Data recovery failed

Data recovery failed: Module reported an invalid total sample number.

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70100**

Failed to process sample processing result

Failed to evaluate a processing result from "(0)" for sample (1) (barcode "(2)"). Possible reasons: Results message received too late or did not contain required information.

0 = Controller name

1 = TSM sample number

2 = Sample barcode

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70101**

Target areas with different disciplines

Module "(0)" does not belong to the same discipline as the other modules of the following areas: (1). For output, archive, centrifuge and analyzer areas, all modules of that area must be assigned to the same discipline.

0 = Controller name

1 = Area

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70102**

Invalid cap status

Area (0) at module (1) cannot be approached. Reason: Cap status (2) not supported. Supported: (3)

0 = Area

1 = Controller name

2 = Cap status

3 = Cap status

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Locate the sample and observe the cap status.</li> <li>2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>



**Related information...**

[TSM generated message codes](#), page 302

**Message code: 70103**

No tube type

Target (0) cannot be approached. Reason: Sample tube type is unknown. It is required at module (1).

0 = Area

1 = Controller name

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

**Related information...**

[TSM generated message codes](#), page 302

**Message code: 70104**

No bottle type

Target (0) cannot be approached. Reason: No bottle type defined for module (1). Bottle type for the combination tube type (2) and product code (3) not found.

0 = Area

1 = Controller name

2 = Tube type

3 = Product code

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

**Related information...**

[TSM generated message codes](#), page 302

**Message code: 70105**

No Aliquot tube type

Aliquot #(0) cannot be created. Reason: Tube type not found.

0 = Aliquot number

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

**Related information...**

[TSM generated message codes](#), page 302

**Message code: 70106**

Failed to determine sample weight

A sample cannot be centrifuged because there are no weighing points and the tube type (0) has no specified default weight.

0 = Tube type

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70107**

Tube type not supported by Aliquot

No Aliquot Module provides required supply area for requested aliquot tube type: (0)

0 = Tube type

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70108**

Tube diameter not supported

Target step (1) for sample (0) is executable. Reason: No module supports the tube diameter.

0 = TSM sample number

1 = Area

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70109**

Invalid discipline

Failed to assign discipline "(0)" for sample (1) (barcode "(2)"). Reason: Discipline not defined.

0 = Discipline

1 = TSM sample number

2 = Sample barcode

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

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**Related information...**

*TSM generated message codes, page 302*

**Message code: 70110**

No screw tube type

ScrewCapper module "(0)" / "(1)" is set to inactive. Reason: No ScrewCapper tube type is configured.

0 = Controller name

1 = Controller ID

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

**Related information...**

*TSM generated message codes, page 302*

**Message code: 70111**

Unsuitable tube type

Sample (1) (barcode "(2)") has an unsuitable tube type "(0)". A screw tube type is required.

0 = Tube type

1 = TSM sample number

2 = Sample barcode

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

**Related information...**

*TSM generated message codes, page 302*

**Message code: 70112**

Sample processing time exceeded

The maximum processing time of sample (1) was exceeded, the last known position was (0).

0 = Carrier ID or Controller ID

1 = TSM sample number

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Locate the sample and place it back on the track for further processing.</li> <li>2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*TSM generated message codes, page 302*

**Message code: 70113**

Aliquot data not found for target step to Aliquot.  
 Target step "(0)" to area "(1)" failed; Aliquot data not found.  
 0 = Processing order  
 1 = Area

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70114**

CAR not started as instructed  
 No translation required

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Locate the CAR and remove it from the track.</li> <li>2. Toggle the on/off switch at the rear of the CAR and place the CAR back on the track in front of an active lane element for further processing.</li> <li>3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70115**

No CAR message  
 No translation required

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70116**

No/invalid CAR weight message  
 No translation required

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70117**

CAR at unexpected position

No translation required

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Locate the CAR and remove it from the track.</li> <li>2. Toggle the on/off switch at the rear of the CAR and place the CAR back on the track in front of an active lane element for further processing.</li> <li>3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70118**

CAR not stopped as instructed

No translation required

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70119**

CAR not deviated as instructed

No translation required

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70120**

Tube type not supported

Tube type "(0)" of sample (2) (barcode "(3)") not supported at module "(1)".

0 = Tube type

1 = Controller name

2 = TSM sample number

3 = Sample barcode

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70121**

CAR not deviated as offered

No translation required

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

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70122**

CAR sent to maintenance

User requests CAR (0) to maintenance lane (1).

0 = CAR

1 = Track element

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Locate the CAR and remove it from the track.</li> <li>2. Toggle the on/off switch at the rear of the CAR and place the CAR back on the track in front of an active lane element for further processing.</li> <li>3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*TSM generated message codes*, page 302

**Message code: 70123**

CAR not charging

No translation required

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Locate the CAR and remove it from the track.</li> <li>2. Toggle the on/off switch at the rear of the CAR and place the CAR back on the track in front of an active lane element for further processing.</li> <li>3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...***TSM generated message codes*, page 302**Message code: 70124**

CAR took too long reaching next sensor

No translation required

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

**Related information...***TSM generated message codes*, page 302**Message code: 70125**

CAR too fast at next sensor

No translation required

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

**Related information...***TSM generated message codes*, page 302**Message code: 70126**

Sample marked as removed

User "(0)" marked sample as removed.

0 = User

Probable cause	Corrective action
An error has occurred.	Informational message.

**Related information...**

[TSM generated message codes](#), page 302

**Message code: 71000**

Tests passed

All checks for uploaded track passed successfully.

Probable cause	Corrective action
An error has occurred.	Informational message.

**Related information...**

[TSM generated message codes](#), page 302

**Message code: 71001**

Invalid track layout file

Uploaded file is not a valid track layout file or it contains invalid entries / values. Technical details: (0)

0 = Error code

Probable cause	Corrective action
An error has occurred.	Informational message.

**Related information...**

[TSM generated message codes](#), page 302

**Message code: 71002**

TSM operation mode unsuitable

Operation mode "Disconnected" required for track layout changes.

Probable cause	Corrective action
An error has occurred.	Informational message.

**Related information...**

[TSM generated message codes](#), page 302

**Message code: 71003**

Track name changed

Layout name changed from "(0)" to "(1)".

0 = Track layout name

1 = Track layout name

Probable cause	Corrective action
An error has occurred.	Informational message.

**Related information...**

[TSM generated message codes](#), page 302



**Message code: 71004**

Ambiguous controller IDs

The following controller identifiers are not unique: (0)

0 = Controller IDs

Probable cause	Corrective action
An error has occurred.	Informational message.

**Related information...**

[TSM generated message codes](#), page 302

**Message code: 71005**

Ambiguous track element IDs

Track element IDs (1) in segment "(0)" are not unique.

0 = Track elements

1 = Controller ID

Probable cause	Corrective action
An error has occurred.	Informational message.

**Related information...**

[TSM generated message codes](#), page 302

**Message code: 71006**

Module removed

Module "(0)" removed.

0 = Controller name

Probable cause	Corrective action
An error has occurred.	Informational message.

**Related information...**

[TSM generated message codes](#), page 302

**Message code: 71007**

Non-empty module removed

Module "(0)" removed. Module still contains samples.

0 = Controller name

Probable cause	Corrective action
An error has occurred.	Informational message.

**Related information...**

[TSM generated message codes](#), page 302

**Message code: 71008**

Sensor not close enough

Sensors in front of track element (0) in segment "(1)" not close enough. Track element will not be able to process all instructions properly.

0 = Track element

1 = Controller ID

Probable cause	Corrective action
An error has occurred.	Informational message.

**Related information...**

*TSM generated message codes*, page 302

**Message code: 71009**

Version downgrade

Version downgrade from (0) to (1).

0 = Track version

1 = Track version

Probable cause	Corrective action
An error has occurred.	Informational message.

**Related information...**

*TSM generated message codes*, page 302

**Message code: 71010**

Segment controller removed

Segment "(0)" removed.

0 = Controller ID

Probable cause	Corrective action
An error has occurred.	Informational message.

**Related information...**

*TSM generated message codes*, page 302

**Message code: 71011**

Unknown product codes

Product codes not supported: (0).

0 = Product code

Probable cause	Corrective action
An error has occurred.	Informational message.

**Related information...**

*TSM generated message codes*, page 302

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**Message code: 71012**

Unavoidable waiting queues  
Missing switches in segment (0) before waiting queues: (1).  
0 = Controller ID  
1 = Node IDs

Probable cause	Corrective action
An error has occurred.	Informational message.

**Related information...**

[TSM generated message codes](#), page 302

**Message code: 71013**

Maintenance lane not found  
Track must contain at least one maintenance lane.

Probable cause	Corrective action
An error has occurred.	Informational message.

**Related information...**

[TSM generated message codes](#), page 302

**Message code: 71014**

Charge lane not found  
Track must contain at least one charging lane.

Probable cause	Corrective action
An error has occurred.	Informational message.

**Related information...**

[TSM generated message codes](#), page 302

**Message code: 71015**

TSM license issue  
No TSM license installed. Only "Test" operation mode is allowed.

Probable cause	Corrective action
An error has occurred.	Informational message.

**Related information...**

[TSM generated message codes](#), page 302

**Message code: 71016**

TSM license issue  
License supports (0) of (1) track segments only. Only "Test" operation mode is allowed.  
0 = Number

1 = Number

Probable cause	Corrective action
An error has occurred.	Informational message.

**Related information...**

[TSM generated message codes](#), page 302

**Message code: 71017**

Module changed

Product code change for module "(0)".

0 = Controller name

Probable cause	Corrective action
An error has occurred.	Informational message.

**Related information...**

[TSM generated message codes](#), page 302

**Message code: 71018**

Non-empty module change

Product code change for module "(0)". Module still contains samples.

0 = Controller name

Probable cause	Corrective action
An error has occurred.	Informational message.

**Related information...**

[TSM generated message codes](#), page 302

**Warning messages of controller interfaces sent by analyzers**

This section contains message codes for warning messages of controller interfaces sent by analyzers.

**Related information...**

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**Message code: 80000**

General error

Analysis ended with warning: Unspecified error condition / generic error. Internal error code: (0)

0 = Error code

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Observe the analyzer for more information.</li> <li>2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Warning messages of controller interfaces sent by analyzers*, page 340

**Message code: 80001**

Not enough liquid

Analysis ended with warning: Not enough liquid. Internal error code: (0)

0 = Error code

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Observe the analyzer for more information.</li> <li>2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Warning messages of controller interfaces sent by analyzers*, page 340

**Message code: 80002**

Clot detected

Analysis ended with warning: Clot detected. Internal error code: (0)

0 = Error code

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Observe the analyzer for more information.</li> <li>2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Warning messages of controller interfaces sent by analyzers*, page 340

**Message code: 80003**

Consumable supply error

Analysis ended with warning: Consumables supply error. Internal error code: (0)

0 = Error code

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Observe the analyzer for more information.</li> <li>2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Warning messages of controller interfaces sent by analyzers*, page 340

**Message code: 80004**

Reagent error

Analysis ended with warning: Reagent error. Internal error code: (0)

0 = Error code

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Observe the analyzer for more information.</li> <li>2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...***Warning messages of controller interfaces sent by analyzers, page 340***Message code: 80005**

Sampling failed

Analysis ended with warning: Sampling failed. Internal error code: (0)

0 = Error code

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Observe the analyzer for more information.</li> <li>2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...***Warning messages of controller interfaces sent by analyzers, page 340***Message code: 80006**

No order

Analysis ended with warning: No order. Internal error code: (0)

0 = Error code

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Observe the middleware and analyzer for more information.</li> <li>2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...***Warning messages of controller interfaces sent by analyzers, page 340*

**Message code: 80007**

Already registered

Analysis ended with warning: Already registered. Internal error code: (0)

0 = Error code

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Observe the analyzer for more information.</li> <li>2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Warning messages of controller interfaces sent by analyzers*, page 340

**Message code: 81004**

Centrifugation not possible

TSM cannot centrifuge sample (0) ("1"). Possible causes: Open tube, cap status is unknown, tube type unknown, problem with weighing, tube diameter not supported by any centrifuge.

0 = TSM sample number

1 = Sample ID

Probable cause	Corrective action
Centrifugation not possible	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Warning messages of controller interfaces sent by analyzers*, page 340

**Message code: 81005**

Sample removal from CAR

Sample (2) / "(3)" was removed at track element (1) from CAR (0). CAR may have a sensor problem.

Loading status will be checked at error area.

0 = CAR

1 = Track element

2 = TSM sample number

3 = Sample ID

Probable cause	Corrective action
An error has occurred.	An informational message was sent to the Track Workflow Manager.



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**Related information...**

*Warning messages of controller interfaces sent by analyzers, page 340*

**Message code: 81006**

Sample not found in module

TSM cannot find sample (1) with barcode "(2)" in module (0).

0 = Controller name

1 = TSM sample number

2 = Sample ID

Probable cause	Corrective action
An error has occurred.	The error was caused by a module error. An informational message was sent to the Track Workflow Manager.

**Related information...**

*Warning messages of controller interfaces sent by analyzers, page 340*

**Message code: 81007**

Centrifugation failed

Centrifuge "(0)" failed to centrifuge sample (1) with barcode "(2)".

0 = Controller name

1 = TSM sample number

2 = Sample ID

Probable cause	Corrective action
Centrifugation failed	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Warning messages of controller interfaces sent by analyzers, page 340*

**Message code: 81008**

Decapping failed

Decapper "(0)" failed to decap sample (1) with barcode "(2)".

0 = Controller name

1 = TSM sample number

2 = Sample ID

Probable cause	Corrective action
Decapping failed	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> </ol>

Probable cause	Corrective action
	2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.

**Related information...**

*Warning messages of controller interfaces sent by analyzers*, page 340

**Message code: 81009**

Recapping failed

Recapper "(0)" failed to recap sample (1) with barcode "(2)".

0 = Controller name

1 = TSM sample number

2 = Sample ID

Probable cause	Corrective action
Recapping failed.	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...**

*Warning messages of controller interfaces sent by analyzers*, page 340

**Message code: 81010**

Failed to create aliquot

Aliquot "(0)" reported an error while creating aliquots for parent sample (1) with barcode "(2)".

0 = Controller name

1 = TSM sample number

2 = Sample ID

Probable cause	Corrective action
An error has occurred.	The error was caused by a module error. An informational message was sent to the Track Workflow Manager.

**Related information...**

*Warning messages of controller interfaces sent by analyzers*, page 340

**Message code: 81011**

Unknown target areas

TSM received the following unknown areas for sample (1) with barcode "(2)" from the Track Workflow Manager: (0)

0 = Area

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1 = TSM sample number  
2 = Sample ID

Probable cause	Corrective action
An error has occurred.	An informational message was sent to the Track Workflow Manager.

**Related information...**

*Warning messages of controller interfaces sent by analyzers, page 340*

**Message code: 81012**

Invalid sample number  
TSM received a message from the Track Workflow Manager for sample (0) with barcode "(1)" which is unknown to TSM.  
0 = TSM sample number  
1 = Sample ID

Probable cause	Corrective action
An error has occurred.	An informational message was sent to the Track Workflow Manager.

**Related information...**

*Warning messages of controller interfaces sent by analyzers, page 340*

**Message code: 81013**

Sample progress timeout exceeded  
Sample (1) with barcode "(2)" has made no progress for (0) minutes.  
0 = Number  
1 = TSM sample number  
2 = Sample ID

Probable cause	Corrective action
An error has occurred.	An informational message was sent to the Track Workflow Manager.

**Related information...**

*Warning messages of controller interfaces sent by analyzers, page 340*

**Message code: 81014**

Barcode validation failed  
A module failed to verify the barcode for sample (0): Instead of the expected barcode "(2)", it read the barcode "(1)".  
0 = TSM sample number  
1 = Barcode  
2 = Sample ID

Probable cause	Corrective action
An error has occurred.	The error was caused by a module error. An informational message was sent to the Track Workflow Manager.

**Related information...**

*Warning messages of controller interfaces sent by analyzers*, page 340

**Message code: 81015**

Route update no longer possible

The status of sample (1) with barcode "(2)" does not allow the route update number (0); TSM ignored the route update number from TWM.

0 = Number

1 = TSM sample number

2 = Sample ID

Probable cause	Corrective action
An error has occurred.	An informational message was sent to the Track Workflow Manager.

**Related information...**

*Warning messages of controller interfaces sent by analyzers*, page 340

**Message code: 81016**

No route message

The Track Workflow Manager has not sent a route message for sample (0) with barcode "(1)".

0 = TSM sample number

1 = Sample ID

Probable cause	Corrective action
An error has occurred.	An informational message was sent to the Track Workflow Manager.

**Related information...**

*Warning messages of controller interfaces sent by analyzers*, page 340

**Message code: 81017**

Sample removed from module

The robot of (0) has failed to pick up sample (1) with barcode "(2)". It was removed manually from the module.

0 = Controller name

1 = TSM sample number

2 = Sample ID

Probable cause	Corrective action
An error has occurred.	The error was caused by a module error. An informational message was sent to the Track Workflow Manager.

**Related information...**

*Warning messages of controller interfaces sent by analyzers*, page 340

**Message code: 81018**

Decapping not possible

TSM cannot decap sample (0) with barcode "(1)".

0 = TSM sample number

1 = Sample ID

Probable cause	Corrective action
Decapping not possible	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Warning messages of controller interfaces sent by analyzers*, page 340

**Message code: 81019**

Analysis failed

Analyzer (0) failed to analyze sample (1) with barcode "(2)".

0 = Controller name

1 = TSM sample number

2 = Sample ID

Probable cause	Corrective action
An error has occurred.	The error was caused by a module error. An informational message was sent to the Track Workflow Manager.

**Related information...**

*Warning messages of controller interfaces sent by analyzers*, page 340

**Message code: 81020**

Aliquoting not possible

Parent sample (0) with barcode "(1)" cannot be aliquoted. Reason: cap status or tube type unknown.

0 = TSM sample number

1 = Sample ID

Probable cause	Corrective action
An error has occurred.	An informational message was sent to the Track Workflow Manager.

**Related information...**

*Warning messages of controller interfaces sent by analyzers*, page 340

**Message code: 81021**

Tube type recognition failed

Module "(0)" failed to recognize the tube type of the sample (1) with barcode "(2)".

0 = Controller name

1 = TSM sample number

2 = Sample ID

Probable cause	Corrective action
Tube type recognition failed	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Warning messages of controller interfaces sent by analyzers*, page 340

**Message code: 81022**

Sample position is unknown

Position of sample (0) with barcode "(1)" is unknown.

0 = TSM sample number

1 = Sample ID

Probable cause	Corrective action
An error has occurred.	The error was caused by a module error. An informational message was sent to the Track Workflow Manager.

**Related information...**

*Warning messages of controller interfaces sent by analyzers*, page 340

**Message code: 81023**

Analysis not possible

Sample (0) with barcode "(1)" cannot be analyzed because the preconditions were not met (cap, tube type).

0 = TSM sample number

1 = Sample ID

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Probable cause	Corrective action
An error has occurred.	An informational message was sent to the Track Workflow Manager.

**Related information...**

*Warning messages of controller interfaces sent by analyzers, page 340*

**Message code: 81024**

Recapping not possible  
TSM cannot recap sample (0) with barcode "(1)".  
0 = TSM sample number  
1 = Sample ID

Probable cause	Corrective action
Recapping not possible.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Warning messages of controller interfaces sent by analyzers, page 340*

**Message code: 81025**

Cap removal failed  
Remover "(0)" failed to remove the cap from sample (1) with barcode "(2)".  
0 = Controller name  
1 = TSM sample number  
2 = Sample ID

Probable cause	Corrective action
Cap removal failed.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Warning messages of controller interfaces sent by analyzers, page 340*

**Message code: 81026**

Cap removal not possible  
TSM cannot remove the cap of sample (0) with barcode "(1)".  
0 = TSM sample number  
1 = Sample ID

Probable cause	Corrective action
Cap removal not possible.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Warning messages of controller interfaces sent by analyzers*, page 340

**Message code: 81027**

Overlapping "processingOrder"

Error in route plan; partial cancellation of target group (0) by (1) not possible.

0 = Processing group

1 = Processing group

Probable cause	Corrective action
An error has occurred.	An informational message was sent to the Track Workflow Manager.

**Related information...**

*Warning messages of controller interfaces sent by analyzers*, page 340

**Message code: 81028**

Discipline error

Discipline (0) sent by the Track Workflow Manager could not be set for sample (1) with barcode "(2)".

0 = Discipline name

1 = TSM sample number

2 = Sample ID

Probable cause	Corrective action
An error has occurred.	An informational message was sent to the Track Workflow Manager.

**Related information...**

*Warning messages of controller interfaces sent by analyzers*, page 340

**Message code: 81029**

Suspicious analysis result

Analyzer (0) reported suspicious analysis result for sample (2) with barcode "(3)". Scanned barcode "(1)". Please check.

0 = Controller name

1 = Sample ID

2 = TSM sample number

3 = Sample ID



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Probable cause	Corrective action
An error has occurred.	The error was caused by a module error. An informational message was sent to the Track Workflow Manager.

**Related information...**

*Warning messages of controller interfaces sent by analyzers*, page 340

**Message code: 81030**

Potential cross-contamination of sample

Potential cross-contamination of sample (1) with barcode "(2)" at "(0)".

0 = Controller name

1 = TSM sample number

2 = Sample ID

Probable cause	Corrective action
An error has occurred.	An informational message was sent to the Track Workflow Manager.

**Related information...**

*Warning messages of controller interfaces sent by analyzers*, page 340

**TWM generated message codes**

This section contains message codes generated by the Track Workflow Manager.

**Related information...**

*Track Sample Manager message codes*, page 286

*82002*, page 354

*82003*, page 355

*82004*, page 355

*82005*, page 355

*82006*, page 356

*82007*, page 356

*82008*, page 356

*82009*, page 356

*83000*, page 357

*83001*, page 357

*83002*, page 357

*83100*, page 358

*83101*, page 358

*83102*, page 358

*83103*, page 358

*83104*, page 359

*83105*, page 359

*83106*, page 359

*83108*, page 360

*83109*, page 360

*83110*, page 360

*83111*, page 361

*83112*, page 361

*83114*, page 361

*83115*, page 361

*83116*, page 362

*83117*, page 362

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*83119*, page 363

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*83129*, page 365

*83130*, page 365

*83131*, page 366

*83132*, page 366

*83133*, page 366

*83134*, page 366

*83135*, page 367

*83136*, page 367

*83137*, page 367

*83996*, page 368

*83997*, page 368

*83998*, page 368

*83999*, page 368

**Message code: 82002**

Insufficient information from HOST

The Track Workflow Manager has insufficient information from HOST for sample (0) with barcode "(1)".

0 = TSM sample number

Section 10

1 = Sample ID

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

**Related information...**

*TWM generated message codes*, page 353

**Message code: 82003**

Duplicate sample

The Track Workflow Manager already has a sample with the barcode "(0)".

0 = Sample ID

Probable cause	Corrective action
An error has occurred.	Locate and remove the sample that has a duplicate bar code.

**Related information...**

*TWM generated message codes*, page 353

**Message code: 82004**

TAC/VOL message not received in config. time

The Track Workflow Manager does not know the tube type of sample (0) with barcode "(1)".

0 = TSM sample number

1 = Sample ID

Probable cause	Corrective action
An error has occurred.	<ol style="list-style-type: none"> <li>1. Correct the error by following the instructions on the touchscreen user interface.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*TWM generated message codes*, page 353

**Message code: 82005**

Cannot create next route step

The Track Workflow Manager is unable to determine the next route step for sample (0) with barcode "(1)".

0 = TSM sample number

1 = Sample ID

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

**Related information...**

*TWM generated message codes*, page 353

**Message code: 82006**

Wrong material or tube type

The Track Workflow Manager is unable to determine the fluid type of sample (0) with barcode "(1)".

0 = TSM sample number

1 = Sample ID

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

**Related information...**

*TWM generated message codes*, page 353

**Message code: 82007**

QC handling error

The Track Workflow Manager failed to create a route plan for QC sample (0) with barcode "(1)" due to unknown barcode.

0 = TSM sample number

1 = Sample ID

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

**Related information...**

*TWM generated message codes*, page 353

**Message code: 82008**

Unregistered sample number

Route creation for sample (0) with barcode "(1)" failed because sample was not reported with sample-NEW message.

0 = TSM sample number

1 = Sample ID

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

**Related information...**

*TWM generated message codes*, page 353

**Message code: 82009**

Order cannot be completed

The Track Workflow Manager is unable to complete the order of sample (0) and barcode "(1)".

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0 = TSM sample number  
1 = Sample ID

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

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83000**

LIS message, field value missing  
Message (0) of type (1) is missing field value (2).  
0 = Message ID  
1 = Message name  
2 = Field reference

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

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83001**

LIS message, field value invalid  
Field (2) has an invalid value of (3) in message (0) of type (1).  
0 = Message ID  
1 = Message name  
2 = Field reference  
3 = Field value

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

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83002**

LIS message, test code invalid  
Message (0) of type (1) has invalid test codes: (2) (3) (4) (5) (6) (7) (8) (9).  
0 = Message ID  
1 = Message name  
2-9 = Comma-separated list of test codes

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

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83100**

No route found  
 No route found (0)  
 0 = Error output area

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

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83101**

Instrument enabled  
 Instrument (0) enabled by (1).  
 0 = Controller name  
 1 = LIS

Probable cause	Corrective action
An instrument is enabled by the laboratory information system.	Track Workflow Manager informational message. No corrective action is required.

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83102**

Instrument disabled  
 Instrument (0) disabled by (1).  
 0 = Controller name  
 1 = LIS

Probable cause	Corrective action
An instrument is disabled by the laboratory information system.	Track Workflow Manager informational message. No corrective action is required.

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83103**

Test enabled

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Test (0) at instrument (1) enabled by (2).

0 = Test code

1 = Controller name

2 = LIS

Probable cause	Corrective action
A test is enabled by the laboratory information system.	Track Workflow Manager informational message. No corrective action is required.

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83104**

Test disabled

Test (0) at instrument (1) disabled by (2).

0 = Test code

1 = Controller name

2 = LIS

Probable cause	Corrective action
A test is disabled by the laboratory information system.	Track Workflow Manager informational message. No corrective action is required.

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83105**

Instrument enabled in TSM

Instrument (0) enabled in TSM.

0 = Controller name

Probable cause	Corrective action
An instrument is enabled in the Track Sample Manager.	Track Workflow Manager informational message. No corrective action is required.

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83106**

Instrument disabled in TSM

Instrument (0) disabled in TSM.

0 = Controller name

Probable cause	Corrective action
An instrument is disabled in the Track Sample Manager.	Track Workflow Manager informational message. No corrective action is required.

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83108**

Maximum aliquot volume exceeded

Volume (1) of sample (0) exceeds maximum allowed volume (2).

0 = Sample bar code

1 = Required aliquot volume in microliters

2 = Maximum aliquot volume allowed

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

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83109**

Incoming interface connected

Incoming (0) interface with identifier (1) and version (2) connected.

0 = LIS/TSM

1 = Middleware/TSM

2 = 1.0

Probable cause	Corrective action
Connection with the middleware and the Track Sample Manager is established.	Track Workflow Manager informational message. No corrective action is required.

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83110**

Incoming interface disconnected

Incoming (0) interface with identifier (1) disconnected.

0 = LIS/TSM

1 = Middleware/TSM

Probable cause	Corrective action
Connection with the middleware and the Track Sample Manager is disconnected.	Track Workflow Manager informational message. If disconnection continues, contact an Abbott Laboratories representative or an authorized service representative.

**Related information...**

*TWM generated message codes*, page 353



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**Message code: 83111**

Outgoing interface connected  
Outgoing (0) interface with identifier (1) connected.  
0 = LIS/TSM  
1 = Middleware/TSM

Probable cause	Corrective action
Connection with the middleware and the Track Sample Manager is established.	Track Workflow Manager informational message. No corrective action is required.

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83112**

Outgoing interface disconnected  
Outgoing (0) interface with identifier (1) disconnected.  
0 = LIS/TSM  
1 = Middleware/TSM

Probable cause	Corrective action
Connection with the middleware and the Track Sample Manager is disconnected.	Track Workflow Manager informational message. If disconnection continues, contact an Abbott Laboratories representative or an authorized service representative.

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83114**

Some tests cannot be run  
Test (1) cannot be run, go to (0).  
0 = Error output area  
1 = Test code

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

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83115**

Precondition of fluid type  
Precondition of fluid type (1) in area (0).  
0 = Area name  
1 = Fluid type

Probable cause	Corrective action
A route has been generated.	Track Workflow Manager informational message. No corrective action is required.

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83116**

Precondition of test

Precondition of test (1) in area (0).

0 = Area name

1 = Test code

Probable cause	Corrective action
A route has been generated.	Track Workflow Manager informational message. No corrective action is required.

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83117**

Precondition of area

Precondition of area (0).

0 = Area name

Probable cause	Corrective action
A route has been generated.	Track Workflow Manager informational message. No corrective action is required.

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83118**

Precondition of area+test+fluid type

Precondition of area (0), test (1), fluid type (2).

0 = Area name

1 = Test code

2 = Fluid type

Probable cause	Corrective action
A route has been generated.	Track Workflow Manager informational message. No corrective action is required.

**Related information...**

*TWM generated message codes*, page 353

Section 10

**Message code: 83119**

Ordered tests  
 Ordered tests (1) in area (0).  
 0 = Area name  
 1 = Comma-separated list of test codes

Probable cause	Corrective action
A route has been generated.	Track Workflow Manager informational message. No corrective action is required.

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83120**

No-order action of fluid type  
 No-order action of fluid type (1) in area (0).  
 0 = Area name  
 1 = Fluid type

Probable cause	Corrective action
A route has been generated.	Track Workflow Manager informational message. No corrective action is required.

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83121**

Post-order action of fluid type  
 Post-order action of fluid type (1) in area (0).  
 0 = Area name  
 1 = Fluid type

Probable cause	Corrective action
A route has been generated.	Track Workflow Manager informational message. No corrective action is required.

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83122**

Post-order action of test  
 Post-order action of test (1) in area (0).  
 0 = Area name  
 1 = Test code

Probable cause	Corrective action
A route has been generated.	Track Workflow Manager informational message. No corrective action is required.

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83123**

Post-order action of final destination  
 Post-order action of final destination (1) in area (0).  
 0 = Area name  
 1 = Final destination area name

Probable cause	Corrective action
A route has been generated.	Track Workflow Manager informational message. No corrective action is required.

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83124**

Post-area action  
 Post-area action for (0).  
 0 = Area name

Probable cause	Corrective action
A route has been generated.	Track Workflow Manager informational message. No corrective action is required.

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83125**

Post-area wait time  
 Post-area wait time (0).  
 0 = Area name

Probable cause	Corrective action
A route has been generated.	Track Workflow Manager informational message. No corrective action is required.

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83127**

Route search canceled

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Maximum configured number of pre-analytics or analytics areas for processing the ordered tests has been exceeded.

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

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83128**

All tests disabled

All tests disabled

Probable cause	Corrective action
A route could not be generated.	<ul style="list-style-type: none"> <li>View and update the test and instrument statuses in the middleware and the Track Sample Manager.</li> <li>Contact an Abbott Laboratories representative or an authorized service representative.</li> </ul>

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83129**

Nothing to do

Nothing to do

Probable cause	Corrective action
An informational message is displayed.	Track Workflow Manager informational message. No corrective action is required.

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83130**

Tests with highest sequence number are disabled

Tests with highest sequence number are disabled in all areas.

Probable cause	Corrective action
An error has occurred.	<ul style="list-style-type: none"> <li>View and update the test and instrument statuses in the middleware and the Track Sample Manager.</li> <li>Contact an Abbott Laboratories representative or an authorized service representative.</li> </ul>

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83131**

Sample has wrong fluid type

Sample has wrong fluid type (0) to process any ordered test: (1)

0 = Fluid type

1 = Test code

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

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83132**

Centrifugation profiles mismatch

The following workflows have mismatching centrifugation profiles: (0)

0 = Centrifugation profile

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

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83133**

Sample weight below cut-off weight

The sample (0) / "(1)" cannot be routed any further because the sample weight is below the cut-off weight.

0 = TSM sample number

1 = Sample ID

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

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83134**

Buffer wait time canceled

The buffer wait was canceled because of ordered tests (1) in area (0).

0 = Area name

1 = Test code

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Probable cause	Corrective action
An informational message is displayed.	Track Workflow Manager informational message. No corrective action is required.

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83135**

Maximum number of aliquots exceeded  
The number of aliquots to be created for sample (0) exceeds with (1) the allowed value of (2).  
0 = TSM sample number  
1 = Number of aliquots  
2 = Allowed number of aliquots

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

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83136**

Sample is sent to archive  
The sample was sent to area '(0)' with final destination archive '(2)' because of configuration of input area '(1)'.  
0 = Area name  
1 = Archive  
2 = Input area name

Probable cause	Corrective action
An informational message is displayed.	Track Workflow Manager informational message. No corrective action is required.

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83137**

Aliquot sample ID length exceeded  
Aliquot barcode "(0)" generated from parent sample {TSM Sample Number} / "{Sample ID}" using aliquot group (1) with aliquot template (2) for area (3) exceeds maximum length of 20 characters  
0 = Sample ID  
1 = Aliquot group name  
2 = Aliquot template name  
3 = Area name

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

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83996**

Analysis warning - Error area  
 Sample warning of type (0) was configured with error area (1).  
 0 = TSM sample warning number  
 1 = Error area name

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

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83997**

All other errors  
 All other errors

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

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83998**

Test not available  
 Test not available

Probable cause	Corrective action
An error has occurred.	<ul style="list-style-type: none"> <li>View and update the status of the ordered test on the instruments on the track.</li> <li>Contact an Abbott Laboratories representative or an authorized service representative.</li> </ul>

**Related information...**

*TWM generated message codes*, page 353

**Message code: 83999**

Unknown error code  
 Unknown error code: (0) with arguments (1), (2), (3), (4), (5), (6), (7), (8), (9)



Section 10

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0 = Unknown error code  
1-9 = Unknown error arguments

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

**Related information...**

*TWM generated message codes*, page 353

## Observed problems

Observed problems provide information about problems that may occur on the system 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](http://corelaboratory.abbott).



**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.

### Related information...

[Troubleshooting](#), page 249

[Track observed problems](#), page 370

[CAR observed problems](#), page 372

[Track Sample Manager observed problems](#), page 377

[Input/Output Module observed problems](#), page 380

## Track observed problems

Track observed problems include problems that occur with the track.

### Related information...

[Observed problems](#), page 370

[Errors at AccessPoint](#), page 370

[Errors at charge lane](#), page 371

[Errors at cross switch controllers](#), page 371

[Operator manually loads or unloads CAR](#), page 371

[Sample in CAR was exchanged](#), page 371

[Sample is missing](#), page 372

### Errors at AccessPoint

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

### Related information...

[Track observed problems](#), page 370

**Errors at charge lane**

Probable cause	Corrective action
Charge lane errors occurred.	Contact an Abbott Laboratories representative or an authorized service representative.

**Related information...**

*Track observed problems*, page 370


**Errors at cross switch controllers**

Probable cause	Corrective action
Errors occurred at the cross switch controllers.	Contact an Abbott Laboratories representative or an authorized service representative.

**Related information...**

*Track observed problems*, page 370

**Operator manually loads or unloads CAR**

Probable cause	Corrective action
<p>The operator removes a sample from a CAR manually or loads a CAR manually.</p> <p> <b>CAUTION: Do not remove samples from a CAR or the track.</b> 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.</p>	Observe that the CAR moves to the output module for inspection purposes. Confirm that checks are performed on the CAR loading status or on the sample.

**Related information...**

*Track observed problems*, page 370

**Sample in CAR was exchanged**

Probable cause	Corrective action
The sample in the CAR was exchanged.	Verify if there are differences in assignment between the CAR ID and the sample. If differences in assignment are present, the sample is transported to the error area of the output module.

**Related information...**

*Track observed problems*, page 370

## Sample is missing

Probable cause	Corrective action
A sample is missing.	Use the Track Sample Manager to display the last action of the missing sample.

### Related information...

*Track observed problems*, page 370

## CAR observed problems

CAR observed problems include problems that occur with the CARs.

### Related information...

*Observed problems*, page 370

*CAR always moves at a constant speed*, page 372

*CAR does not exit the charge lane*, page 373

*CAR does not maintain distance with the CAR ahead of it or pushes it forward*, page 373

*CAR is caught on the charge lane charging pin or lane element transition*, page 373

*CAR LEDs blink in an uncontrolled manner (such as red and yellow) while moving*, page 374

*CAR lurches from side to side and is not stopped at the AccessPoint*, page 374

*CAR movement is jerky or noisy*, page 374

*CAR position is skewed on the track*, page 374

*CARs are present in the charge lane but cannot move*, page 375

*CARs come into contact with the charge lane*, page 375

*CARs do not move*, page 375

*CARs move too slowly*, page 375

*New CAR does not move*, page 376

*Rechargeable lithium battery is not charged*, page 376

*Rechargeable lithium battery is overheating*, page 376

*Sample tube is slanted in the sample holder*, page 377

## CAR always moves at a constant speed

Probable cause	Corrective action
The CAR does not detect any commands from the active lane elements.	<ul style="list-style-type: none"> <li>• Clean the CAR. Perform one or more of the following procedures:                             <ul style="list-style-type: none"> <li>– <i>Clean the sensors</i>, page 231.</li> <li>– <i>Clean the housing</i>, page 232.</li> <li>– <i>Clean the charging contacts</i>, page 232.</li> <li>– <i>Clean the sample holder</i>, page 233.</li> <li>– <i>Clean the drive wheel and the wheel arch</i>, page 233.</li> </ul> </li> </ul>

Probable cause	Corrective action
	<ul style="list-style-type: none"> <li>If necessary, replace the CAR. Perform one of the following procedures: <ul style="list-style-type: none"> <li><i>Remove a CAR with a sample</i>, page 236.</li> <li><i>Remove a CAR without a sample</i>, page 236.</li> </ul> </li> <li>Contact an Abbott Laboratories representative or an authorized service representative.</li> </ul>

**Related information...**

*CAR observed problems*, page 372

**CAR does not exit the charge lane**

Probable cause	Corrective action
The CAR does not charge. The charge lane may be defective.	Contact an Abbott Laboratories representative or an authorized service representative.

**Related information...**

*CAR observed problems*, page 372

**CAR does not maintain distance with the CAR ahead of it or pushes it forward**

Probable cause	Corrective action
The collision sensor is defective or malfunctioning.	<ol style="list-style-type: none"> <li>Turn off the CAR, and then turn it on again. <b>NOTE:</b> Do not affix extra labels to CARs as the labels may adversely affect the collision sensors on the CARs.</li> <li>Contact an Abbott Laboratories representative or an authorized service representative if necessary.</li> </ol>

**Related information...**

*CAR observed problems*, page 372

**CAR is caught on the charge lane charging pin or lane element transition**

Probable cause	Corrective action
The distance between the CAR underseal and the lane elements is insufficient.	<ul style="list-style-type: none"> <li>Inspect the bottom of the CAR for dust. If replacement of the front underseal is necessary, perform <i>Replace the front underseal of a CAR</i>, page 237.</li> <li>Inspect the lane elements. If replacement of any lane elements is necessary, contact an Abbott Laboratories representative or an authorized service representative to replace the appropriate lane elements.</li> </ul>

**Related information...**

[CAR observed problems](#), page 372

**CAR LEDs blink in an uncontrolled manner (such as red and yellow) while moving**

Probable cause	Corrective action
The CAR requires a restart.	<ol style="list-style-type: none"> <li>1. Turn off the CAR, and then turn it on again.</li> <li>2. Contact an Abbott Laboratories representative or an authorized service representative if necessary.</li> </ol>

**Related information...**

[CAR observed problems](#), page 372

**CAR lurches from side to side and is not stopped at the AccessPoint**

Probable cause	Corrective action
<ul style="list-style-type: none"> <li>• The sliders are no longer present on the CAR.</li> <li>• The guiding pin has broken off the CAR.</li> </ul>	Replace the front underseal. Perform <a href="#">Replace the front underseal of a CAR</a> , page 237.

**Related information...**

[CAR observed problems](#), page 372

**CAR movement is jerky or noisy**

Probable cause	Corrective action
The CAR is dirty.	<ul style="list-style-type: none"> <li>• Clean the CAR. Perform one or more of the following procedures: <ul style="list-style-type: none"> <li>– <a href="#">Clean the sensors</a>, page 231.</li> <li>– <a href="#">Clean the housing</a>, page 232.</li> <li>– <a href="#">Clean the charging contacts</a>, page 232.</li> <li>– <a href="#">Clean the sample holder</a>, page 233.</li> <li>– <a href="#">Clean the drive wheel and the wheel arch</a>, page 233.</li> </ul> </li> <li>• Contact an Abbott Laboratories representative or an authorized service representative if necessary.</li> </ul>

**Related information...**

[CAR observed problems](#), page 372

**CAR position is skewed on the track**

Probable cause	Corrective action
The CAR is worn on one side.	Replace the front underseal. Perform <a href="#">Replace the front underseal of a CAR</a> , page 237.

**Related information...**[CAR observed problems](#), page 372**CARs are present in the charge lane but cannot move**

Probable cause	Corrective action
The charge lane charging pins do not release the CAR.	Contact an Abbott Laboratories representative or an authorized service representative.

**Related information...**[CAR observed problems](#), page 372**CARs come into contact with the charge lane**

Probable cause	Corrective action
The sliders on the CAR are worn.	Replace the front underseal. Perform <a href="#">Replace the front underseal of a CAR</a> , page 237.

**Related information...**[CAR observed problems](#), page 372**CARs do not move**

Probable cause	Corrective action
The CAR requires a restart.	Turn off the CAR, and then turn it on again.
The CAR is defective.	If necessary, replace the CAR. Perform one of the following procedures: <ul style="list-style-type: none"> <li>• <a href="#">Remove a CAR with a sample</a>, page 236.</li> <li>• <a href="#">Remove a CAR without a sample</a>, page 236.</li> </ul>
The rechargeable lithium battery is almost empty.	Charge the CAR.
Debris is present on the track.	Remove any debris from the track.
The guide pin is broken.	Replace the front underseal. Perform <a href="#">Replace the front underseal of a CAR</a> , page 237.
A track element is disconnected.	Contact an Abbott Laboratories representative or an authorized service representative.

**Related information...**[CAR observed problems](#), page 372**CARs move too slowly**

Probable cause	Corrective action
<ul style="list-style-type: none"> <li>• The CAR requires a restart.</li> <li>• The CAR is defective.</li> <li>• The rechargeable lithium battery is almost empty.</li> </ul>	<ol style="list-style-type: none"> <li>1. Turn off the CAR, and then turn it on again.</li> <li>2. Contact an Abbott Laboratories representative or an authorized service representative if necessary.</li> </ol>

**Related information...**

*CAR observed problems*, page 372

**New CAR does not move**

Probable cause	Corrective action
The CAR is not registered in the control system.	<ul style="list-style-type: none"> <li>• Turn on the CAR.</li> <li>• Inspect the track for obstructions.</li> <li>• Contact an Abbott Laboratories representative or an authorized service representative if necessary.</li> </ul>
The lithium battery charge level of the CAR is low.	<ul style="list-style-type: none"> <li>• Turn on and turn off the CAR.</li> <li>• Inspect the track for obstructions.</li> <li>• Remove the CAR from the track.</li> <li>• Contact an Abbott Laboratories representative or an authorized service representative if necessary.</li> </ul>
An obstruction is present on the driving lane.	<ul style="list-style-type: none"> <li>• Turn on and turn off the CAR.</li> <li>• Inspect the track for obstructions.</li> <li>• Remove the CAR from the track.</li> <li>• Contact an Abbott Laboratories representative or an authorized service representative if necessary.</li> </ul>

**Related information...**

*CAR observed problems*, page 372


**Rechargeable lithium battery is not charged**

Probable cause	Corrective action
The charging contacts on the rechargeable lithium battery are dirty.	<ul style="list-style-type: none"> <li>• Clean the charging contacts on the rechargeable lithium battery.</li> <li>• Contact an Abbott Laboratories representative or an authorized service representative to replace the rechargeable lithium battery.</li> </ul>

**Related information...**

*CAR observed problems*, page 372

**Rechargeable lithium battery is overheating**

Probable cause	Corrective action
The rechargeable lithium battery is defective.	<ol style="list-style-type: none"> <li>1. Remove the CAR from the track. <ul style="list-style-type: none"> <li> <b>CAUTION:</b> Wear personal protective equipment while operating the laboratory automation system.</li> </ul> </li> <li>2. Contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>



**Related information...**[CAR observed problems](#), page 372**Sample tube is slanted in the sample holder**

Probable cause	Corrective action
One of the sample holder clips is defective or the sample tube falls from the CAR.	<ul style="list-style-type: none"> <li>• Contact an Abbott Laboratories representative or an authorized service representative to replace the sample holder.</li> <li>• Remove the sample tube from the Track Sample Manager.</li> <li>• Reload the sample tube in the correct input area of the Input/Output Module.</li> </ul>

**Related information...**[CAR observed problems](#), page 372**Track Sample Manager observed problems**

Track Sample Manager (TSM) observed problems include problems that occur with TSM.

**Related information...**[Observed problems](#), page 370[CARs are circling the track](#), page 377[CARs do not reach a specific target; not all CARs reach targets](#), page 378[Too many samples are present in the error area of the output module](#), page 378[Traffic jam occurs on the track](#), page 379[Waiting queues are not full; waiting queues are empty but CARs are required](#), page 379[Track Sample Manager message codes](#), page 286**CARs are circling the track**

Probable cause	Corrective action
The Track Sample Manager (TSM) is powered off.	<ol style="list-style-type: none"> <li>1. Verify the connection between TSM and the Track Workflow Manager (TWM). Perform <a href="#">View the connections to TWM on TSM</a>, page 143.</li> <li>2. Contact an Abbott Laboratories representative or an authorized service representative if necessary.</li> </ol>
The sample target is not available.	<ol style="list-style-type: none"> <li>1. Verify the availability and online status of the areas and modules. See <a href="#">Controller tab element descriptions (TSM)</a>, page 127.</li> <li>2. Transition the module status to Online.</li> </ol>

Probable cause	Corrective action
The target area of the output module is full.	<ol style="list-style-type: none"> <li>1. Verify the fill levels of the areas on TSM. See <a href="#">Controller tab element descriptions (TSM)</a>, page 127.</li> <li>2. Ensure that the output drawers are emptied.</li> </ol>

**Related information...**

[Track Sample Manager observed problems](#), page 377

**CARs do not reach a specific target; not all CARs reach targets**

Probable cause	Corrective action
The switch is not working correctly or an error occurred on the track.	<ol style="list-style-type: none"> <li>1. Visually inspect the track for dust.</li> <li>2. Verify that the cross switch is working correctly.</li> <li>3. Contact an Abbott Laboratories representative or an authorized service representative if necessary. See <a href="#">Samples tab (TSM)</a>, page 144.</li> </ol>

**Related information...**

[Track Sample Manager observed problems](#), page 377

**Too many samples are present in the error area of the output module**

Probable cause	Corrective action
Errors occurred on the modules and caused the samples to be routed to the error area.	Verify the status of the module or analyzer on which the samples are to be processed. See <a href="#">Samples tab (TSM)</a> , page 144.
An error occurred when the bar code was read.	<ol style="list-style-type: none"> <li>1. Ensure that the correct bar code labels have been correctly affixed to the sample tubes.</li> <li>2. Contact an Abbott Laboratories representative or an authorized service representative if necessary.</li> </ol>
A sample was not processed within the time limit.	Determine the reason for the time-out.
An error occurred with the robot gripper.	<ol style="list-style-type: none"> <li>1. Visually inspect the robot gripper for dust.</li> <li>2. Contact an Abbott Laboratories representative or an authorized service representative if necessary.</li> </ol>

**Related information...**

[Track Sample Manager observed problems](#), page 377

**Traffic jam occurs on the track**

Probable cause	Corrective action
The Track Sample Manager cannot route a CAR to a charge lane because the lithium battery charge level of the CAR is below the limit.	<ul style="list-style-type: none"> <li>• Unload the CAR.</li> <li>• Manually place the CAR on a charge lane. See <a href="#">CARs tab element descriptions (TSM)</a>, page 157.</li> </ul>
A collision occurred between two CARs at a switch.	<ol style="list-style-type: none"> <li>1. Inspect the CARs for damage.</li> <li>2. Repair or replace damaged CARs.</li> <li>3. Manually move undamaged CARs.</li> <li>4. Contact an Abbott Laboratories representative or an authorized service representative if necessary.</li> </ol>
Too many CARs are present on the track.	Reduce the number of samples in the system.
The switch performance is insufficient.	<ol style="list-style-type: none"> <li>1. Visually inspect the switch for dust.</li> <li>2. Verify that the cross switch is working correctly. See <a href="#">Samples tab (TSM)</a>, page 144.</li> <li>3. Contact an Abbott Laboratories representative or an authorized service representative if necessary.</li> </ol>

**Related information...**

[Track Sample Manager observed problems](#), page 377

**Waiting queues are not full; waiting queues are empty but CARs are required**

Probable cause	Corrective action
Not enough CARs are available on the track.	Slow down the rate at which the input module is filled with samples. See <a href="#">CARs tab element descriptions (TSM)</a> , page 157.
Too many CARs have a low lithium battery charge level.	<ol style="list-style-type: none"> <li>1. Inspect the charge lanes.</li> <li>2. Verify the lithium battery charge level of the CARs. See <a href="#">CARs tab element descriptions (TSM)</a>, page 157.</li> </ol>
The switch at the entry point of the queue is defective.	<ol style="list-style-type: none"> <li>1. Visually inspect the queue for dust.</li> <li>2. Verify that the cross switch is working correctly.</li> <li>3. Contact an Abbott Laboratories representative or an authorized service representative if necessary. See <a href="#">Samples tab (TSM)</a>, page 144.</li> </ol>
A CAR was manually removed from the queue.	<ol style="list-style-type: none"> <li>1. Do not remove a CAR from the queue.</li> <li>2. Verify that the cross switch is working correctly. See <a href="#">List requested tab (Samples) element descriptions (TSM)</a>, page 154.</li> </ol>

**Related information...**

*Track Sample Manager observed problems*, page 377

## Input/Output Module observed problems

Input/Output Module observed problems include problems that occur on the Input/Output Module.

Dust can cause system errors. Before troubleshooting is performed for system errors, the module status must be transitioned to Offline by using the Online/Offline push button or the **Online/Offline** button.

**NOTE:** If errors occur, observe the instructions on the monitor.

**Related information...**

*Observed problems*, page 370

*Bar code is not read*, page 380

*CAR does not move to the module*, page 381

*CAR moves through the AccessPoint without stopping*, page 381

*CAR stops at the AccessPoint and then will not move*, page 381

*Drawer is not fully open or fully closed*, page 381

*Power to the module is interrupted*, page 382

*Robot does not respond*, page 383

*Robot gripper loses its grip on the sample tube*, page 383

*Sample tube is jammed in the robot gripper*, page 384

*Sample tube is tilted in the FlexRack*, page 384

*Touchscreen user interface and push buttons do not respond*, page 384

*Touchscreen user interface does not respond*, page 385

### Bar code is not read

Probable cause	Corrective action
The bar code reader is dirty or defective.	<ol style="list-style-type: none"> <li>1. Clean the bar code reader. Perform <i>Clean the bar code reader</i>, page 243.</li> <li>2. Contact an Abbott Laboratories representative or an authorized service representative if necessary.</li> </ol>
The bar code is illegible.	<ol style="list-style-type: none"> <li>1. Relabel the sample tube.</li> <li>2. Reintroduce the sample tube to the module.</li> </ol>

**Related information...**

*Input/Output Module observed problems*, page 380

**CAR does not move to the module**

Probable cause	Corrective action
An error or defect occurred that involves the switch 90 divergent lane element.	Contact an Abbott Laboratories representative or an authorized service representative.
A module error occurred.	Correct errors on the module.
An error occurred with the Track Sample Manager (TSM) or Track Workflow Manager (TWM).	<ol style="list-style-type: none"> <li>1. Verify the TSM or TWM connection.</li> <li>2. Contact an Abbott Laboratories representative or an authorized service representative if necessary.</li> </ol>

**Related information...**

*Input/Output Module observed problems*, page 380

**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...**

*Input/Output Module observed problems*, page 380

**CAR stops at the AccessPoint and then will not move**

Probable cause	Corrective action
An error occurred at the AccessPoint.	<ol style="list-style-type: none"> <li>1. <i>Cycle power to the module</i>, page 190.</li> <li>2. If the CAR does not move, perform <i>Cycle power to an empty CAR</i>, page 120.</li> <li>3. Contact an Abbott Laboratories representative or an authorized service representative if necessary.</li> </ol>

**Related information...**

*Input/Output Module observed problems*, page 380

**Drawer is not fully open or fully closed**


Probable cause	Corrective action
A mechanical problem occurred.	<ol style="list-style-type: none"> <li>1. Inspect the drawer for obstructions. Remove any foreign objects.</li> <li>2. Press the drawer push button to ensure that the drawer is fully open or fully closed.</li> </ol>

Probable cause	Corrective action
	<ol style="list-style-type: none"> <li>3. If necessary, perform <i>Cycle power to the module</i>, page 190.</li> <li>4. Contact an Abbott Laboratories representative or an authorized service representative if necessary.</li> </ol>

**Related information...**

*Input/Output Module observed problems*, page 380

**Power to the module is interrupted**

Probable cause	Corrective action
<p>The power source to the module is interrupted.</p>	<ol style="list-style-type: none"> <li>1. Open the module cover. Perform <i>Open and close the front and rear module covers</i>, page 187.</li> <li>2. Remove all samples from the module.                     <div style="margin-left: 20px;">  <p><b>CAUTION: Danger due to power failure.</b> In the case of a power failure, the samples (including emergency samples) remain inside the laboratory automation system (LAS) and must be removed manually as required.</p> <ul style="list-style-type: none"> <li>– Only allow trained personnel to remove the samples manually.</li> <li>– If a sample is held by a robot gripper, manually remove the sample.</li> <li>– Observe the LAS for any remaining emergency samples and remove them manually.</li> <li>– Follow the information in the operations manuals for the modules.</li> </ul> </div> </li> <li>3. On the Track Sample Manager (TSM) user interface, remove the samples from the TSM database. For more information on removing samples from TSM, refer to the GLP systems Track Operations Manual.</li> <li>4. Place the samples in the correct input area of the Input/Output Module.</li> <li>5. Clean any spills if necessary. For more information, refer to the GLP systems Track Operations Manual.</li> <li>6. Close the module cover. Perform <i>Open and close the front and rear module covers</i>, page 187.</li> <li>7. <i>Place the module online</i>, page 193.</li> </ol>

**Related information...***Input/Output Module observed problems*, page 380**Robot does not respond**

Probable cause	Corrective action
A robot error or a mechanical problem occurred.	<ol style="list-style-type: none"> <li>1. Follow the error dialog on the touchscreen user interface.</li> <li>2. <i>Cycle power to the module</i>, page 190.</li> <li>3. Contact an Abbott Laboratories representative or an authorized service representative if necessary.</li> </ol>
A drawer is not fully open or fully closed.	<ol style="list-style-type: none"> <li>1. Observe the notification displayed on the touchscreen user interface.</li> <li>2. Inspect the drawer for obstructions. Remove any foreign objects.</li> <li>3. Press the drawer push button to ensure that the drawer is fully open or fully closed.</li> <li>4. If necessary, perform <i>Deactivate pause mode</i>, page 194.</li> <li>5. Tap the notification on the touchscreen user interface to acknowledge it.</li> </ol>

**Related information...***Input/Output Module observed problems*, page 380**Robot gripper loses its grip on the sample tube**

Probable cause	Corrective action
The robot gripper fingers are defective.	<ul style="list-style-type: none"> <li>• <i>Replace the robot gripper fingers</i>, page 245.</li> <li>• Manually insert the sample tube for analysis in the sample input drawer.</li> <li>• Separately appraise and specifically assess the test result of the dropped sample tube.</li> </ul>
Sample tubes that are 16 mm x 100 mm were placed next to each other in the FlexRacks.	<ol style="list-style-type: none"> <li>1. Place the 16 mm x 100 mm sample tubes apart from each other in the FlexRacks.</li> <li>2. Contact an Abbott Laboratories representative or an authorized service representative if necessary.</li> </ol>

**Related information...***Input/Output Module observed problems*, page 380

### Sample tube is jammed in the robot gripper

Probable cause	Corrective action
The robot gripper fingers are defective or dirty.	<ol style="list-style-type: none"> <li>1. If a sample tube is located in a robot gripper, secure the sample tube with one hand and press the release button with the other hand. See <i>Input/Output Module design and function</i>, page 50.</li> <li>2. Inspect the robot gripper fingers for damage and dirt.</li> <li>3. If necessary, perform <i>Clean the robot gripper</i>, page 240.</li> <li>4. If necessary, perform <i>Replace the robot gripper fingers</i>, page 245.</li> <li>5. Follow the error dialog on the touchscreen user interface.</li> <li>6. Contact an Abbott Laboratories representative or an authorized service representative if necessary.</li> </ol>
Sample tubes that are 16 mm x 100 mm were placed next to each other in the FlexRacks.	<ol style="list-style-type: none"> <li>1. Place the 16 mm x 100 mm sample tubes apart from each other in the FlexRacks.</li> <li>2. Contact an Abbott Laboratories representative or an authorized service representative if necessary.</li> </ol>

**Related information...**

*Input/Output Module observed problems*, page 380

### Sample tube is tilted in the FlexRack

Probable cause	Corrective action
The FlexRack is damaged.	Replace the FlexRack. Perform <i>Replace a FlexRack</i> , page 247.

**Related information...**

*Input/Output Module observed problems*, page 380

### Touchscreen user interface and push buttons do not respond

Probable cause	Corrective action
A hardware error occurred.	<ol style="list-style-type: none"> <li>1. Locate the leftmost power switch at the rear of the module. If the power switches cannot be located, contact an Abbott Laboratories representative or an authorized service representative.</li> <li>2. Move the leftmost power switch to the Off position to turn off the power.</li> </ol>



Probable cause	Corrective action
	<ol style="list-style-type: none"> <li>3. After the module is powered off, wait for a minimum of 1 minute.</li> <li>4. Move the leftmost power switch to the On position. As soon as the power supply has been restored, perform <i>Power on the module</i>, page 191.</li> <li>5. Contact an Abbott Laboratories representative or an authorized service representative if necessary.</li> </ol> <p><b>NOTE:</b> When an emergency situation occurs, <i>Perform an emergency shutdown</i>, page 106.</p>

**Related information...**

*Input/Output Module observed problems*, page 380

**Touchscreen user interface does not respond**

Probable cause	Corrective action
A software error occurred.	<ol style="list-style-type: none"> <li>1. <i>Cycle power to the module</i>, page 190.</li> <li>2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.</li> </ol>

**Related information...**

*Input/Output Module observed problems*, page 380

## NOTES

## Glossary

<b>accessories</b>	Service accessories are items that are used for system installation and for maintenance and troubleshooting procedures. Only approved customer-replaceable components are used as needed for component replacement.
<b>AccessPoint</b>	An active lane element that holds the CARs and samples in place, allowing for secure processing of the samples.
<b>analyzer</b>	An instrument that performs all sample-processing activities from sample aspiration to final result reporting.
<b>bar code label</b>	A unique identifier that contains black bars that represent the sample information.
<b>biological hazard</b>	An activity or an area where the operator may be exposed to potentially infectious material.
<b>CAR</b>	A sample transport vehicle that runs on an intermodular track system.
<b>circle</b>	An area of the track layout that is used to limit the CARs, which can move at the same time in one part of the track. Circles are defined by the default deviation of switches.
<b>Clinical and Laboratory Standards Institute</b>	A nonprofit organization that provides a communication forum for the development, promotion, and use of standards for the worldwide medical science community.
<b>CLSI</b>	See <i>Clinical and Laboratory Standards Institute</i> , page 387.
<b>control system</b>	Software composed of the laboratory information system, including middleware, the Track Sample Manager, and the Track Workflow Manager.
<b>diagnostic procedure</b>	A procedure that can be used to confirm the status of assemblies and mechanisms to help identify and resolve operational problems.
<b>discipline</b>	A grouping of pre-analytical and post-analytical modules to ensure that samples remain in certain track areas. Disciplines are used to assign common modules such as Aliquot Module and error areas to a certain location within the laboratory.
<b>FlexRack</b>	An accessory that is used in the RackPorts and can be configured as an input or output area on a customer-specific basis. One FlexRack can hold 25 sample tubes with a tube diameter of 10.5 mm to 18 mm.
<b>GLP systems Track</b>	A modular laboratory automation system 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.
<b>Input/Output Module</b>	The central module for the input and output of sample tubes on the laboratory automation system. In addition, areas of the drawers can be configured as an archive or for loading and unloading racks.

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<b>instrument status</b>	The operational mode of an instrument that is connected to the laboratory automation system.
<b>IOM</b>	See <i>Input/Output Module</i> , page 387.
<b>laboratory automation system</b>	A track system that automates pre-analytical processing, sample handling, and delivery of samples to analyzers for sample test processing.
<b>laboratory information system</b>	Computer software and hardware used to manage order input, test sequence, and results validation.
<b>lane element</b>	A component that is composed of a plastic body and two lanes. The guiding slot in the lane element is used to guide the CARs. The track has active and passive lane elements.
<b>LAS</b>	See <i>laboratory automation system</i> , page 388.
<b>LIS</b>	See <i>laboratory information system</i> , page 388.
<b>loading area</b>	The area on a module that holds racks for routine and priority processing.
<b>logon (TSM)</b>	<p>An identifier that controls access to certain functionality. The Track Sample Manager (TSM) has three types of logons:</p> <ul style="list-style-type: none"><li>• Service</li><li>• Administrator</li><li>• Operator</li></ul> <p>Additionally, Abbott Customer Service may provide a user name and a temporary password to operators who call for troubleshooting assistance. This logon authorizes selected functions in addition to those functions allowed by the administrator logon.</p>
<b>maintenance procedure</b>	A scheduled procedure or an as-needed cleaning procedure that is performed to ensure the appropriate functionality of the system.
<b>message</b>	A touchscreen user interface element that provides information about conditions or errors of system operation.
<b>middleware</b>	The interface between the laboratory automation system and the laboratory software. The middleware receives sample information from the laboratory information system and forwards the information to the Track Workflow Manager as a route to the Track Sample Manager.
<b>module</b>	An analyzer that performs all sample-processing activities from sample aspiration to final result reporting.
<b>module status</b>	The operational mode of a module that is connected to the laboratory automation system.
<b>monitor</b>	The main interface between the operator and the modules of the GLP systems Track that allows the operator to select icons, buttons, menu commands, and other screen elements.

## Glossary

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<b>password</b>	A string of alphanumeric characters that an operator enters when the operator logs on to the system. A password is used with a user name to provide access to system functionality. A password can be a personal identification number.
<b>pipettor</b>	A device that detects, aspirates, transfers, and dispenses samples.
<b>printed circuit board</b>	A board with electrical circuits that are used to connect electronic or electrical components in electronic equipment such as a computer.
<b>RackPort</b>	An accessory in drawers that is used to position racks for sample tubes and pipettors. A RackPort can be used in module drawers.
<b>radio-frequency identification (RFID) tag</b>	An RFID tag is located on a RackPort and is used for automatic recognition on modules.
<b>robot</b>	A device that loads and unloads the CARs and FlexRacks with the robot gripper. The robot transports samples into input, output, and error areas.
<b>screen</b>	The screen is displayed on the touchscreen user interface.
<b>system log</b>	An electronic log that displays and stores a record of error-related and informational message codes that can be used to troubleshoot problems associated with system performance and results reporting. When the maximum capacity is reached, messages are replaced on a first-in and first-out basis.
<b>time-out</b>	An error that may occur for software communication functions when a defined time limit is exceeded while the operator waits for a response from a device.
<b>track</b>	A component of the laboratory automation system that is used by CARs to transport samples to the various modules. Externally supplied analyzers are connected to specific interfaces. The track structure is customizable and can be extended as required.
<b>Track Sample Manager</b>	The central software application between the laboratory automation system and the laboratory information system. The Track Sample Manager provides the modules with sample-specific information and instructions; controls and monitors sample transport on the CARs; and provides statistics on performance, throughput, and system events.
<b>track section</b>	Components of the laboratory automation system that include floor and ceiling sections and provide space for laboratory utility lines carrying electricity, water, or wastewater.
<b>Track Workflow Manager</b>	A software interface between the laboratory information system and the Track Sample Manager of the GLP systems Track. Individual sample orders are translated into pre-analytical, analytical, and post-analytical processing steps by using an algorithm.
<b>TSM</b>	See <a href="#">Track Sample Manager</a> , page 389.
<b>TWM</b>	See <a href="#">Track Workflow Manager</a> , page 389.

<b>user name</b>	A string of alphanumeric characters that an operator enters when the operator logs on to the system. The user name can be used with a password to provide access to analyzer or module functionality.
<b>window</b>	A screen element that provides more information or functions related to the screen. A window can be accessed by tapping a button on the screen. The window is displayed on top of, or in front of, the screen.

## Revision history

Document control number	Revision date	Content revised
80003968-102 DRAFT	2023-08-01	Read me first; Sections 1, 2, 3, 4, 5, 7, 8, 9, 10; Glossary

## NOTES



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