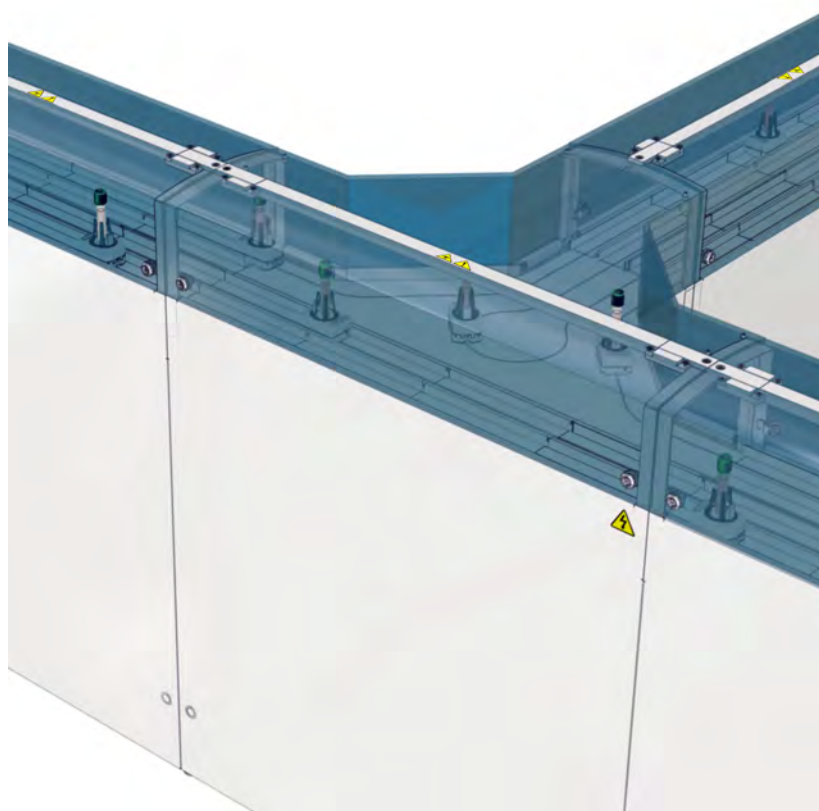




GLP systems Track

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

Table of contents

Read me first.....	7
What's new.....	8
General safety information.....	9
System security.....	10
Customer service.....	11
Intended use.....	12
Proprietary statement.....	13
Disclaimers.....	14
GLP systems Track warranty statement for USA customers only.....	15
GLP systems Track agency approvals.....	16
Intellectual Property statement.....	18
Key to symbols.....	19
Manufacturer and distributor.....	23
System documentation.....	25
Organization of the operations manual.....	26
Conventions for the operations manual.....	28
Operations manual description.....	30
Operations manual use.....	31
Section 1: Use or function.....	33
GLP systems Track overview.....	35
Communication paths.....	35
Track overview.....	37
Track sections.....	37
Lane elements.....	39
CAR overview.....	42
CAR design and function.....	42
Descriptions of CAR charge statuses.....	45
Track Sample Manager overview.....	47
Track Workflow Manager overview.....	48
Input/Output Module overview.....	49
Input/Output Module design and function.....	50
Descriptions of module statuses.....	56
Descriptions of drawer statuses.....	56
RackPorts overview.....	58
FlexRacks overview.....	59
Section 2: Installation procedures and special requirements.....	61
Transportation, installation, disassembly, and disposal.....	62
Track installation.....	63
Spiral tower installation requirements.....	63
Input/Output Module installation requirements.....	64
Typical floor loading.....	66
Input/Output Module configuration.....	68
Main menu screen (IOM).....	68

Section 3: Principles of operation.....	81
General operation.....	82
Control system.....	84
Track Sample Manager functional description.....	85
Workflow.....	85
System monitoring.....	87
Track Workflow Manager functional description.....	89
Input/Output Module operation.....	90
Section 4: Performance characteristics and specifications.....	91
Technical data.....	92
Laboratory automation system technical data.....	92
Sample bar code label technical data.....	93
Sample tube technical data.....	95
Sample processing specifications.....	98
Track technical data.....	98
CAR technical data.....	99
Track Sample Manager technical data.....	99
Track Workflow Manager technical data.....	100
Input/Output Module technical data.....	100
Section 5: Operating instructions.....	103
Start the GLP systems Track.....	104
Shut down the GLP systems Track.....	105
Perform an emergency shutdown.....	106
Log on to the Track Sample Manager (TSM).....	108
Log on to the Track Workflow Manager (TWM).....	110
Open and close the track hoods.....	112
Remove and replace the spiral entrance hoods.....	115
Open and close the spiral tower doors.....	118
Cycle power to an empty CAR.....	120
Track Sample Manager user interface.....	122
Roles and permissions (TSM).....	122
Main menu screen (TSM).....	123
Track Workflow Manager user interface.....	162
Roles and permissions (TWM).....	162
Main menu screen (TWM).....	163
Workflow screen (TWM).....	184
Master data screen (TWM).....	185
Admin screen (TWM).....	185
Input/Output Module procedures.....	187
Open and close the front and rear module covers.....	187
Cycle power to the module.....	190
Power on the module.....	191
Power off the module.....	192
Place the module online.....	193
Place the module offline.....	193
Pause the module.....	194

Deactivate pause mode.....	194
Load samples into FlexRacks.....	195
Unload samples from FlexRacks.....	197
Load analyzer-specific racks.....	198
Unload analyzer-specific racks.....	201
Section 6: Calibration procedures.....	205
Section 7: Operational precautions and limitations.....	207
Covers, hoods, and sensors.....	208
Requirements for handling the specimens.....	210
Section 8: Hazards.....	211
Operator responsibility.....	212
Safety icons.....	213
Biological hazards.....	215
Precautions.....	215
Basic safety.....	217
CAR safety.....	220
Laser safety.....	221
Spill cleanup.....	222
Requirements for decontamination.....	223
Input/Output Module safety.....	224
Section 9: Service, maintenance, and diagnostics.....	227
Cleaning and maintenance.....	228
Track cleaning.....	228
Track maintenance.....	230
CAR cleaning.....	231
CAR maintenance.....	234
Input/Output Module cleaning.....	238
Input/Output Module maintenance.....	243
Section 10: Troubleshooting.....	249
Message codes.....	250
Message code screen (IOM).....	250
Module message codes.....	251
Track Sample Manager message codes.....	286
Observed problems.....	370
Track observed problems.....	370
CAR observed problems.....	372
Track Sample Manager observed problems.....	377
Input/Output Module observed problems.....	380
Glossary.....	387

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.

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

GLP systems Track agency approvals, page 16

Intellectual Property statement, page 18

Key to symbols, page 19

Manufacturer and distributor, page 23

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 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.

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.

The information, documents and related graphics published herein (the "Information") are the sole property of Abbott Laboratories. Permission to use the Information is granted, provided that:

- the copyright notice appears on all copies;
- use of the Information is for operation of ABBOTT products by Abbott Laboratories trained personnel or informational use only;
- the Information is not modified in any way; and
- no graphics are used separate from accompanying text.

Each person assumes full responsibility and all risks arising from use of the Information herein. The Information is presented "AS IS" without warranties, either express or implied, and may include technical inaccuracies or typographical errors. Abbott Laboratories reserves the right to make additions, deletions, or modifications to the Information at any time without any prior notification.

Related information...

[Read me first](#), page 7

Disclaimers

All samples (printouts, graphics, displays or screens, etc.) are for information and illustration purposes only and shall not be used for clinical or maintenance evaluations. Data shown in sample printouts and screens do not reflect actual patient names or test results.

The Information was developed to be used by Abbott Laboratories trained personnel, by other persons knowledgeable or experienced with the operation and service of the product identified, under the supervision and with cooperation from Abbott Laboratories technical support or service representatives.

In no event shall Abbott Laboratories or its affiliates be liable for any damages or losses incurred in connection with or arising from the use of the Information by persons not fully trained by Abbott Laboratories.

No confidential relationship shall be established in the event that any user of the Information should make any oral, written or electronic response to Abbott Laboratories (such as feedback, questions, comments, suggestions, ideas, etc.). Such response and any information submitted therewith shall be considered non-confidential, and Abbott shall be free to reproduce, publish or otherwise use such information for any purposes whatsoever including, without limitation, the research, development, manufacture, service, use, or sale of products incorporating such information. The sender of any information to Abbott is fully responsible for its content, including its truthfulness and accuracy and its non-infringement of any other person's proprietary rights.

Abbott Laboratories is not engaged in rendering medical advice or services.

Updates to the Information may be provided in either paper or electronic format. Always refer to the latest documents for the most current information.

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

No part of this media may be reproduced, stored, retrieved, or transmitted in any form or by any means without the prior written permission of Abbott Laboratories.

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.

EXCEPT AS EXPRESSLY PROVIDED ABOVE, ABBOTT LABORATORIES HEREBY DISCLAIMS ALL REPRESENTATIONS AND WARRANTIES, WHETHER EXPRESS OR IMPLIED, CREATED BY LAW, CONTRACT OR OTHERWISE, INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE OR NON-INFRINGEMENT. IN NO EVENT SHALL ABBOTT LABORATORIES BE LIABLE FOR ANY INDIRECT, SPECIAL, PUNITIVE, CONSEQUENTIAL OR INCIDENTAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST REVENUES, PROFITS, OR DATA) ARISING FROM OR IN CONNECTION WITH THE USE OF THE INSTRUMENT, REGARDLESS OF WHETHER ABBOTT LABORATORIES HAS BEEN ADVISED AS TO THE POSSIBILITY OF SUCH DAMAGES.

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
--------------------	--

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 NOTE: 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
LOT	Batch code/Lot number
REF	Catalog number/List number
SN	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.
DISTRIBUTED BY	Distributed by
DISTRIBUTED IN THE USA BY	Distributed in the USA by
FOR USE WITH	For use with
	Play/Pause
PRODUCT OF GERMANY	Product of Germany
Rx ONLY	Caution: Federal law restricts this device to sale by or on the order of a physician.
UNIT	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	- General safety information - Customer service contact information - Intended use of the system
System documentation	- Content organization and conventions - Use of the operations manual
Section 1: Use or function	- GLP systems Track overview - Track overview - CAR overview - Track Sample Manager (TSM) overview - Track Workflow Manager (TWM) overview - Input/Output Module (IOM) overview - RackPorts overview - FlexRacks overview
Section 2: Installation procedures and special requirements	- Transportation, installation, disassembly, and disposal - IOM configuration
Section 3: Principles of operation	- General operation - Control system - TSM functional description - TWM functional description - IOM procedures
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	- Troubleshooting basics - Probable causes and corrective actions for message codes - Probable causes and corrective actions for observed problems
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: • Toolbar, icon, and menu items • Buttons • Commands • Lists and tabs • Dialog box titles and options
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 CAUTION signal word	Identify activities that expose the operator to potentially dangerous conditions.
IMPORTANT signal word	Advises the operator to comply with precautions to prevent a negative impact on system operations or results.
NOTE 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):

Track sections	Include floor and ceiling sections and provide space for laboratory utility lines carrying electricity, water, or wastewater.
Lane elements	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.
AccessPoints	Hold CARs and samples in place, allowing for secure sample processing.
Spirals	Provide interconnection between floors and elevated sections.
CARs	Transport the samples to the modules. The Track Sample Manager ensures that the CARs navigate smoothly in the LAS.
Input/Output Module (IOM)	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

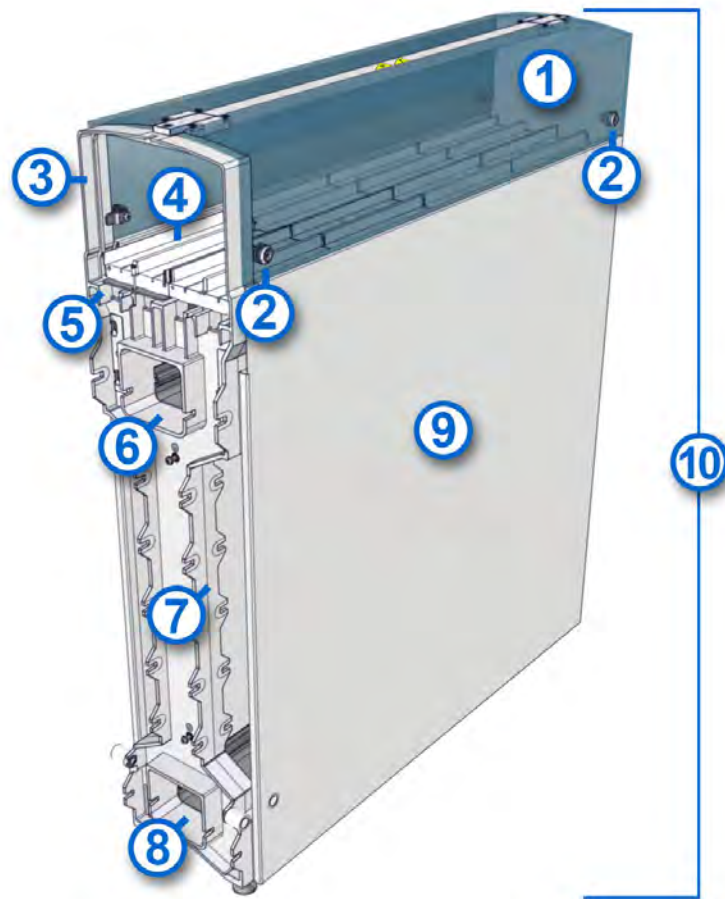
Track sections

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
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

NOTE: Accessible segments of the track have track hood locks.

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:

Cross switch	Enables CARs to switch lanes.
AccessPoint	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.
Charge lane	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.
Switch 90 divergent	Switches a CAR from the track to a module for sample processing.
Track T-Element	Allows CARs to change directions.
SpiralSwitch	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...

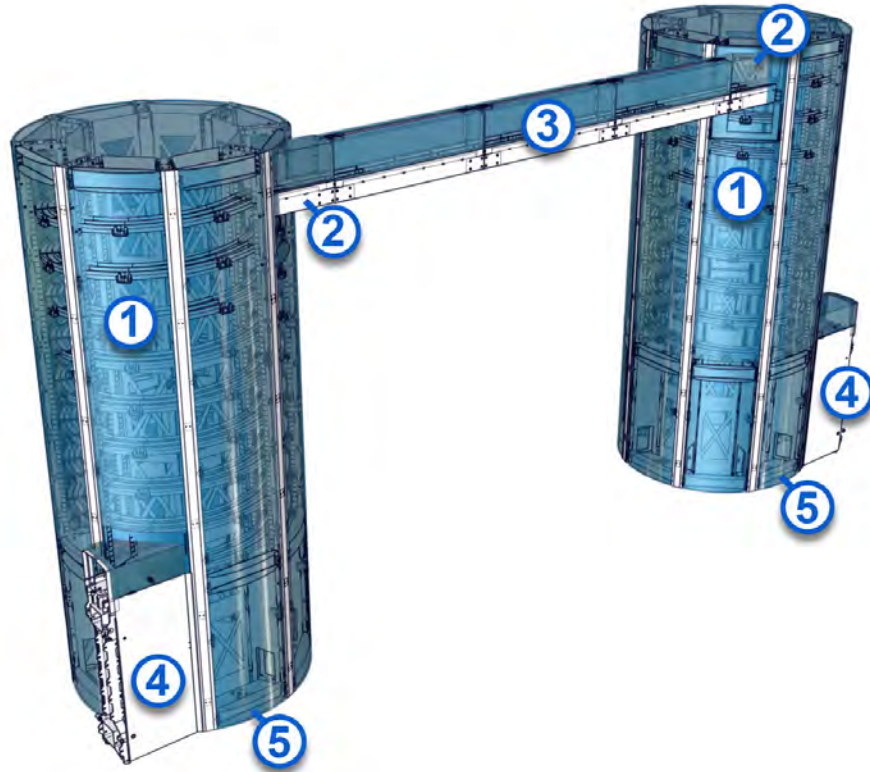
[Lane elements](#), page 39

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:

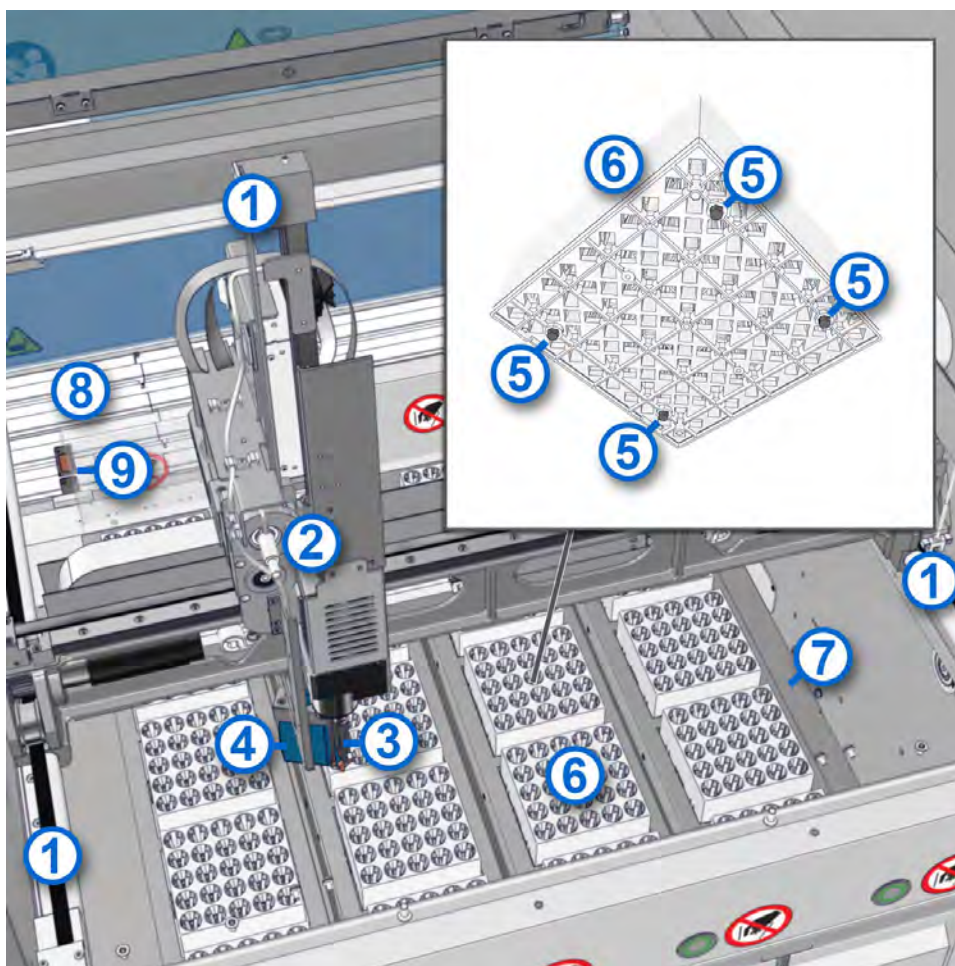
1. Rear module cover: Protects the operator from injury and keeps the loading area free from dust. The module cover can be opened from the rear.



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

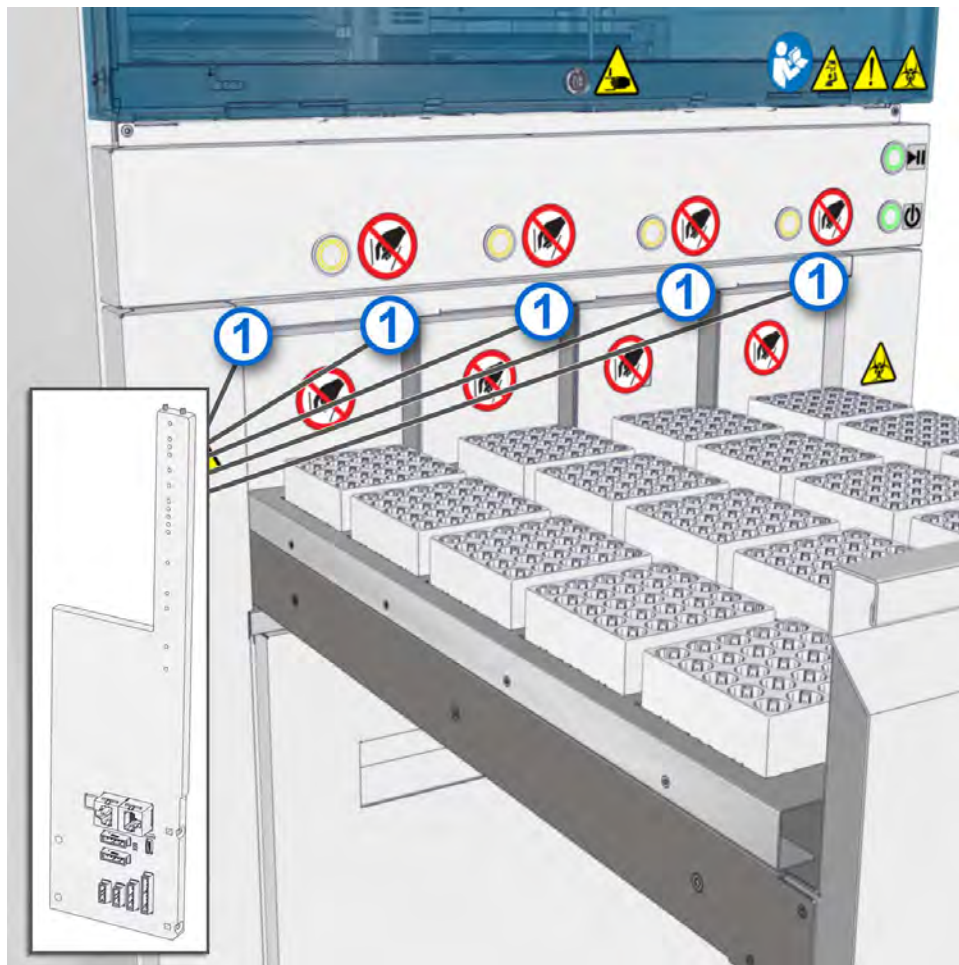


Legend:

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.

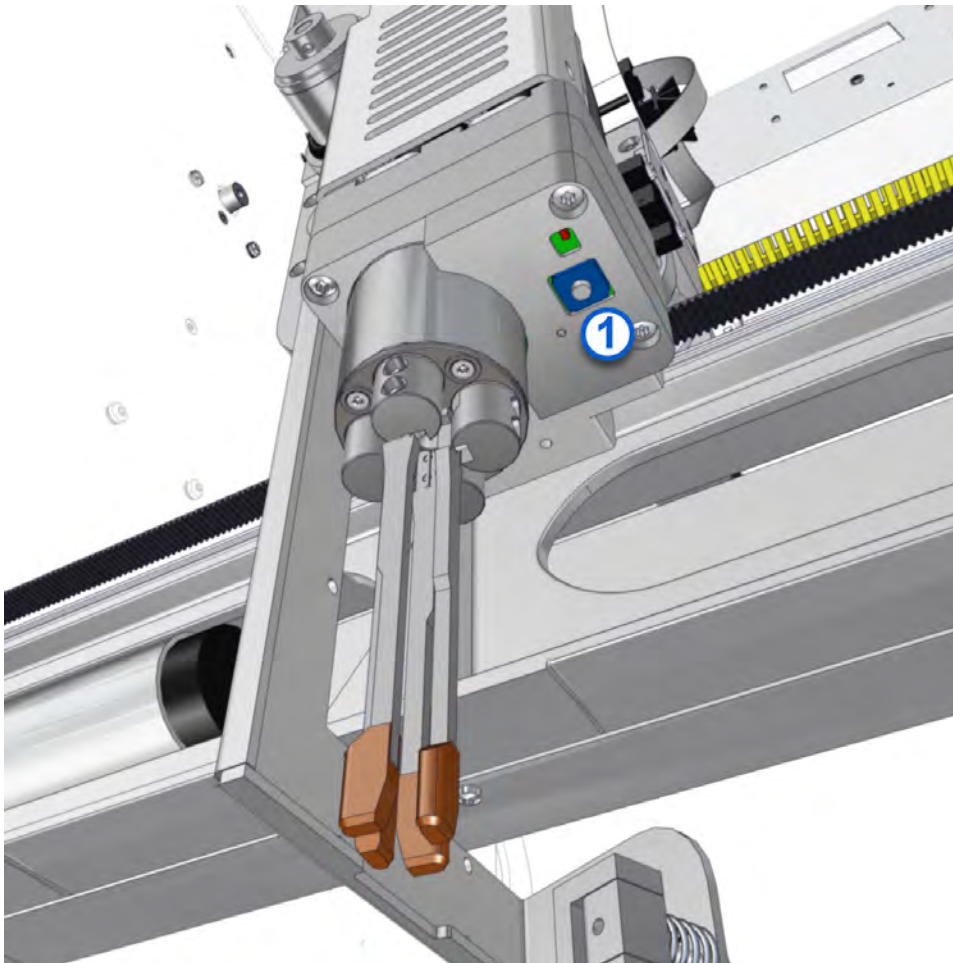
Figure 9: Photoelectric sensors



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:

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

Related information...

[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.

Green (blinking)	The module is initializing. The drawers open and close during initialization.
Green	The drawer is closed and the module is ready for operation.
Yellow (blinking)	The drawer is opening or closing.
Yellow	The drawer is fully open.
Red (blinking)	An error has occurred. The opening or closing of the drawer stops.
Red	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

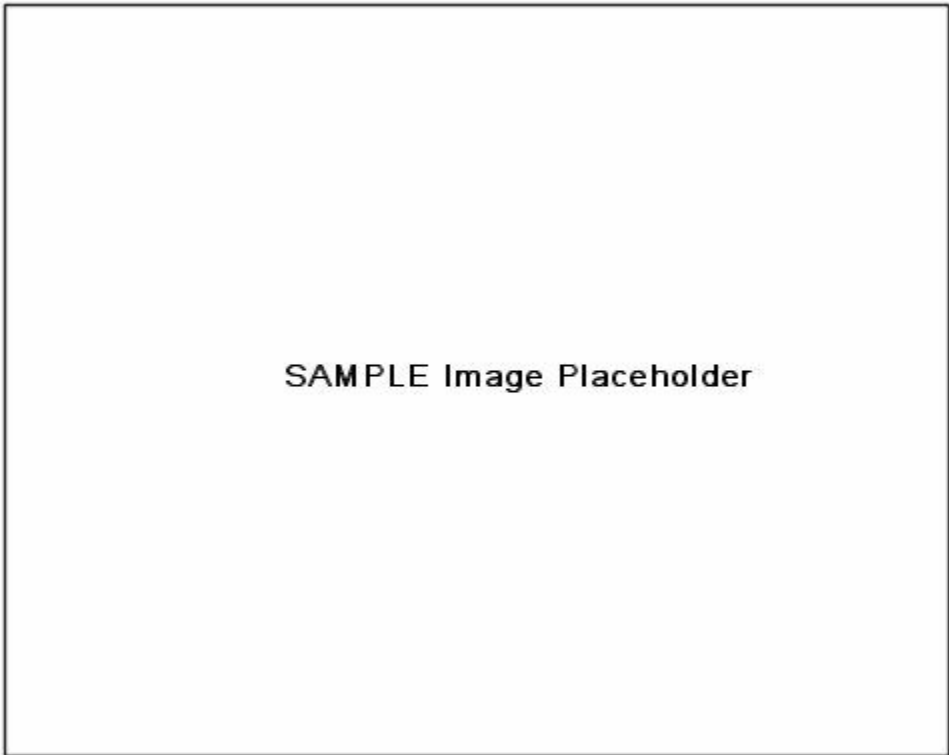
Spiral tower installation requirements

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

Evenness tolerance requirement	Permissible deviation: ± 5 mm over 15 m
Material requirement	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

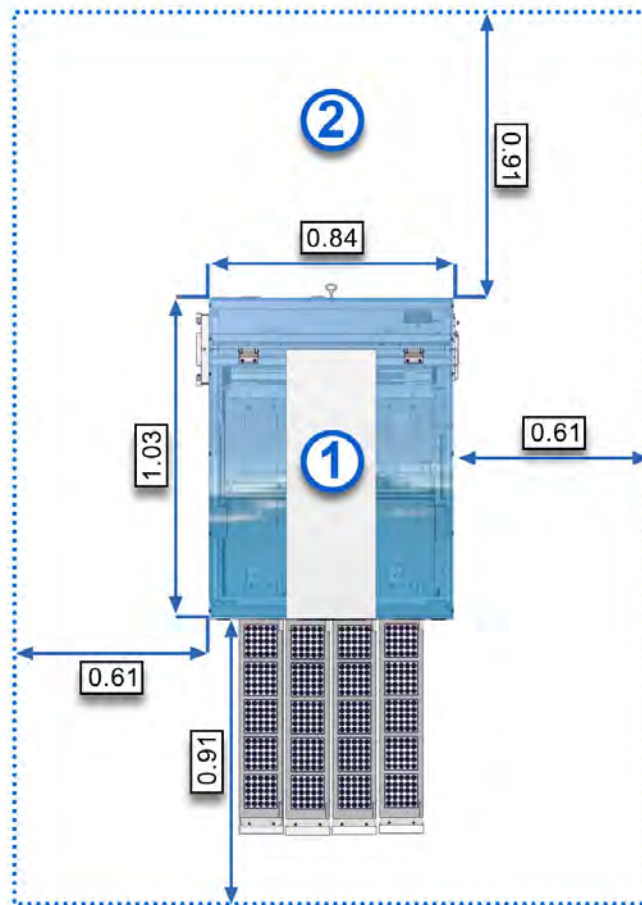
Input/Output Module installation requirements

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

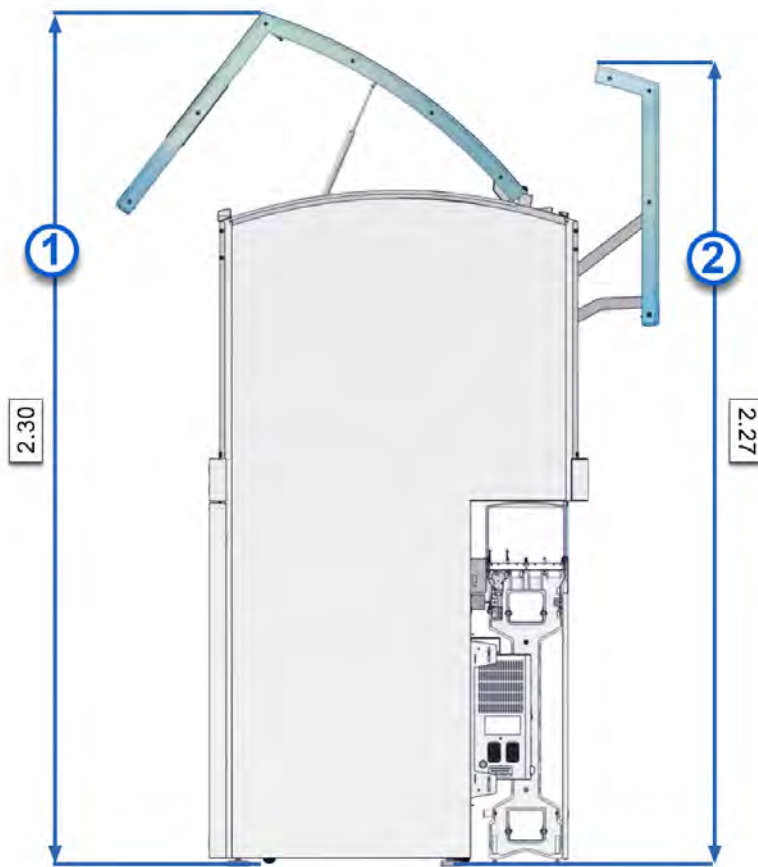
Load-bearing weight	295 kg/m ²
Evenness tolerance requirement	Permissible deviation: ± 5 mm over 15 m
Compensation with adjustable feet	Maximum of 10 mm
Material requirement	Incompressible material such as concrete

Figure 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^2 . 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^2 . 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...

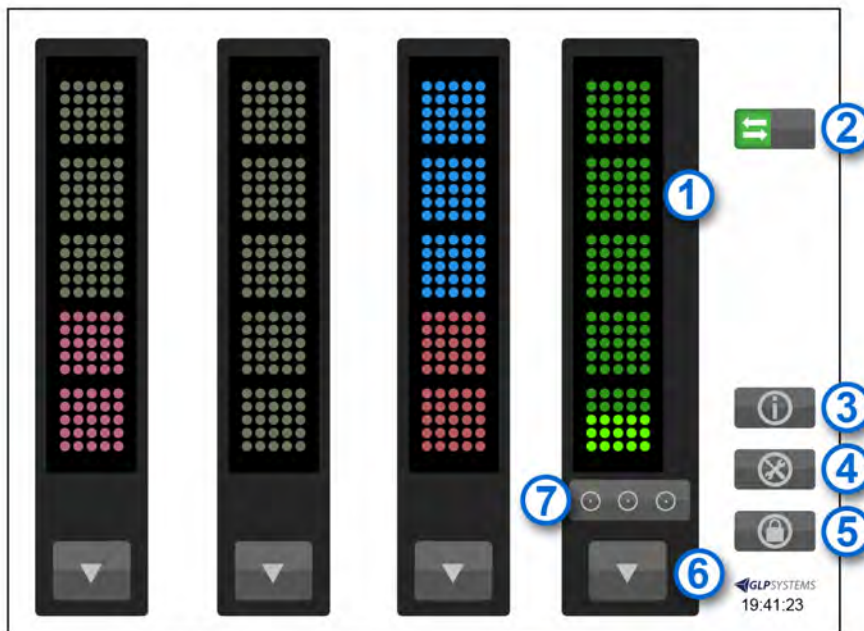
Installation procedures and special requirements, page 61

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.

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

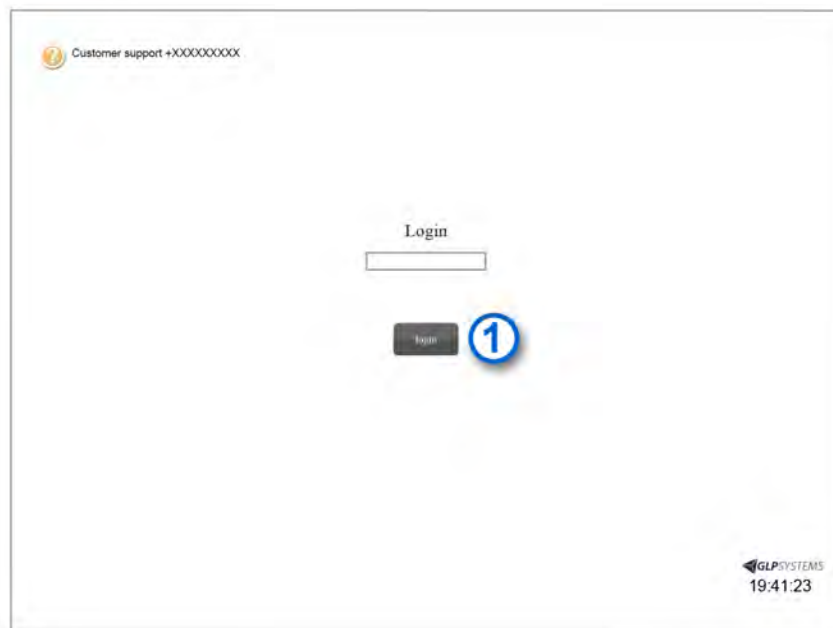
[Power on the module](#), page 191

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:

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

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

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...

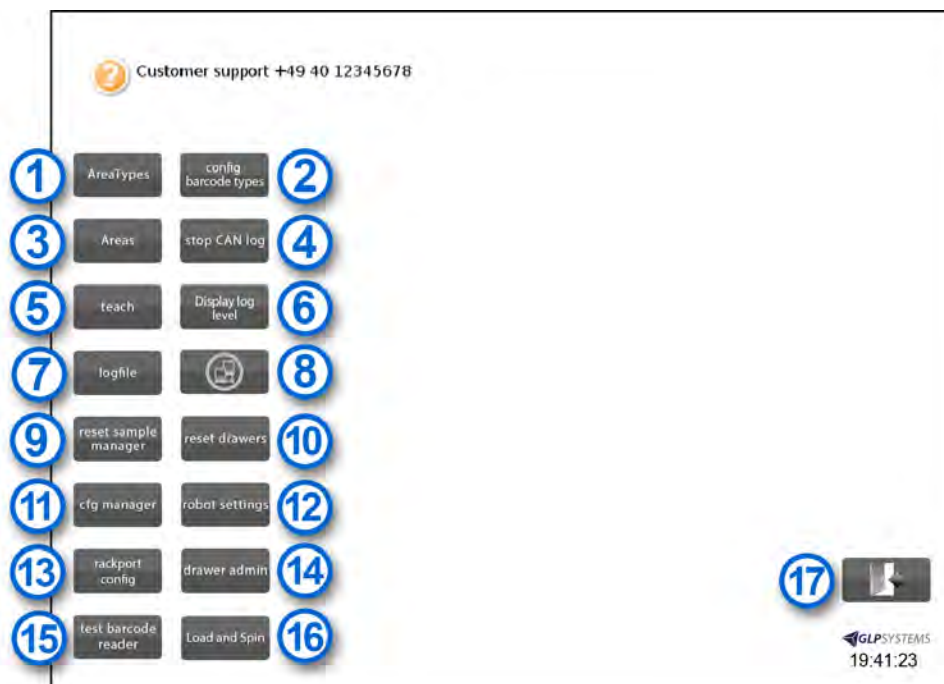
[Information screen](#), page 70

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 logfile 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
Error	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.
Input	Samples are manually placed into the input area and are distributed by the laboratory automation system.
Output	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

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:

LIS	Computer software and hardware used to manage medical testing and billing for specimens in a laboratory.
Middleware	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.
TSM	Controls sample distribution in the LAS, communicates with the segment controllers and module controllers, and locates all CARs and samples at all times.
TWM	Translates individual sample orders into pre-analytical and post-analytical processing steps by using an algorithm.
Module controller	Controls the processes in the module and communicates with TSM.
Segment controller	Manages the communication between the active lane elements and TSM. The track can have several segment controllers.
Active lane element	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

Altitude	30.8 m (100 ft) below sea level to 2000 m (6561 ft) above sea level
Ambient temperature	• During operation: 15°C to 30°C • During transport and storage: -20°C to 60°C in noncondensing environment for 30 h without loss of functionality
Relative humidity	During operation: 30% to 80%, noncondensing
Radio-frequency identification (RFID)	Frequency: 13.56 MHz ISO 15693 applied for used RFID transponder
Sound pressure level	Maximum of 65 dBA
Placement	• Install indoors only. Do not install the system near direct sunlight.

	Do not install the system near drafts from heating and cooling vents.
Storage and transport	- Keep dry. - Fragile: Handle with care.

Related information...*Technical data*, page 92*Track installation*, page 63

Sample bar code label technical data

Table 8: Sample bar code label technical data

Bar code	- Approved: - Matte paper - Maximum of one readable bar code per sample tube (excluding sample labels) - Not approved: - Gloss or coated paper - More than one bar code per sample tube (excluding sample labels)
Bar code label	- 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) - 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) NOTE: 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. IMPORTANT: 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.
Symbology	The following symbologies can be used on the laboratory automation system: - Codabar with and without check digit - Code 39 with and without check digit

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

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

Tube type	- Approved: Rounded bottom - Not approved: - Pediatric (except for Greiner Bio-One MiniCollect Microtubes) - Flat bottom - Cone bottom - Sample cup - Tube with sample cup - Ridged lip IMPORTANT: 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.
Tube material	- Approved: Plastic or synthetic - Not approved: Glass
Tube height	- Uncapped: 65 mm to 102 mm - Capped: 81 mm to 110 mm
Tube diameter	- Uncapped: 10.5 mm to 16 mm - Capped: 11.5 mm to 18 mm with at least 1 mm overhang of cap over tube external diameter NOTE: Two additional bar code labels increase maximum diameters by 0.5 mm.

Tube fill level	Maximum fill level: Distance between sample matter surface and top rim of tube is greater than 15 mm.  CAUTION: Do not exceed the maximum fill level of the sample tube. 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.
Cap type	• Approved: – Manufacturer safety caps (for example, push caps or screw caps) – GLP systems Track consumable caps (for example, ReCaps or ScrewCaps) • Not approved: – Cap with flap – Rubber stopper closure – Cap with irregular top edge – Archiving cap
Cap diameter	11.5 mm to 18.0 mm NOTE: External diameter of the cap is minimally 1 mm greater than the tube.
Cap height	Minimum of 5 mm

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
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: • Input/Output Module • Decapper Module • SAL Alinity ci-series • Buffer Module • Centrifuge Module	Greiner Bio-One MiniCollect Microtube and carrier tube are separated. For example: • Serum 450533 • Ethylenediaminetetraacetic acid (EDTA) 450530 • Carrier tube 450417 Otherwise, no processing can be performed on the LAS.



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

Current	20 amperes per phase - Maximum 230 VAC per phase
---------	--

Power	4600 watts per phase
Supply voltage	400 VAC, $\pm 10\%$; 3-phase
Supply frequency	50 Hz/60 Hz
Electrical safety parameters NOTE: Electrical safety parameters have no bearing on performance.	- Installation category: II (overvoltage category) - Pollution degree: 2

Related information...[Technical data](#), page 92[Track installation](#), page 63

CAR technical data

Table 13: CAR technical data

Approximate charging time	Recharged from 10% to 90% in 3 h or fewer
CAR capacity	- One sample tube per CAR - Total weight of sample tube: 20 g
Power source	Rechargeable lithium-ion battery
Rechargeable lithium-ion battery capacity, maximum moving time	Maximum speed level for a minimum of 8 h without recharge of lithium-ion battery
Speed profiles	- No speed: 0 mm/s on the track - Slow speed: 50 mm/s on the track with an accuracy of 15% - Normal speed: 150 mm/s on the track with an accuracy of 15% - Fast speed: 250 mm/s on the track with an accuracy of 15% - Hyperspeed: 350 mm/s on the track with an accuracy of 15%

Related information...[Technical data](#), page 92

Track Sample Manager technical data

Table 14: Track Sample Manager (TSM) technical data

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

Supported hardware environment NOTE: 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 TSM technical data.

Related information...

[Technical data](#), page 92

Track Workflow Manager technical data

Table 15: Track Workflow Manager (TWM) technical data

Platform	Java Enterprise Edition (for GlassFish application servers)
Database	PostgreSQL
Operating system	Suse Linux Enterprise operating system
Supported hardware environment NOTE: 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

Throughput	Minimum of 900 capped sample tubes per hour NOTE: The specified performance of the module is based on measurements taken in a given test environment. The actual performance may vary significantly depending on the use scenario of the laboratory automation system.
Capacity	Four drawers with 125 sample tubes each for 500 sample tubes total when a RackPort (Standard) is used NOTE: Based on the selected RackPort, the maximum quantity of sample tubes can vary.
Dimensions	80 cm (width) x 103 cm (depth) x 188 cm (height)

Weight	267 kg (587 lb)
Altitude	30.8 m (100 ft) below sea level to 2000 m (6561 ft) above sea level
Floor surface load	Minimum of 500 kg/m ²
Sound pressure level	Maximum of 65 dBA
Waste heat	Average at full capacity: 378 kJ/h
Supply voltage	220 VAC to 230 VAC, $\pm$ 10%
Supply frequency	50 Hz/60 Hz
Power	• Nominal: 93 W • Peak: 343 W • 406 VA Max

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

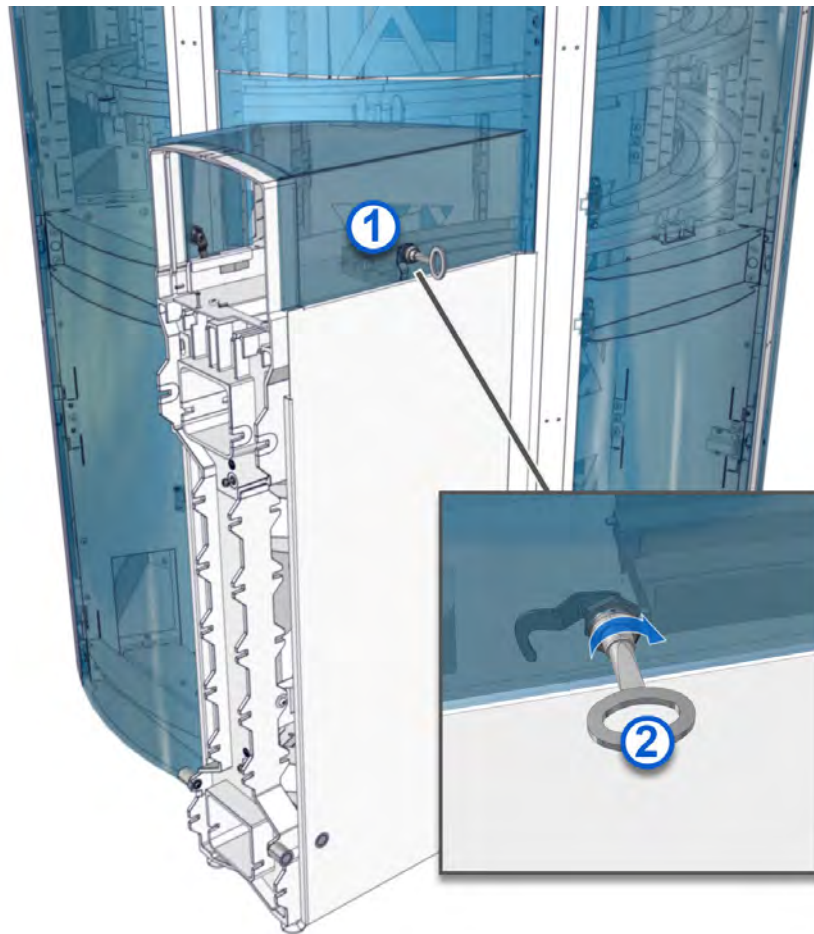
Perform this procedure to remove and replace the spiral entrance hoods.



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.

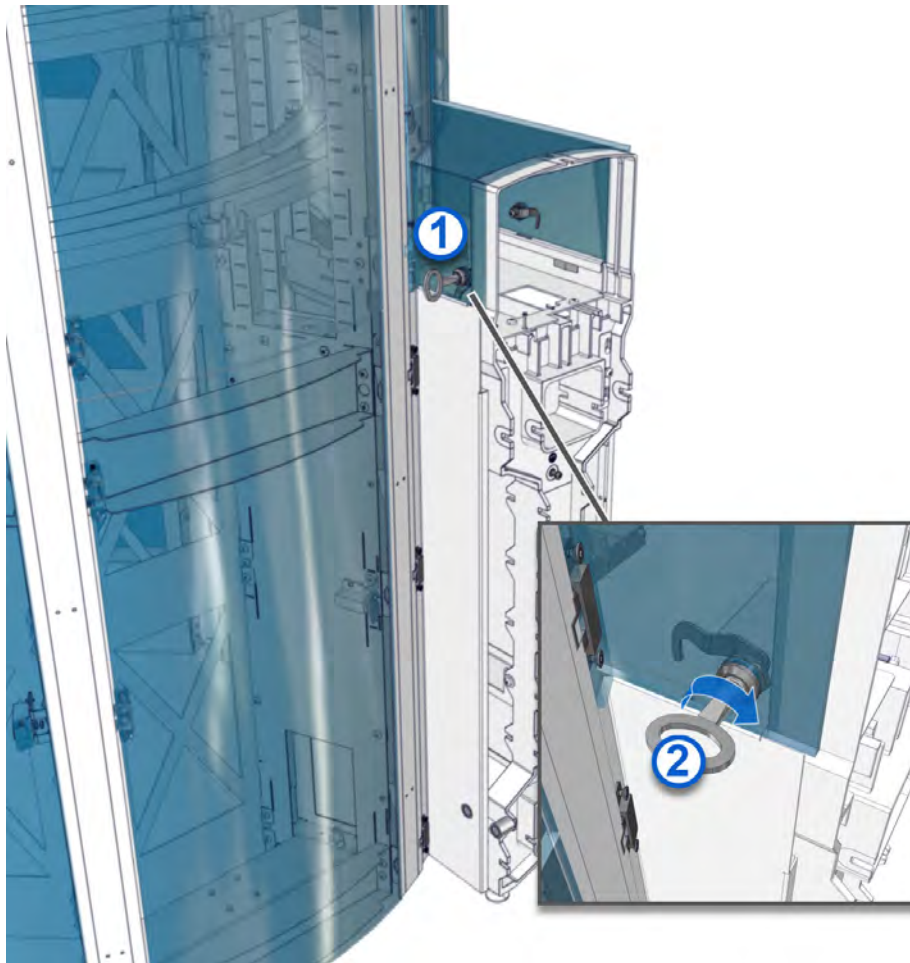
1. To unlock the spiral entrance hood, insert the key [2] into the front lock [1] and turn clockwise.

Figure 24: Spiral entrance hood front lock and key



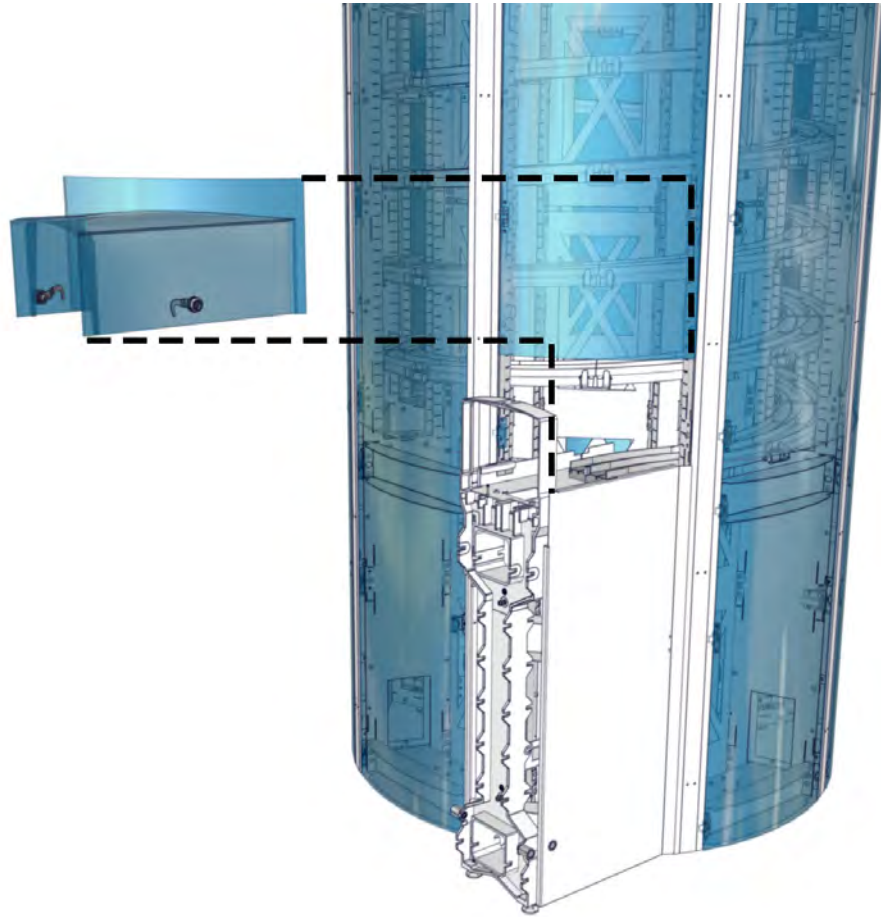
2. Insert the key [2] into the rear lock [1] and turn clockwise.

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

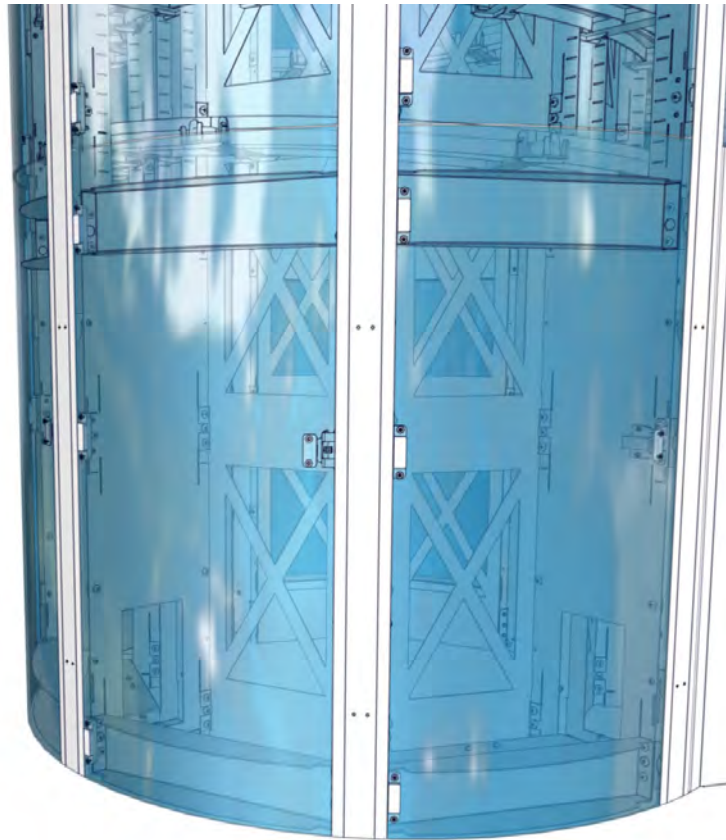
Perform this procedure to open and close the spiral tower doors.



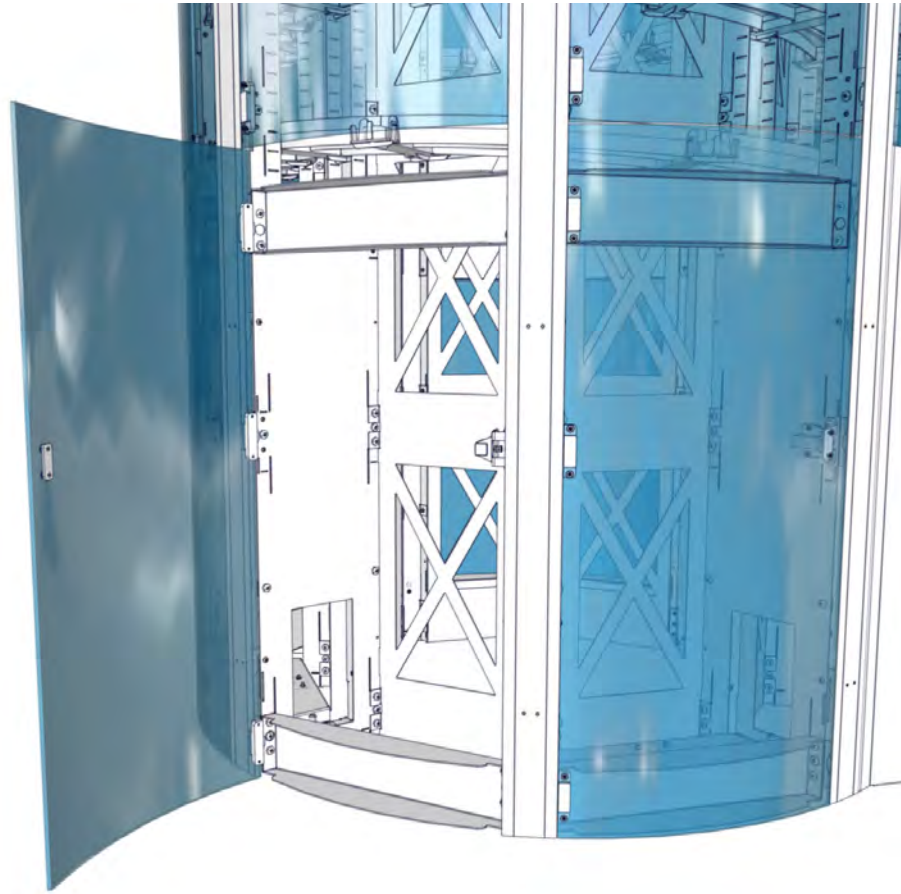
CAUTION: Mind or watch your hands. Spiral tower doors can be opened and closed **only** by a trained operator. Use caution when opening and closing spiral tower doors.

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:

Service	Service technicians
Administrator	A well-trained user who is responsible for administrating the track system
Operator	Most general users of TSM
Monitor	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 Permissions not granted: Controller	x Permissions not granted: Administrator

Function or menu item	Service	Administrator	Operator
		- Segment controller information - AccessPoint and switch configuration - Reset	- Controller → Module controller tab - Track → Circle → Change name - Routing Engine → Clear messages - Operation mode → Change mode
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

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

User	Displays the operator or administrator logged on.
-------------	---

Track layout	Displays the track layout document name.
TSM version	Displays the TSM version.
Operation mode	Displays the current operational status: Standby, Test, Disconnected, or Module Data Recovery.
Local time	Displays the time and time zone settings.
License	Displays the license for TSM.
Recovery backup status	Displays the recovery backup status. 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. NOTE: If the recovery backup status remains red, contact an Abbott Laboratories representative or an authorized service representative.
Sample cleanup status	Displays the sample cleanup status. 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.
Message cleanup status	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

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

Controller overview	Displays lists of all modules, segments, and analyzers.	
Filter	Displays a text box that is used to search the controllers by ID, segment number, module name, and module type.	
With error	Displays a check box that is used to show only controllers with errors.	
CAR need	Displays a check box that is used to show only controllers with CAR need.	
Controller type	Displays the controller type:	
	Segment	The segment controller overview displays a list of all segments.
	Module	The module controller overview displays a list of all modules.
Module type	Displays the module type.	
ID	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.	
Name	Displays the module name and number.	
Status	Displays the controller status of the modules and segments:	
	Green	• The segment is connected and online. • The module is connected and online, or is in pause mode.

	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.
-----------	--------------------------

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

Track element status tab

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

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.

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

ID / Name	Displays the module name and ID.								
Connection	Displays the connection number of the module.								
Status	Displays the controller status of the module: <table> <tr> <td>Green</td><td>The module is connected and online, or is in pause mode.</td></tr> <tr> <td>Yellow</td><td>The module is connected but offline.</td></tr> <tr> <td>Red</td><td>The module is not connected or an error has been detected.</td></tr> <tr> <td>Gray</td><td>The module is powered off or has been manually disabled.</td></tr> </table>	Green	The module is connected and online, or is in pause mode.	Yellow	The module is connected but offline.	Red	The module is not connected or an error has been detected.	Gray	The module is powered off or has been manually disabled.
Green	The module is connected and online, or is in pause mode.								
Yellow	The module is connected but offline.								
Red	The module is not connected or an error has been detected.								
Gray	The module is powered off or has been manually disabled.								
Location	Displays the location of the module.								
CAR need	Displays the CAR need of the module.								
Circle status	Displays the circle status of the module: <table> <tr> <td>Green</td><td>CARs can enter the circle.</td></tr> <tr> <td>Yellow</td><td> The circle is full. No more CARs can enter the circle. NOTE: A CAR outside the circle can enter the circle only if a CAR inside the circle leaves. </td></tr> </table>	Green	CARs can enter the circle.	Yellow	The circle is full. No more CARs can enter the circle. NOTE: A CAR outside the circle can enter the circle only if a CAR inside the circle leaves.				
Green	CARs can enter the circle.								
Yellow	The circle is full. No more CARs can enter the circle. NOTE: A CAR outside the circle can enter the circle only if a CAR inside the circle leaves.								
Restores / Disposals	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.								
CAR priority	Displays the empty CAR priority for the module:								

	Low	One CAR for each module
	Normal	Two CARs for each module (two times as many CARs as low priority)
	High	Three CARs for each module (three times as many CARs as low priority)
Empty CAR limit	Displays the empty CAR limit status for the module:	
	Green	The module is approached by empty CARs.
	Red	The module has reached the configured empty CAR limit. The module cannot receive empty CARs.
Interface	Displays the software interface version.	
Error	Displays a text box with a magnifying glass icon.	
Product code	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

ID	Displays the track element ID.
Status	Displays the status sent by the track element:
	Green The track element is online.
	Red The track element has an error.
Err#	Displays the number of errors detected in the last hour.
Type	Displays the track element type.
2ID	Displays the secondary ID of the track element.
CAR	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

Name	Displays the area name.						
Status	Displays the area status: <table> <tr> <td>Green</td><td>The area is active.</td></tr> <tr> <td>Red</td><td>The area is inactive.</td></tr> <tr> <td>Gray</td><td>The area is disabled.</td></tr> </table>	Green	The area is active.	Red	The area is inactive.	Gray	The area is disabled.
Green	The area is active.						
Red	The area is inactive.						
Gray	The area is disabled.						
Type	Displays the area type.						
Diam.	Displays the sample tube diameter supported by the module.						
2ID	Displays the secondary ID of the track element to which the area is accessible.						
Cap.	Displays the maximum capacity of samples in the area.						
Fill level	Displays the fill level of the area: <table> <tr> <td>Blue</td><td>Samples are present in this area.</td></tr> <tr> <td>Yellow</td><td>Samples are routed for this area.</td></tr> </table>	Blue	Samples are present in this area.	Yellow	Samples are routed for this area.		
Blue	Samples are present in this area.						
Yellow	Samples are routed for this area.						
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.

Components tab

Displays the subcomponents of a module controller.

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

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.

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)

Name	Displays the circle name. The Track Sample Manager sets a default name that the administrator can change.				
Relevant switches	Displays the node IDs of all switches whose default positions define the circle boundaries.				
Modules in circle	Displays the module IDs of the modules in the circle.				
Status	Displays the status of the circle: <table><tr><td>Green</td><td>CARs can enter the circle.</td></tr><tr><td>Yellow</td><td>The circle is full. No more CARs can enter the circle.</td></tr></table>	Green	CARs can enter the circle.	Yellow	The circle is full. No more CARs can enter the circle.
Green	CARs can enter the circle.				
Yellow	The circle is full. No more CARs can enter the circle.				
CAR limit	Displays the maximum number of CARs permitted in the circle.				
CARs in	Displays the number of CARs currently in the circle.				
CARs to	Displays the number of CARs approaching the circle that cannot turn back.				

Function buttons

Update	Refreshes the circle data. Full track circles are displayed in the traffic jam view of the monitoring windows.
Save	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

Level Displays a drop-down list that is used to change the building story or level of the track layout.

Magnifying glass icons Display two icons that are used to zoom in and zoom out of the track layout.

Circle Displays a drop-down list that is used to select a circle name.

NOTE: This element is displayed only when the circle is on the level currently being viewed.

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

NOTE: 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

Type Displays a drop-down list that is used to select the statistical data by area type or module type.

Area Displays a drop-down list that is used to select the statistical data by the configured areas.

Element Displays a drop-down list that is used to select the statistical data by the track elements.

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

Function buttons

Export	Exports and downloads data to an Excel file.
Update	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.

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

Function buttons

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

Module tab

Displays the version information of modules and their components.

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

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

Function buttons

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

CAR tab

Displays software and hardware versions, and CAR operations data.

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

Function buttons

Update	Refreshes the screen.
---------------	-----------------------

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:

Status	Green	RE is connected.
	Red	RE is disconnected.
Local address	Displays the local address.	
Remote address	Displays the remote address.	

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

Status	Green	RE is connected.
	Red	RE is disconnected.
Local address	Displays the local address.	
Remote address	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.

Disconnected	TSM is disconnected from the Routing Engine (RE) and track.
Module Data Recovery	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

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

Barcode	Displays a text box that is used to enter the sample bar code. NOTE: The bar code number is order specific or sample specific and can be found on the laboratory information system, for example.
Sample no	Displays a text box that is used to enter the Track Sample Manager (TSM) sample number. NOTE: 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

Search	Displays a list of search results. 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)

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

Elements

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

Function button

Close	Closes the screen.
--------------	--------------------

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

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

Progress tab

Location	Displays the location of the sample.
Module / Area	Displays the instrument and area.
Sector	Displays the sector number.
Rack / Pos.	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.

Origin	Displays the origin of the order.
Area options	Displays the area.
Start	Displays the start date and time.

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

Target area options	Displays all target areas of the sample.														
Start	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.														
Location	Displays the starting location of the sample when the sample approaches a specific target area and when the sample reaches the target area: • A CAR with a module ID • A CAR at a switch with a node ID • A module ID and an area														
Target / Activity	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>Module identifier / Area</td><td>This target area is sent by the Track Workflow Manager.</td></tr> <tr> <td>CAR removed / in jam</td><td>The CAR is detected as removed or as stuck in a traffic jam.</td></tr> <tr> <td>Circling</td><td>The sample on the CAR cannot reach a target.</td></tr> <tr> <td>Processing</td><td>The sample is being processed on a module.</td></tr> <tr> <td>Target evaluation</td><td>The next target for the sample is currently calculated.</td></tr> <tr> <td>Waiting</td><td>The sample is waiting.</td></tr> <tr> <td>Weighing</td><td>The sample is currently on the scale.</td></tr> </table>	Module identifier / Area	This target area is sent by the Track Workflow Manager.	CAR removed / in jam	The CAR is detected as removed or as stuck in a traffic jam.	Circling	The sample on the CAR cannot reach a target.	Processing	The sample is being processed on a module.	Target evaluation	The next target for the sample is currently calculated.	Waiting	The sample is waiting.	Weighing	The sample is currently on the scale.
Module identifier / Area	This target area is sent by the Track Workflow Manager.														
CAR removed / in jam	The CAR is detected as removed or as stuck in a traffic jam.														
Circling	The sample on the CAR cannot reach a target.														
Processing	The sample is being processed on a module.														
Target evaluation	The next target for the sample is currently calculated.														
Waiting	The sample is waiting.														
Weighing	The sample is currently on the scale.														
Result	Displays the sample results:														

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

Barcode	Displays a text box that is used to search by the bar code.
Sample no	Displays a text box that is used to search by the sample number.
Entry from	Displays a text box that is used to search for a sample on the track by the search start date.
Entry to	Displays a text box that is used to search for a sample on the track by the search end date.
Error code	Displays a drop-down list that is used to search by an error code.
Priority	Displays check boxes that are used to search by the priority: • Emergency

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

Status

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

Active	The Track Sample Manager (TSM) is controlling and processing the sample.
Regularly removed	The sample has been removed from an output area for further manual processing.
Disposed	The sample has been disposed from storage.
Unknown	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.

Area	Displays a drop-down list that is used to search by a target area or a processed area.
Target area	Displays an option.
Processed area	Displays a selected option.
Processed from	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.

Date of entry	Displays the entry date.
Status	Displays the status.
Location	Displays the current location.
Target area	Displays the target area.
User	Displays the operator.
Count	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

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

Function button

Update	Refreshes the list.
---------------	---------------------

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

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

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

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

Battery	Displays the lithium battery percentage of the CAR.
Target	Displays the target of the CAR.
Min.left	Displays the remaining minutes.
Last position	Displays the last location of the CAR.
Sample	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.
Error	Displays the error code for the CAR.
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 on the system.
Request to	Displays a drop-down list that is used to select a maintenance lane.

Function buttons

Request	Requests a CAR to send to a maintenance lane.
Search	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

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

Function button

Update	Refreshes the screen.
---------------	-----------------------

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

CAR count	Displays the number of CARs.
Target area	Displays the target area.
Target module	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. • JSON notification information is not displayed on the Sample details screen (Run → Sample search → Sample details). • The Clear messages column is not available (Run → Connections → Clear messages). • No authorization to edit the settings of operators with service role is available. • No authorization to change the following values:

Role	Description
	– (Admin → Timer → Service) – (Admin → Parameters → Service)
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

Language	Displays the language selected.
User name	Displays the operator logged on.
Log off button 	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

Order ID	Displays a text box that is used to search by the order ID.
Sample ID	Displays a text box that is used to search by the sample ID.
Sample status filter	Displays the following options that are used to search by the sample status: • 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

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

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

Routing history tab

Displays the sample details for routing history information.

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

Production laboratory	Displays the production laboratory.
Requesting doctor	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

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

Function button

Close	Closes the flyout.
--------------	--------------------

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

Automatic refresh	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.
Manual refresh	Refreshes the messages manually. The start date and end date can be selected. The date range is restricted to 24 hours.
Start	Enter the start date of the message.
End	Enter the end date of the message.
Filter	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.
Group	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 Count column. The grouping is formed on the basis of all messages displayed in the table.

Messages table area

Count	Displays a column when message grouping according to type is active. The number of messages of the same type is indicated. Selecting the Count column expands the messages group, displaying all older messages of the group. Deselecting the Group check box displays all messages, and the Count column is no longer displayed in the table.						
ID	Displays the message ID.						
Time	Displays the time the message was created						
Priority	Displays the priority of the message: <table><tr><td>Green</td><td>Informational message</td></tr><tr><td>Yellow</td><td>Warning message</td></tr><tr><td>Red</td><td>Error message</td></tr></table>	Green	Informational message	Yellow	Warning message	Red	Error message
Green	Informational message						
Yellow	Warning message						
Red	Error message						
Type	Displays the message type with number and text.						
Text	Displays the detailed message description.						
Instrument	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.						
Sample	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.						
Order	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.						
Function button							
Refresh	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

Filter	Displays a text box that is used to enter the expression to filter instruments.
Disabled instruments only	Displays a check box that is used to view the disabled instruments only.
With disabled tests only	Displays a check box that is used to view the instruments with disabled tests only.

Instrument statuses 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.
Name	Displays the instrument name.
Type	Displays the instrument type.
Areas	Displays the areas associated with the instrument.
TSM status	Displays the Track Sample Manager status.
Tests (disabled/all)	Displays the number of disabled tests and the number of all tests.
Dis-/enable tests	Displays an icon that is used to toggle between disable tests and enable tests.

Function buttons

Refresh	Refreshes the screen.
Cancel	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.

Filter	Displays a text box that is used to search for individual analyses if they have been assigned a type of analysis.
Disabled tests only	Displays a check box that is used to view the disabled tests only.

Test statuses by instrument table area

TWM status	Displays the status of the Track Workflow Manager.
Test code	Displays the test code.
Test	Displays the test name.
Instrument	Displays the instrument name.

Areas	Displays the areas associated with the test.
TWM status (instrument)	Displays the status of the Track Workflow Manager by instrument.
TSM status (instrument)	Displays the status of the Track Sample Manager by instrument.

Function buttons

Refresh	Refreshes the screen.
Cancel	Cancels the changes.
Save	Saves the changes.

By type of analysis tab

Displays the Test status screen by type of analysis.

Type of analysis	Displays a drop-down list that is used to select the type of analysis.
Filter	Displays a text box that is used to enter the expression to filter tests.

Test statuses by type of analysis table area

Test code	Displays the test code.
Test	Displays the test name.
Instrument name	Displays the analyzer status.
Areas	Displays the areas associated with the instrument.

Function buttons

Refresh	Refreshes the screen.
Cancel	Cancels the changes.
Save	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.

- 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

Interface name	Displays the interface name.	
Connection direction	Displays the connection direction:	
	Incoming	For laboratory information system (LIS) and Track Sample Manager (TSM)
	Outgoing	For LIS and TSM
Connection status	Displays the connection status:	
	Green	The interface is connected.
	Red	The interface is not connected.
Connection identifier	Displays the connection identifier.	
Protocol version	Displays the protocol version.	
Local IP with port	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.

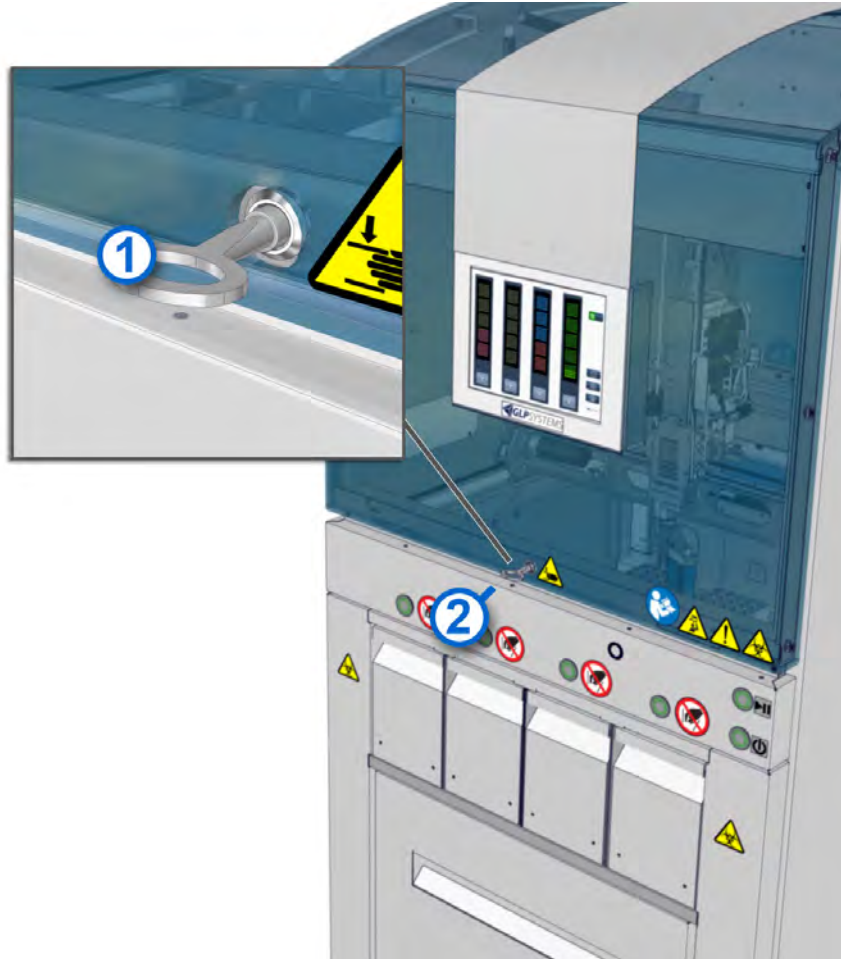


CAUTION: Mind or watch your hands. The front and rear module covers can be opened and closed **only** by a trained operator. Finger pinches can occur between two adjacent modules if module covers are closed by holding their sides. Use caution when opening and closing the front and rear module covers.

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



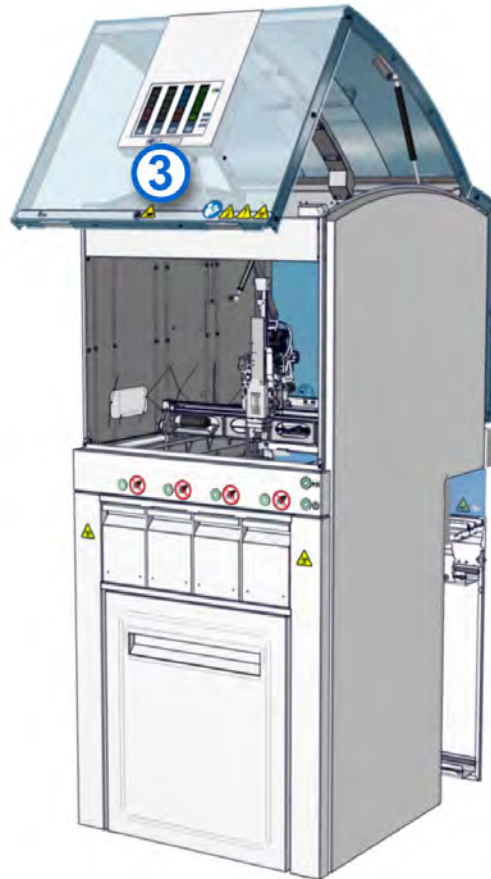
2. While turning the key [1] counterclockwise a quarter turn, begin lifting the front module cover [3] or rear module cover.

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.

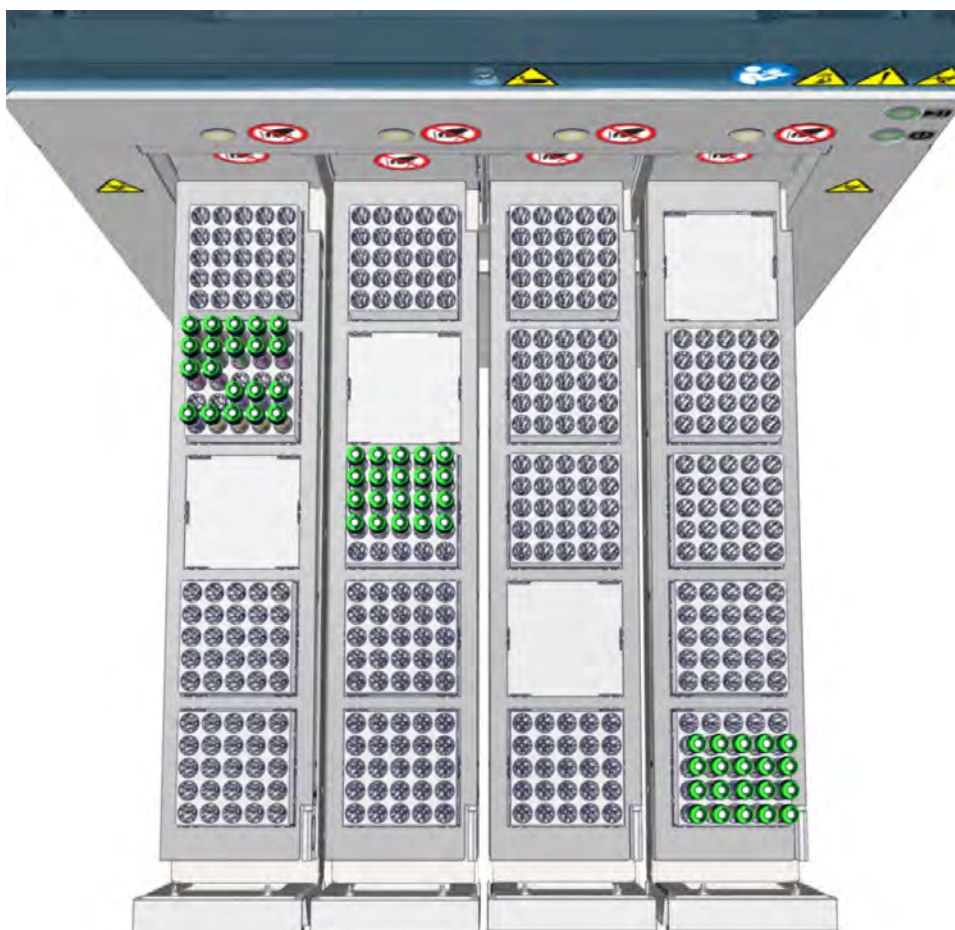


CAUTION: Risk of cross contamination. The placement of 16 mm x 100 mm sample tubes next to each other in FlexRacks can cause robot gripper errors. These errors can cause cross contamination of sample matter, resulting in delayed or incorrect results. For any affected samples, the results should be assessed 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.

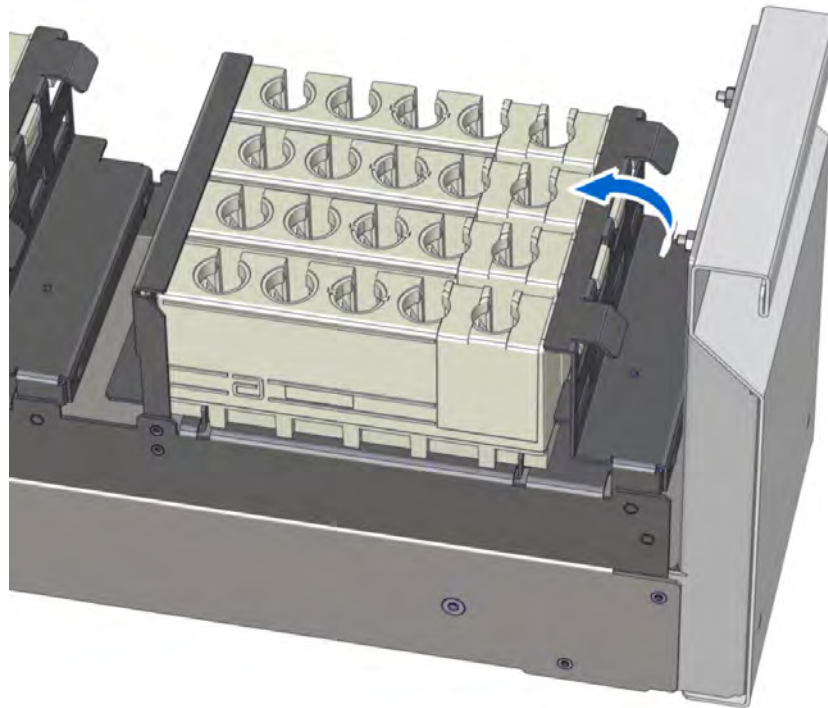


CAUTION: A minimum clearance between the module and the operator is required to avoid injury when opening the drawer.

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.

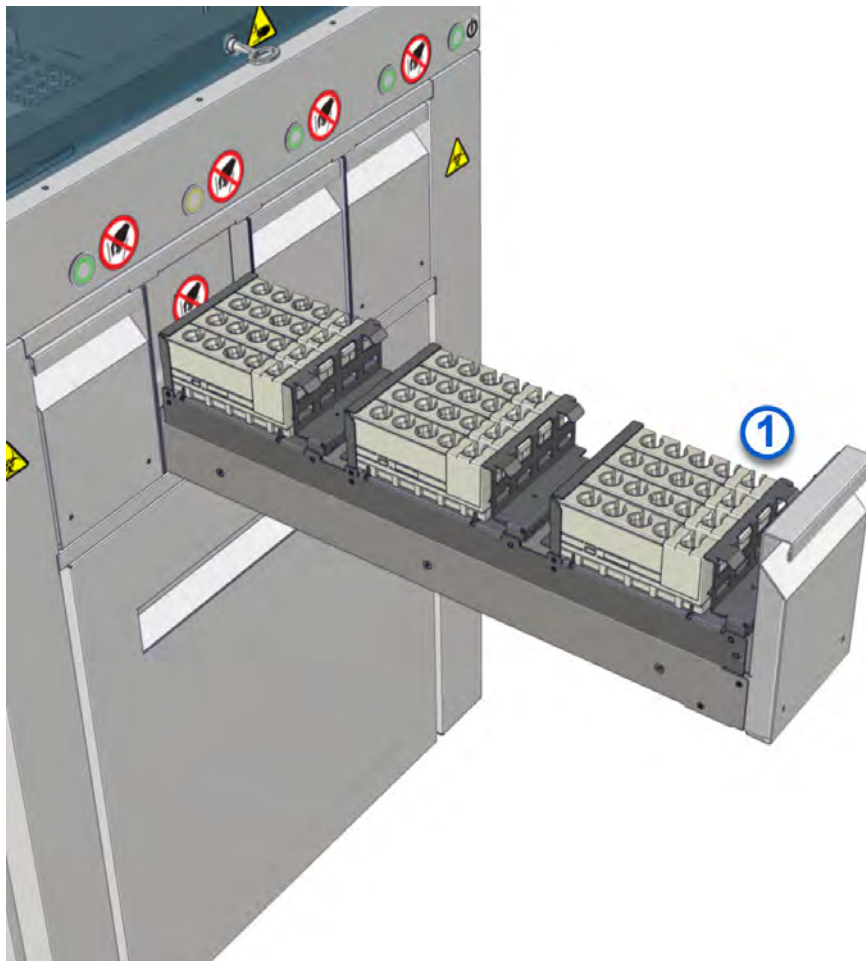
Figure 36: Locking empty analyzer-specific racks

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.

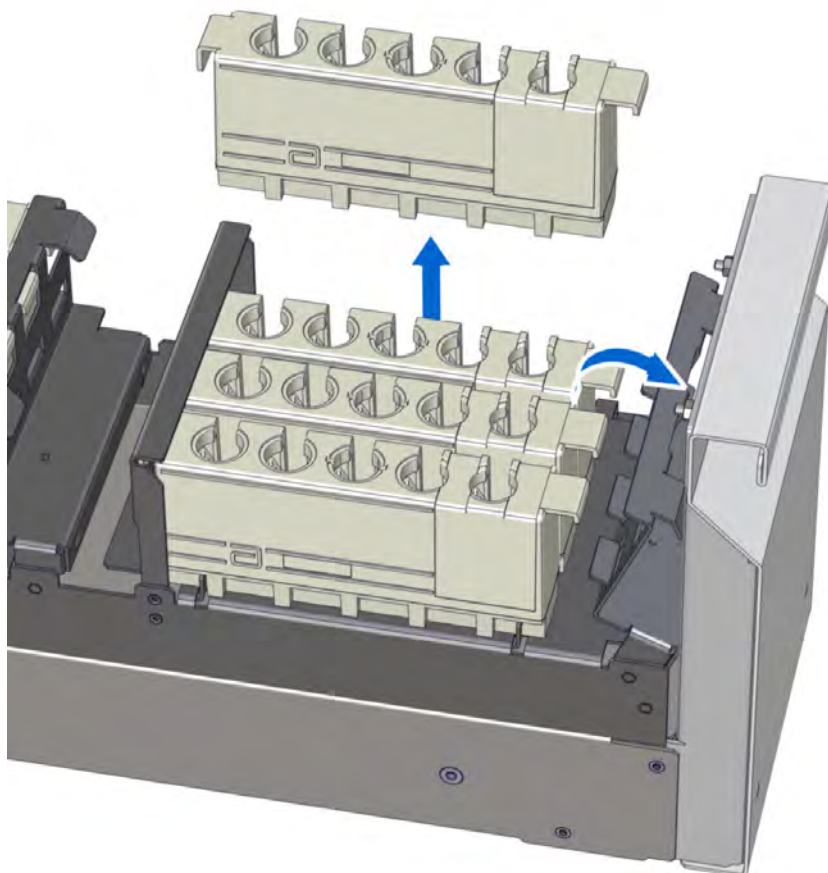


CAUTION: A minimum clearance between the module and the operator is required to avoid injury when opening the drawer.

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.

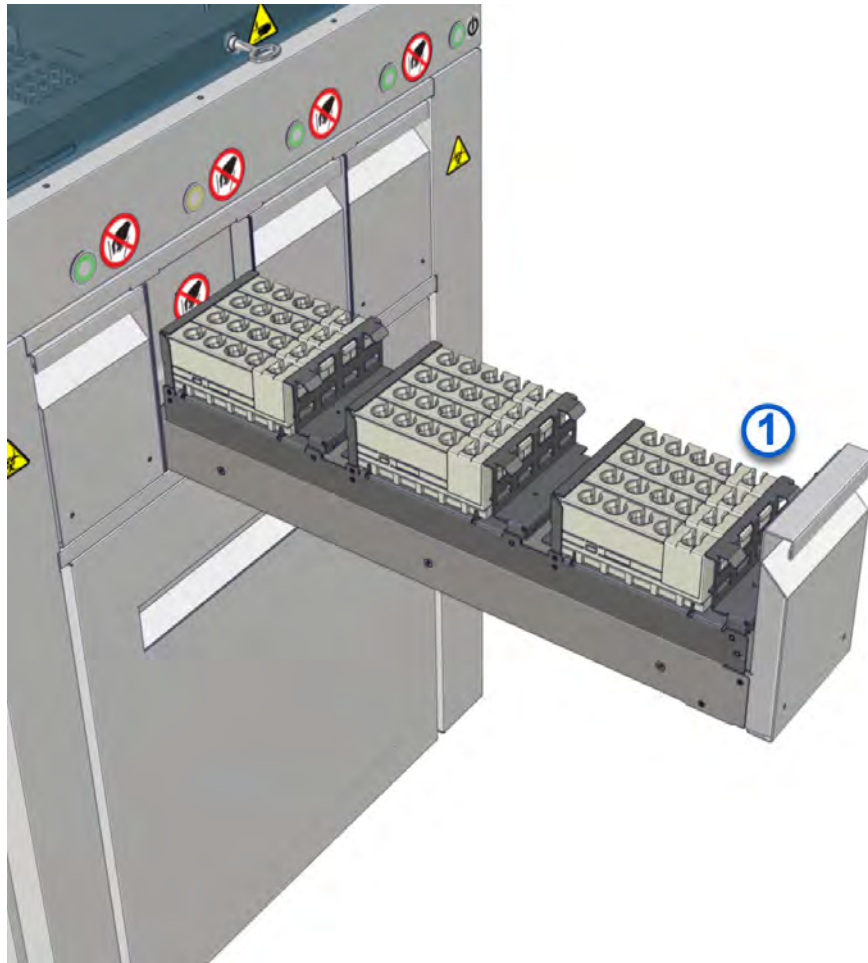
2. Unlock the analyzer-specific rack in the RackPort.

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

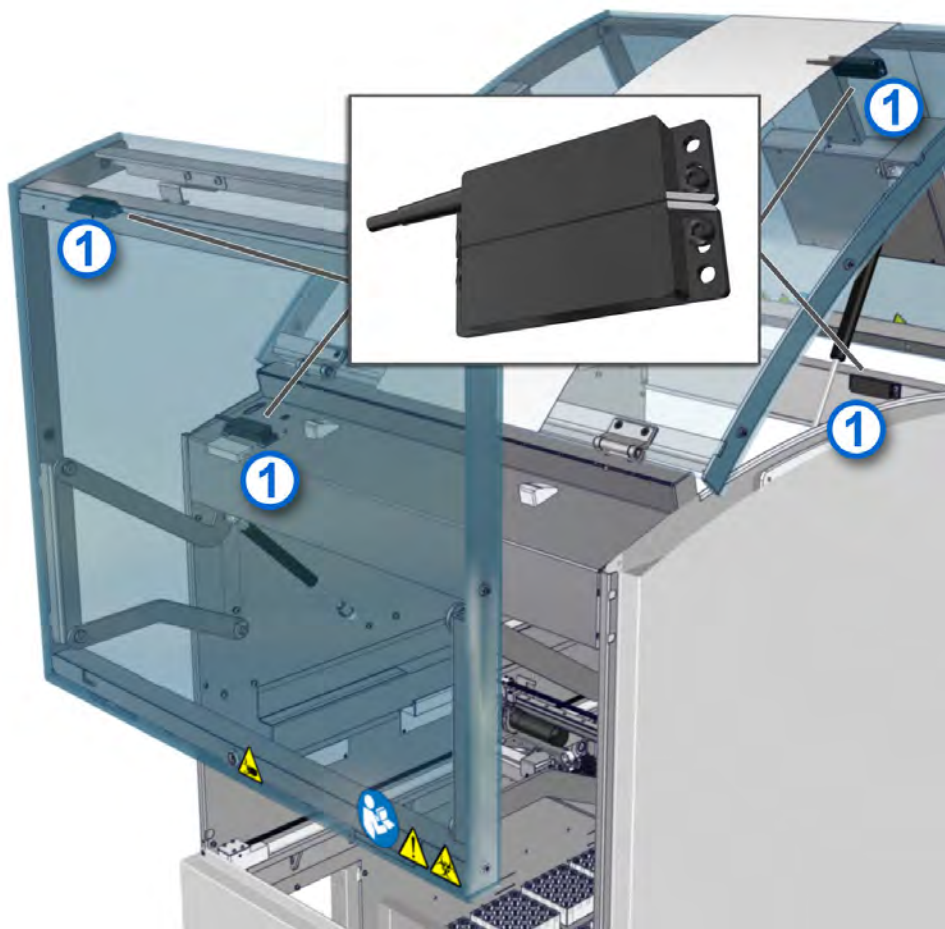
General safety information, page 9

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



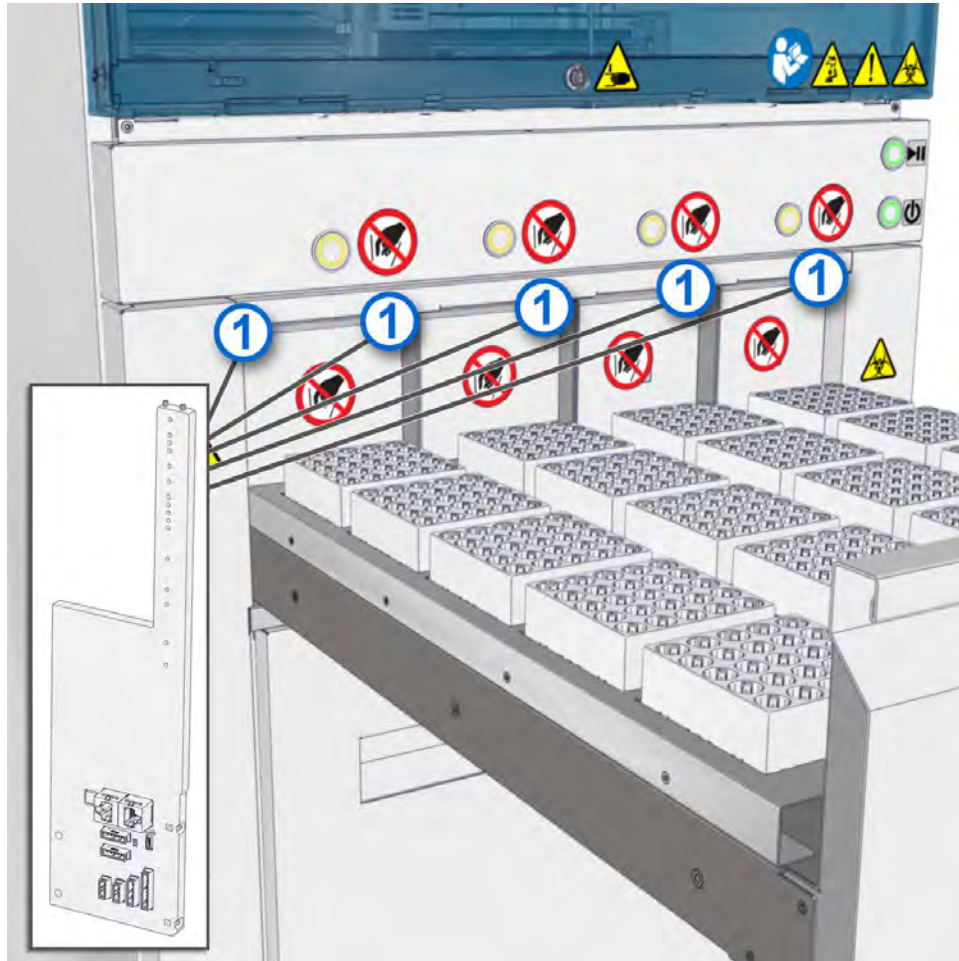
Legend:

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
	CAUTION: Biological RISKS Identifies an activity or an area where the operator may be exposed to potentially infectious material.
	
	CAUTION: Class 2 Laser radiation when open. Avoid eye exposure to light. Do not stare into the beam. Warns against the direct viewing of the beam or reflections from the beam.
	CAUTION: Hot Surface Identifies an activity or an area where the operator may be exposed to hot surfaces.
	CAUTION: Mind or watch your hands Identifies an activity or an area where the operator may be exposed to hand injuries.
	CAUTION: Overhead obstruction Identifies an activity or an area where the operator may be exposed to overhead obstructions.
	CAUTION: Possibility of electric shock Indicates the possibility of electric shock if procedural controls or engineering controls are not observed.
	CAUTION: Sharp Element Identifies an activity or an area where the operator may be exposed to sharp elements.
	CAUTION When used in this manual, this icon is accompanied by a description of the hazard and a related-information reference to safety content in this section. Examples include the following condition: CAUTION: Moving Parts Identifies an activity or an area where the operator may be exposed to moving parts.
	CAUTION: Power off mains disconnect switch from electrical supply Indicates that the mains disconnect switch must be powered off from the electrical supply for the maintenance of electrical equipment when a malfunction occurs or when left unattended. If more than one disconnect switch is provided, power off all switches to disconnect from electrical supply.

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

Related information...

[Hazards](#), page 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 Pathogens¹. Use Biosafety Level 2² or appropriate regional, national, and institutional biosafety practices^{3,4} 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:

Eyes	Rinse with water for 15 minutes.
Mouth	Rinse with water.
Skin	Wash the affected area with soap and water. Apply alcohol, povidone iodine, chlorhexidine, or another antiseptic.
Puncture wound	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. For website logon issues, contact Abbott Laboratories at 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 (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.

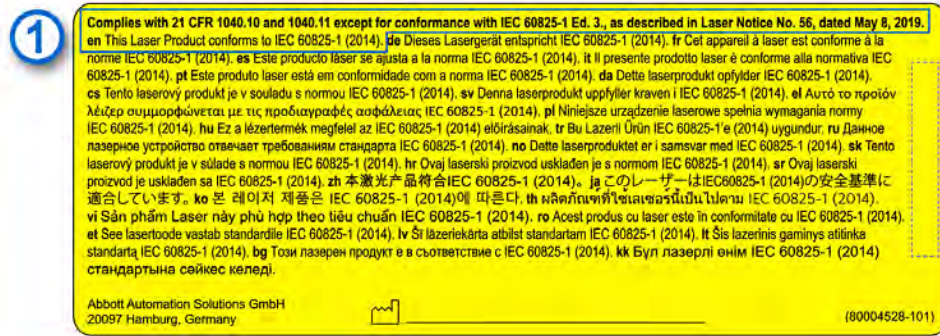
Some modules contain embedded Class 2 laser bar code readers. Refer to the supplemental and interface manuals for module-specific information about Class 2 lasers.

Although momentary exposure to a Class 2 laser (1 mW maximum power, 650 nm wavelength with a pulse duration of 91 μ 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.

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 Clean the lane elements , 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 Open and close the track hoods , 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 Track observed problems , page 370.	Daily
Inspect the lane elements for dust.	Perform Clean the lane elements , page 229 or Clean the guiding slot , 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.

Section 9

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 CAR observed problems , page 372.	Daily
Verify that the guiding pin is not worn.	Perform Replace the front underseal of a CAR , page 237 if necessary.	Weekly
Verify that the sliders are not worn.	Perform Replace the front underseal of a CAR , page 237 if necessary.	Weekly
Inspect the drive wheel for dust.	Perform Clean the drive wheel and the wheel arch , 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: • Clean the monitor, page 238 • Clean the bar code reader, page 243 • Clean the AccessPoint, page 242 • Clean the robot gripper, page 240 • Clean the RackPorts, page 240 • Clean the drawers, page 242	Daily
Verify that there are no observed problems.	Resolve any observed problems as needed. See Input/Output Module observed problems , page 380 and Track Sample Manager observed problems , page 377.	Daily
Inspect the AccessPoints for contamination.	Perform Clean the AccessPoint , page 242 if necessary.	Daily
Verify that the robot gripper fingers are not worn, damaged, or dirty.	Perform Clean the robot gripper , page 240 or Replace the robot gripper fingers , page 245 if necessary.	Daily
Verify that the FlexRacks are clean and undamaged.	Perform Clean the FlexRacks , page 241 or Replace a FlexRack , 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 Open and close the front and rear module covers , 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.

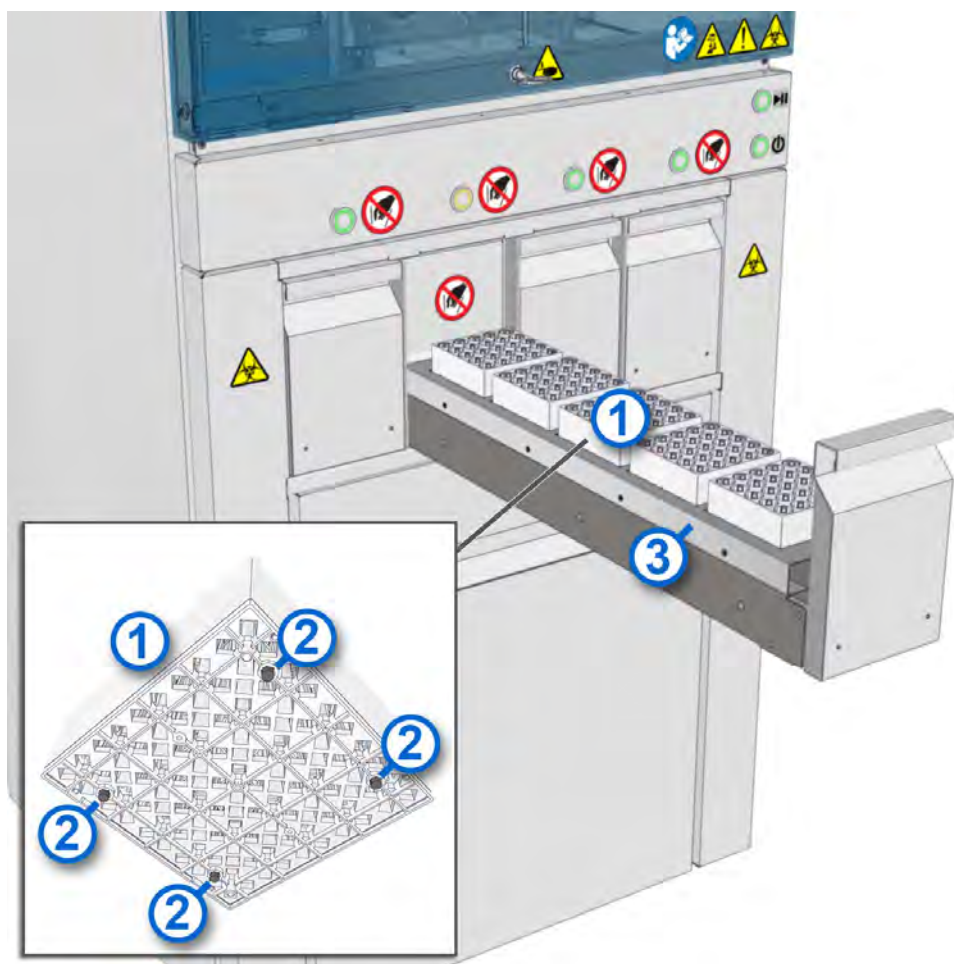


CAUTION: A minimum clearance between the module and the operator is required to avoid injury when opening the drawer.

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
[15004](#), page 259
[15010](#), page 259
[15015](#), page 259
[20105](#), page 260
[20150](#), page 260
[20151](#), page 260
[20200](#), page 260
[20201](#), page 261
[20202](#), page 261
[20203](#), page 261
[20204](#), page 262
[20205](#), page 262
[20206](#), page 262
[20207](#), page 262
[20209](#), page 263
[20210](#), page 263
[20211](#), page 263
[20300](#), page 264
[20900](#), page 264
[20901](#), page 264
[20902](#), page 264
[20903](#), page 265
[20904](#), page 265
[20905](#), page 265
[20906](#), page 265
[20907](#), page 266
[20908](#), page 266
[20909](#), page 266
[20910](#), page 267

[20911](#), page 267
[20912](#), page 267
[20913](#), page 267
[21000](#), page 268
[21001](#), page 268
[21002](#), page 268
[21003](#), page 268
[21004](#), page 269
[21005](#), page 269
[21006](#), page 269
[21008](#), page 269
[21009](#), page 269
[21010](#), page 270
[21011](#), page 270
[21012](#), page 270
[21013](#), page 271
[21014](#), page 271
[21015](#), page 271
[21016](#), page 271
[21017](#), page 272
[21018](#), page 272
[21019](#), page 272
[21021](#), page 272
[21023](#), page 273
[21034](#), page 273
[21036](#), page 273
[21037](#), page 273
[21041](#), page 274
[21045](#), page 274
[21050](#), page 274
[21060](#), page 274
[22200](#), page 275
[22201](#), page 275
[22202](#), page 275
[23000](#), page 275
[23001](#), page 276
[23002](#), page 276
[23003](#), page 276
[23004](#), page 276

[23010](#), page 277
[23011](#), page 277
[23012](#), page 277
[23013](#), page 278
[23014](#), page 278
[23015](#), page 278
[23016](#), page 279
[23017](#), page 279
[23100](#), page 279
[25000](#), page 280
[25001](#), page 280
[25002](#), page 280
[25003](#), page 281
[25005](#), page 281
[25006](#), page 281
[25009](#), page 282
[25010](#), page 282
[25014](#), page 282
[25015](#), page 283
[25016](#), page 283
[25017](#), page 283
[25018](#), page 284
[25019](#), page 284
[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. • Ignore error message.

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.	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: 105**

Module Controller is out of memory.

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

Related information...[Module message codes](#), page 251**Message code: 106**

Invalid data structure.

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

Related information...[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
	• Ignore error message. • Switch module to offline status. • Error cannot be repaired. Stop module and call service.

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. • Ignore error message. • Switch module to offline status. • Error cannot be repaired. Stop module and call service.

Related information...

[Module message codes](#), page 251

Message code: 109

Checksum error.

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

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.

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.	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: 9003

Controller identification verification failed.

The controller could not be identified.

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: 9004

Controller configuration failed.
The controller could not be configured.

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: 10003

CAR did not leave track element within the allotted time.

Probable cause	Corrective action
An error has occurred.	1. Locate the CAR and remove it from the track. 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. 3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.

Related information...

[Module message codes](#), page 251

Message code: 10050

CAR not charging.

Probable cause	Corrective action
An error has occurred.	1. Locate the CAR and remove it from the track. 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. 3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.

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.	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: 15015

AccessPoint might require reconfiguration.

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

Related information...

[Module message codes](#), page 251

Message code: 20105

No solution file found.

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

Related information...

[Module message codes](#), page 251

Message code: 20150

Invalid robot operation requested.

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

Related information...

[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. • Reset and initialize the component again.

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
	- Reset and initialize the component again. - Error cannot be repaired. Stop module and call service. - Disable component until next restart.

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. - The CAR (0) is gone or has been removed. - Reset and initialize the component again. - Error cannot be repaired. Stop module and call service. - Disable component until next restart.

Related information...

[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.	- Correct the error by following the instructions on the touchscreen user interface. - 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: 20203

AccessPoint hardware failure.

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

Related information...

[Module message codes](#), page 251

Message code: 20204

The AccessPoint restarted unexpectedly.

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

Related information...

[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. • Reset and initialize the component again. • Error cannot be repaired. Stop module and call service. • Disable component until next restart.

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. • Reset and initialize the component again. • Error cannot be repaired. Stop module and call service. • Disable component until next restart.

Related information...

[Module message codes](#), page 251

Message code: 20207

CARs could not be caught.

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

Related information...

[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.	Please select one of the offered solutions below. • Reset and initialize the component again. • Error cannot be repaired. Stop module and call service. • Continue operation and ignore the error until the next restart. • Disable component until next restart.

Related information...

[Module message codes](#), page 251

Message code: 20210

The AccessPoint lost too many CARs.

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

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

Related information...

[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. The tube was removed from gripper by pressing the grippers release button.

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. Ignore error message.

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. Check the teach-in positions.

Related information...

[Module message codes](#), page 251

Message code: 20902

Invalid reference positions.

Probable cause	Corrective action
An error has occurred.	- Correct the error by following the instructions on the touchscreen user interface. - 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: 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. • Keep Areas. • Delete the Areas of the affected Component. • Ignore error message.

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. • Ignore error message.

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. • Show dialog to select RackPortType for Component. • Ignore error message.

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. • Ignore error message.

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.	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: 20908

Area configuration contains overlapping areas.

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: 20909

Area type is not specified for the area.

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: 20910**

Configuration data checksum error.

The checksum of the configuration data is invalid.

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

Related information...[Module message codes](#), page 251**Message code: 20911**

Unexpected position detected.

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

Related information...[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. • Component was updated. Please reinitialize. • Error cannot be repaired. Stop module and call service.

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

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. Reset and initialize the component again.

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. Ignore error message.

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. Remove error status flag from Robot.

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. Change robot status to defect.

Related information...

[Module message codes](#), page 251

Message code: 21004

Robot crash detected.

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

Related information...[Module message codes](#), page 251**Message code: 21005**

Robot hardware error.

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

Related information...[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. • Reset and initialize the component again.

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. • Reset and initialize the component again.

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.	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: 21010

Unexpected obstacles detected.

Axis: (0)

0 = Robot axis

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

Related information...

[Module message codes](#), page 251

Message code: 21011

No sample is detected at the gripper.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. • Reset and initialize component. • Confirm remaining sample(s) at position has been removed.

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.	Please select one of the offered solutions below. • The tube was removed from gripper by pressing the grippers release button.

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. • Change robot status to defect.

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. • Reset and initialize the component again.

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.	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: 21016**

Invalid firmware version for PICCOLA controller.

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

Related information...

[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. • Change robot status to defect.

Related information...

[Module message codes](#), page 251

Message code: 21018

Invalid PICCOLA extension ID.

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

Related information...

[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. • Reset and initialize the component again.

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. • As necessary, remove tube from the gripper. Please confirm that the tube is removed by pressing the gripper release button.

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. Change robot status to defect.

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. Change robot status to defect.

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. Change robot status to defect.

Related information...[Module message codes](#), page 251**Message code: 21037**

Unexpected gripper operation detected.

Probable cause	Corrective action
An error has occurred.	- Correct the error by following the instructions on the touchscreen user interface. - 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: 21041

Sample position check error.

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

Related information...

[Module message codes](#), page 251

Message code: 21045

Gripper touched open tube.

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: 21050

Unknown error (1).

1 = Error code

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

Related information...

[Module message codes](#), page 251

Message code: 21060

Barcode reading error.

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

Related information...[Module message codes](#), page 251**Message code: 22200**

Locking failed.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. - Reset and initialize the component again. - Error cannot be repaired. Stop module and call service.

Related information...[Module message codes](#), page 251**Message code: 22201**

Unlocking failed.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. - Reset and initialize the component again. - Error cannot be repaired. Stop module and call service.

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. - Reset and initialize the component again. - Error cannot be repaired. Stop module and call service.

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. Error cannot be repaired. Stop module and call service.

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. Error cannot be repaired. Stop module and call service.

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. Error cannot be repaired. Stop module and call service.

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. Error cannot be repaired. Stop module and call service.

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. Error cannot be repaired. Stop module and call service.

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.	- Correct the error by following the instructions on the touchscreen user interface. - 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: 23011

Area configuration error. Invalid component used.

Invalid Component ID (0) used.

0 = Component ID number

Probable cause	Corrective action
An error has occurred.	- Correct the error by following the instructions on the touchscreen user interface. - 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: 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.	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: 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.	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: 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.	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: 23015

Area configuration error.
Invalid area ID (0).
0 = Area ID number

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: 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.	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: 23017

Area configuration error. Conflicting areas information.

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: 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. Ignore error message.

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. - Reset and initialize the component again. - Disable the component.

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.	- Correct the error by following the instructions on the touchscreen user interface. - 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: 25002

Hardware error with drawer (0).

0 = Drawer number

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

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. • Reset and initialize the component again. • Disable the component. • Ignore error message.

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.	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: 25010

Execution of drawer command failed.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. • Reset and initialize the component again. • Use Drawer in manual mode. • Disable the component.

Related information...

[Module message codes](#), page 251

Message code: 25014

Timeout error for drawer (0).

0 = Drawer number

Details	Solutions
Not applicable.	Please select one of the offered solutions below. • Reset and initialize the component again. • Use Drawer in manual mode.

Details	Solutions
	Disable the component.

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. - Reset and initialize the component again. - Use Drawer in manual mode. - Disable the component.

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. - Disable the component. - Ignore error message.

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. - Use Drawer in manual mode. - Disable the component. - Ignore error message.

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. • Use Drawer in manual mode. • Disable the component. • Ignore error message.

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. • Use Drawer in manual mode. • Disable the component. • Ignore error message.

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. • Use Drawer in manual mode. • Disable the component. • Ignore error message.

Related information...

[Module message codes](#), page 251

Message code: 25032

RackPort type of drawer (0) invalid.

0 = Drawer number

Details	Solutions
Not applicable.	Please select one of the offered solutions below. • Drawer has no RackPort, use without Rackport. • Show dialog to select RackPort Type for Component.

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. • Reset and initialize the component again.

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. • Reset and initialize the component again.

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. • Disable the component.

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. • Disable the component.

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. Error cannot be repaired. Stop module and call service.

Related information...

[Module message codes](#), page 251

Message code: 27000

CAR needs maintenance.

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

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

[TWM generated message codes](#), page 353

[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

[800](#), page 288

[801](#), page 288

[9000](#), page 288

[9001](#), page 289

[10003](#), page 289

[10050](#), page 289

[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

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.	1. Locate the CAR and remove it from the track. 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. 3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.

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.	1. Locate the CAR and remove it from the track.

Probable cause	Corrective action
	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. 3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.

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

[28104](#), page 292
[28105](#), page 293
[28108](#), page 293
[28109](#), page 293
[28110](#), page 294
[28111](#), page 294
[28112](#), page 294
[28113](#), page 295
[28114](#), page 295
[28116](#), page 295
[28117](#), page 296
[28118](#), page 296
[28119](#), page 297
[28120](#), page 297
[28122](#), page 297
[28124](#), page 297
[28126](#), page 298
[28127](#), page 298
[28128](#), page 298
[28129](#), page 299
[28130](#), page 300
[28131](#), page 301
[30001](#), page 301
[30002](#), page 301

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.	1. Search for the sample and locate the last known position to recover the sample. 2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.

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.	1. Verify that the placement of the sample bar code is correct and meets requirements. 2. Ensure that the bar code reader is functioning. 3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.

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.	1. Verify that the placement of the sample bar code is correct and meets requirements. 2. Ensure that the bar code reader is functioning. 3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.

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

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.	1. Verify that the sample is present. 2. Ensure that the module is functioning. 3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.

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.	1. Verify that the sample is present. 2. Ensure that the module is functioning.

Probable cause	Corrective action
	3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.

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.	1. Verify that the sample is present. 2. Ensure that the module is functioning. 3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.

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.	1. Verify that the sample is present. 2. Ensure that the Aliquot Module and printer are functioning. 3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.

Related information...

Controller interfaces sent by module controllers, page 290

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.	1. Observe the inventory of required consumables for modules. 2. Refill the consumables if necessary.

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

Probable cause	Corrective action
- The AccessPoint released the CAR unexpectedly. - The sample identified at the AccessPoint during aspiration did not match the sample identified before aspiration. - Identification failure occurred for the CAR ID and sample ID. - The AccessPoint reset unexpectedly. - Power loss occurred at the AccessPoint.	1. Locate the sample ID at the AccessPoint. 2. Compare the sample ID at the AccessPoint with the sample bar code in the message text (see variable 3). 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. 4. 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: 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. b. On the middleware and host laboratory information system (LIS), perform the steps needed to prevent the release of results for the sample. NOTE: Contact the middleware and host LIS vendor for more information. Follow the laboratory guidelines if any results were released for the sample. c. Rerun all the tests ordered for the sample on the middleware and host LIS. d. Reload the sample.

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
- The AccessPoint released the CAR unexpectedly. - The sample identified at the AccessPoint during aspiration did not match the sample identified before aspiration. - Identification failure occurred for the CAR ID and sample ID. - The AccessPoint reset unexpectedly. - Power loss occurred at the AccessPoint.	NOTE: The Alinity i processing module has no potential for cross-contamination because the module washes the probe between sample aspirations. Perform the following steps only for the Alinity c processing module: 1. Locate the sample IDs of the samples that are present at the local queue of the specified AccessPoint. 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. 3. 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: a. Cancel the current orders on the host laboratory information system for the specified sample ID. b. Do not release any complete or partial results that were generated for the sample after the error occurred. Follow the laboratory guidelines if any results were released for the potentially contaminated sample. c. Follow the recovery steps on the module touchscreen user interface to release the sample to an error output area. d. Dispose of the sample in accordance with local, state, and national regulations.

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...

[Track Sample Manager message codes](#), page 286

[70000](#), page 305

[70001](#), page 305

[70002](#), page 305

[70003](#), page 306

[70004](#), page 306

[70005](#), page 306

[70006](#), page 307

[70007](#), page 307

[70008](#), page 307

[70009](#), page 307

[70010](#), page 308

[70011](#), page 308

[70012](#), page 308

[70013](#), page 308

[70015](#), page 309

[70016](#), page 309

[70017](#), page 309

[70018](#), page 310

[70019](#), page 310

[70021](#), page 310

[70022](#), page 310

[70023](#), page 311

[70026](#), page 311

[70029](#), page 311

[70031](#), page 312

[70032](#), page 312

[70033](#), page 312

[70034](#), page 313

[70035](#), page 313

[70036](#), page 313

[70037](#), page 313

[70038](#), page 314

[70039](#), page 314

[70040](#), page 315
[70041](#), page 315
[70042](#), page 315
[70043](#), page 315
[70044](#), page 316
[70045](#), page 316
[70046](#), page 316
[70047](#), page 316
[70048](#), page 317
[70050](#), page 317
[70051](#), page 317
[70052](#), page 318
[70053](#), page 318
[70054](#), page 318
[70062](#), page 319
[70063](#), page 319
[70070](#), page 319
[70072](#), page 319
[70073](#), page 320
[70074](#), page 320
[70075](#), page 320
[70076](#), page 321
[70077](#), page 321
[70078](#), page 321
[70079](#), page 322
[70080](#), page 322
[70082](#), page 322
[70083](#), page 323
[70084](#), page 323
[70085](#), page 323
[70086](#), page 323
[70087](#), page 324
[70088](#), page 324
[70089](#), page 324
[70090](#), page 325
[70091](#), page 325
[70092](#), page 325
[70093](#), page 326
[70094](#), page 326

[70096](#), page 326

[70097](#), page 327

[70098](#), page 327

[70099](#), page 327

[70100](#), page 328

[70101](#), page 328

[70102](#), page 328

[70103](#), page 329

[70104](#), page 329

[70105](#), page 329

[70106](#), page 329

[70107](#), page 330

[70108](#), page 330

[70109](#), page 330

[70110](#), page 331

[70111](#), page 331

[70112](#), page 331

[70113](#), page 332

[70114](#), page 332

[70115](#), page 332

[70116](#), page 332

[70117](#), page 333

[70118](#), page 333

[70119](#), page 333

[70120](#), page 334

[70121](#), page 334

[70122](#), page 334

[70123](#), page 335

[70124](#), page 335

[70125](#), page 335

[70126](#), page 335

[71000](#), page 336

[71001](#), page 336

[71002](#), page 336

[71003](#), page 336

[71004](#), page 337

[71005](#), page 337

[71006](#), page 337

[71007](#), page 337

[71008](#), page 338

[71009](#), page 338

[71010](#), page 338

[71011](#), page 338

[71012](#), page 339

[71013](#), page 339

[71014](#), page 339

[71015](#), page 339

[71016](#), page 339

[71017](#), page 340

[71018](#), page 340

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.	1. Verify that the position of the sample bar code is correct. 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: 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

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

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.	1. Reinitialize the module. 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: 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.	1. Verify that the sample bar code meets requirements. 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: 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.	1. Restart the module. 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: 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.	1. Locate the CAR and remove it from the track for maintenance. 2. Contact an Abbott Laboratories representative or an authorized service representative.

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.	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. 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: 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.	1. Remove the CAR from the maintenance lane. 2. Contact an Abbott Laboratories representative or an authorized service representative.

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

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.

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

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.	1. Observe the inventory of required consumables for modules. 2. Refill the consumables if necessary.

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

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

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.	1. Locate both samples. 2. Observe the sample results in the middleware to ensure that no sample exchanges or mix-ups occurred. 3. 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: 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

Probable cause	Corrective action
An error has occurred.	1. Informational message. 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: 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.	1. Informational message. 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: 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.	1. Locate the sample and observe the cap status. 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: 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.

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.	1. Locate the sample and place it back on the track for further processing. 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: 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.	1. Locate the CAR and remove it from the track. 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. 3. 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: 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.	1. Locate the CAR and remove it from the track. 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. 3. 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: 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.	1. Locate the CAR and remove it from the track. 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. 3. 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: 70123

CAR not charging

No translation required

Probable cause	Corrective action
An error has occurred.	1. Locate the CAR and remove it from the track. 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. 3. 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: 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

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...

[Track Sample Manager message codes](#), page 286

[80000](#), page 341

[80001](#), page 342

[80002](#), page 342

[80003](#), page 342

[80004](#), page 343

[80005](#), page 343

[80006](#), page 343

[80007](#), page 344

[81004](#), page 344

[81005](#), page 344

[81006](#), page 345

[81007](#), page 345

[81008](#), page 345

[81009](#), page 346

[81010](#), page 346

[81011](#), page 346

[81012](#), page 347

[81013](#), page 347

[81014](#), page 347

[81015](#), page 348

[81016](#), page 348

[81017](#), page 348

[81018](#), page 349

[81019](#), page 349

[81020](#), page 349

[81021](#), page 350

[81022](#), page 350

[81023](#), page 350

[81024](#), page 351

[81025](#), page 351

[81026](#), page 351

[81027](#), page 352

[81028](#), page 352

[81029](#), page 352

[81030](#), page 353

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.	1. Observe the analyzer for more information. 2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.

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.	1. Observe the analyzer for more information. 2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.

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.	1. Observe the analyzer for more information. 2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.

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.	1. Observe the analyzer for more information. 2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.

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.	1. Observe the analyzer for more information. 2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.

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.	1. Observe the analyzer for more information. 2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.

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.	1. Observe the middleware and analyzer for more information. 2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.

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.	1. Observe the analyzer for more information. 2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.

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	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: 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.

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	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: 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	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...

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

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	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: 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	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: 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

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.	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: 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.	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: 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.	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: 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

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

[83118](#), page 362

[83119](#), page 363

[83120](#), page 363

[83121](#), page 363

[83122](#), page 363

[83123](#), page 364

[83124](#), page 364

[83125](#), page 364

[83127](#), page 364

[83128](#), page 365

[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

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.	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...

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)".

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

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

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

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

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.	- View and update the test and instrument statuses in the middleware and the Track Sample Manager. - Contact an Abbott Laboratories representative or an authorized service representative.

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.	- View and update the test and instrument statuses in the middleware and the Track Sample Manager. - Contact an Abbott Laboratories representative or an authorized service representative.

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

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.	- View and update the status of the ordered test on the instruments on the track. - Contact an Abbott Laboratories representative or an authorized service representative.

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)

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.



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
The operator removes a sample from a CAR manually or loads a CAR manually.  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.	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.	- Clean the CAR. Perform one or more of the following procedures: 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.

Probable cause	Corrective action
	- If necessary, replace the CAR. Perform one of the following procedures: <i>Remove a CAR with a sample</i>, page 236. <i>Remove a CAR without a sample</i>, page 236. - Contact an Abbott Laboratories representative or an authorized service representative.

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.	- Turn off the CAR, and then turn it on again. NOTE: Do not affix extra labels to CARs as the labels may adversely affect the collision sensors on the CARs. - Contact an Abbott Laboratories representative or an authorized service representative if necessary.

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.	- 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. - 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.

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.	1. Turn off the CAR, and then turn it on again. 2. Contact an Abbott Laboratories representative or an authorized service representative if necessary.

Related information...

[CAR observed problems](#), page 372

CAR lurches from side to side and is not stopped at the AccessPoint

Probable cause	Corrective action
• The sliders are no longer present on the CAR. • The guiding pin has broken off the CAR.	Replace the front underseal. Perform Replace the front underseal of a CAR , page 237.

Related information...

[CAR observed problems](#), page 372

CAR movement is jerky or noisy

Probable cause	Corrective action
The CAR is dirty.	• Clean the CAR. Perform one or more of the following procedures: – 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. • Contact an Abbott Laboratories representative or an authorized service representative if necessary.

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 Replace the front underseal of a CAR , 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 Replace the front underseal of a CAR , 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: • Remove a CAR with a sample, page 236. • Remove a CAR without a sample, page 236.
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 Replace the front underseal of a CAR , 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
• The CAR requires a restart. • The CAR is defective. • The rechargeable lithium battery is almost empty.	1. Turn off the CAR, and then turn it on again. 2. Contact an Abbott Laboratories representative or an authorized service representative if necessary.

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.	• Turn on the CAR. • Inspect the track for obstructions. • Contact an Abbott Laboratories representative or an authorized service representative if necessary.
The lithium battery charge level of the CAR is low.	• Turn on and turn off the CAR. • Inspect the track for obstructions. • Remove the CAR from the track. • Contact an Abbott Laboratories representative or an authorized service representative if necessary.
An obstruction is present on the driving lane.	• Turn on and turn off the CAR. • Inspect the track for obstructions. • Remove the CAR from the track. • Contact an Abbott Laboratories representative or an authorized service representative if necessary.

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.	• Clean the charging contacts on the rechargeable lithium battery. • Contact an Abbott Laboratories representative or an authorized service representative to replace the rechargeable lithium battery.

Related information...

[CAR observed problems](#), page 372

Rechargeable lithium battery is overheating

Probable cause	Corrective action
The rechargeable lithium battery is defective.	1. Remove the CAR from the track. CAUTION: Wear personal protective equipment while operating the laboratory automation system. 2. Contact an Abbott Laboratories representative or an authorized service representative.

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.	• Contact an Abbott Laboratories representative or an authorized service representative to replace the sample holder. • Remove the sample tube from the Track Sample Manager. • Reload the sample tube in the correct input area of the Input/Output Module.

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.	1. Verify the connection between TSM and the Track Workflow Manager (TWM). Perform View the connections to TWM on TSM, page 143. 2. Contact an Abbott Laboratories representative or an authorized service representative if necessary.
The sample target is not available.	1. Verify the availability and online status of the areas and modules. See Controller tab element descriptions (TSM), page 127. 2. Transition the module status to Online.

Probable cause	Corrective action
The target area of the output module is full.	1. Verify the fill levels of the areas on TSM. See Controller tab element descriptions (TSM), page 127. 2. Ensure that the output drawers are emptied.

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.	1. Visually inspect the track for dust. 2. Verify that the cross switch is working correctly. 3. Contact an Abbott Laboratories representative or an authorized service representative if necessary. See Samples tab (TSM), page 144.

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 Samples tab (TSM) , page 144.
An error occurred when the bar code was read.	1. Ensure that the correct bar code labels have been correctly affixed to the sample tubes. 2. Contact an Abbott Laboratories representative or an authorized service representative if necessary.
A sample was not processed within the time limit.	Determine the reason for the time-out.
An error occurred with the robot gripper.	1. Visually inspect the robot gripper for dust. 2. Contact an Abbott Laboratories representative or an authorized service representative if necessary.

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.	• Unload the CAR. • Manually place the CAR on a charge lane. See CARs tab element descriptions (TSM), page 157.
A collision occurred between two CARs at a switch.	1. Inspect the CARs for damage. 2. Repair or replace damaged CARs. 3. Manually move undamaged CARs. 4. Contact an Abbott Laboratories representative or an authorized service representative if necessary.
Too many CARs are present on the track.	Reduce the number of samples in the system.
The switch performance is insufficient.	1. Visually inspect the switch for dust. 2. Verify that the cross switch is working correctly. See Samples tab (TSM), page 144. 3. Contact an Abbott Laboratories representative or an authorized service representative if necessary.

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 CARs tab element descriptions (TSM) , page 157.
Too many CARs have a low lithium battery charge level.	1. Inspect the charge lanes. 2. Verify the lithium battery charge level of the CARs. See CARs tab element descriptions (TSM), page 157.
The switch at the entry point of the queue is defective.	1. Visually inspect the queue for dust. 2. Verify that the cross switch is working correctly. 3. Contact an Abbott Laboratories representative or an authorized service representative if necessary. See Samples tab (TSM), page 144.
A CAR was manually removed from the queue.	1. Do not remove a CAR from the queue. 2. Verify that the cross switch is working correctly. See List requested tab (Samples) element descriptions (TSM), page 154.

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.	1. Clean the bar code reader. Perform Clean the bar code reader, page 243. 2. Contact an Abbott Laboratories representative or an authorized service representative if necessary.
The bar code is illegible.	1. Relabel the sample tube. 2. Reintroduce the sample tube to the module.

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).	1. Verify the TSM or TWM connection. 2. Contact an Abbott Laboratories representative or an authorized service representative if necessary.

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.	1. <i>Cycle power to the module</i>, page 190. 2. If the CAR does not move, perform <i>Cycle power to an empty CAR</i>, page 120. 3. Contact an Abbott Laboratories representative or an authorized service representative if necessary.

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.	1. Inspect the drawer for obstructions. Remove any foreign objects. 2. Press the drawer push button to ensure that the drawer is fully open or fully closed.

Probable cause	Corrective action
	3. If necessary, perform <i>Cycle power to the module</i>, page 190. 4. Contact an Abbott Laboratories representative or an authorized service representative if necessary.

Related information...

Input/Output Module observed problems, page 380

Power to the module is interrupted

Probable cause	Corrective action
The power source to the module is interrupted.	1. Open the module cover. Perform <i>Open and close the front and rear module covers</i>, page 187. 2. Remove all samples from the module. CAUTION: Danger due to power failure. 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. – 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. 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. 4. Place the samples in the correct input area of the Input/Output Module. 5. Clean any spills if necessary. For more information, refer to the GLP systems Track Operations Manual. 6. Close the module cover. Perform <i>Open and close the front and rear module covers</i>, page 187. 7. <i>Place the module online</i>, page 193.

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.	1. Follow the error dialog on the touchscreen user interface. 2. Cycle power to the module, page 190. 3. Contact an Abbott Laboratories representative or an authorized service representative if necessary.
A drawer is not fully open or fully closed.	1. Observe the notification displayed on the touchscreen user interface. 2. Inspect the drawer for obstructions. Remove any foreign objects. 3. Press the drawer push button to ensure that the drawer is fully open or fully closed. 4. If necessary, perform Deactivate pause mode, page 194. 5. Tap the notification on the touchscreen user interface to acknowledge it.

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.	• Replace the robot gripper fingers, page 245. • Manually insert the sample tube for analysis in the sample input drawer. • Separately appraise and specifically assess the test result of the dropped sample tube.
Sample tubes that are 16 mm x 100 mm were placed next to each other in the FlexRacks.	1. Place the 16 mm x 100 mm sample tubes apart from each other in the FlexRacks. 2. Contact an Abbott Laboratories representative or an authorized service representative if necessary.

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.	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 Input/Output Module design and function, page 50. 2. Inspect the robot gripper fingers for damage and dirt. 3. If necessary, perform Clean the robot gripper, page 240. 4. If necessary, perform Replace the robot gripper fingers, page 245. 5. Follow the error dialog on the touchscreen user interface. 6. Contact an Abbott Laboratories representative or an authorized service representative if necessary.
Sample tubes that are 16 mm x 100 mm were placed next to each other in the FlexRacks.	1. Place the 16 mm x 100 mm sample tubes apart from each other in the FlexRacks. 2. Contact an Abbott Laboratories representative or an authorized service representative if necessary.

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 Replace a FlexRack , 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.	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. 2. Move the leftmost power switch to the Off position to turn off the power.

Probable cause	Corrective action
	3. After the module is powered off, wait for a minimum of 1 minute. 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. 5. Contact an Abbott Laboratories representative or an authorized service representative if necessary. NOTE: When an emergency situation occurs, <i>Perform an emergency shutdown</i>, page 106.

Related information...

Input/Output Module observed problems, page 380

Touchscreen user interface does not respond

Probable cause	Corrective action
A software error occurred.	1. <i>Cycle power to the module</i>, page 190. 2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.

Related information...

Input/Output Module observed problems, page 380

NOTES

Glossary

accessories	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.
AccessPoint	An active lane element that holds the CARs and samples in place, allowing for secure processing of the samples.
analyzer	An instrument that performs all sample-processing activities from sample aspiration to final result reporting.
bar code label	A unique identifier that contains black bars that represent the sample information.
biological hazard	An activity or an area where the operator may be exposed to potentially infectious material.
CAR	A sample transport vehicle that runs on an intermodular track system.
circle	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.
Clinical and Laboratory Standards Institute	A nonprofit organization that provides a communication forum for the development, promotion, and use of standards for the worldwide medical science community.
CLSI	See <i>Clinical and Laboratory Standards Institute</i> , page 387.
control system	Software composed of the laboratory information system, including middleware, the Track Sample Manager, and the Track Workflow Manager.
diagnostic procedure	A procedure that can be used to confirm the status of assemblies and mechanisms to help identify and resolve operational problems.
discipline	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.
FlexRack	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.
GLP systems Track	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.
Input/Output Module	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.

instrument status	The operational mode of an instrument that is connected to the laboratory automation system.
IOM	See Input/Output Module , page 387.
laboratory automation system	A track system that automates pre-analytical processing, sample handling, and delivery of samples to analyzers for sample test processing.
laboratory information system	Computer software and hardware used to manage order input, test sequence, and results validation.
lane element	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.
LAS	See laboratory automation system , page 388.
LIS	See laboratory information system , page 388.
loading area	The area on a module that holds racks for routine and priority processing.
logon (TSM)	An identifier that controls access to certain functionality. The Track Sample Manager (TSM) has three types of logons: • Service • Administrator • Operator 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.
maintenance procedure	A scheduled procedure or an as-needed cleaning procedure that is performed to ensure the appropriate functionality of the system.
message	A touchscreen user interface element that provides information about conditions or errors of system operation.
middleware	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.
module	An analyzer that performs all sample-processing activities from sample aspiration to final result reporting.
module status	The operational mode of a module that is connected to the laboratory automation system.
monitor	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

password	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.
pipettor	A device that detects, aspirates, transfers, and dispenses samples.
printed circuit board	A board with electrical circuits that are used to connect electronic or electrical components in electronic equipment such as a computer.
RackPort	An accessory in drawers that is used to position racks for sample tubes and pipettors. A RackPort can be used in module drawers.
radio-frequency identification (RFID) tag	An RFID tag is located on a RackPort and is used for automatic recognition on modules.
robot	A device that loads and unloads the CARs and FlexRacks with the robot gripper. The robot transports samples into input, output, and error areas.
screen	The screen is displayed on the touchscreen user interface.
system log	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.
time-out	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.
track	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.
Track Sample Manager	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.
track section	Components of the laboratory automation system that include floor and ceiling sections and provide space for laboratory utility lines carrying electricity, water, or wastewater.
Track Workflow Manager	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.
TSM	See Track Sample Manager , page 389.
TWM	See Track Workflow Manager , page 389.

user name	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.
window	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

Index

A

- accessing
 - Configuration screen, 73
 - Information screen, 72
 - Login screen, 70
- acknowledging
 - message code, 251
- active lane elements
 - description of, 39
 - illustration of, 39
- Admin screen (TWM)
 - description of, 185
- agency approvals
 - description of, 16
- analyzer-specific racks
 - loading, 198
 - unloading, 201
- area types in the module
 - creating, 75
- areas in the module
 - configuring, 75
 - deleting, 77
 - editing properties, 76
 - viewing information, 77
- as-needed cleaning procedures
 - CARs, 233
 - clean the AccessPoint, 242
 - clean the bar code reader, 243
 - clean the drawers, 242
 - clean the drive wheel and the wheel arch, 233
 - clean the FlexRacks, 241
 - clean the guiding slot, 230
 - clean the lane elements, 229
 - clean the RackPorts, 240
 - clean the robot gripper, 240
 - clean the sample holder, 233
 - Input/Output Module, 239
 - track, 229
- as-needed maintenance procedures
 - CAR replacement, 235
 - Input/Output Module, 244
 - remove a CAR with a sample, 236
 - remove a CAR without a sample, 236
 - replace a FlexRack, 247
 - replace the front underseal of a CAR, 237
 - replace the robot gripper fingers, 245

B

- bar code reader
 - description of, 55
- basic safety
 - description of, 217
- biological hazards
 - description of, 215
- Buffered samples list tab (Samples) (TSM)
 - element descriptions, 156

C

- CAR
 - cleaning the charging contacts, 232
 - cleaning the drive wheel and the wheel arch, 233
 - cleaning the housing, 232
 - cleaning the sample holder, 233
 - cleaning the sensors, 231
 - cycling power, 120
 - disposal, 238
 - illustration of, 42
 - observed problems, 372
 - overview, 42
 - removing a CAR with a sample, 236
 - removing a CAR without a sample, 236
 - replacement, 235
 - replacing the front underseal, 237
 - requesting to send to a maintenance lane (TSM), 158
 - safety, 220
 - technical data, 99
- CAR cleaning
 - description of, 231
- CAR maintenance
 - checks, 234
 - description of, 234
- CARs tab (TSM)
 - element descriptions, 157
 - overview, 156
- Circles tab (TSM)
 - element descriptions, 136
- Circling tab (TSM)
 - element descriptions, 159
- cleaning
 - AccessPoint, 242
 - bar code reader, 243
 - CAR sensors, 231

- charging contacts, 232
- drawers, 242
- drive wheel and wheel arch, 233
- FlexRacks, 241
- guiding slot, 230
- housing, 232
- lane elements, 229
- module covers, 239
- monitor, 238
- RackPorts, 240
- robot gripper, 240
- sample holder, 233
- track hoods, 229
- cleaning and maintenance
 - overview, 228
- closing
 - module covers, 187
 - spiral tower doors, 118
 - track hoods, 112
- communication paths
 - description of, 35
 - illustration of, 35
- Configuration screen
 - accessing, 73
 - description of, 72
- configuring
 - new area in the module, 75
- connections (TSM)
 - viewing TWM, 143
- connections (TWM)
 - viewing, 184
- Connections screen (TWM)
 - description of, 183
 - element descriptions, 183
- control system
 - components, 84
 - functions, 84
- control systems
 - description of, 55
- Controller tab (TSM)
 - element descriptions, 127
- covers, hoods, and sensors
 - description of, 208
- creating
 - area type in the module, 75
- customer service
 - contacting the local representative, 11
 - finding country-specific contact information, 11
 - requesting instructions for use, 11
- cycling
 - power to an empty CAR, 120
 - power to the module, 190

D

- deactivating
 - pause mode, 194
- decontamination
 - requirements, 223
- defining areas
 - description of, 74
- deleting
 - area from the module, 77
- disabling
 - instruments (TWM), 177
 - tests by instrument on the Test status screen (TWM), 181
 - tests by type of analysis on the Test status screen (TWM), 182
 - tests on the Instrument status screen (TWM), 178
- disclaimers
 - description of, 14
- distributor
 - description of, 23

E

- editing
 - properties of an area in the module, 76
 - rack ID, 78
- element descriptions
 - Buffered samples list tab (Samples) (TSM), 156
 - CARs tab (TSM), 157
 - Circles tab (TSM), 136
 - Circling tab (TSM), 159
 - Connections screen (TWM), 183
 - Controller tab (TSM), 127
 - Expert search tab (Samples) (TSM), 152
 - Firmware tab (TSM), 139
 - Instrument status screen (TWM), 175
 - Layout tab (TSM), 137
 - List requested tab (Samples) (TSM), 154
 - Main menu screen (TSM), 124
 - Main menu screen (TWM), 163
 - Maintenance tab (TSM), 160
 - Menu overview screen (TWM), 164
 - Messages screen (TWM), 172
 - Module controller screen (TSM), 132
 - Operation mode tab (TSM), 143
 - Routing Engine tab (TSM), 142
 - Routing History flyout (TWM), 169
 - Sample Detail screen (TSM), 146
 - Sample details screen (TWM), 167
 - Sample History screen (TSM), 149
 - Sample search screen (TWM), 165

- Samples tab (TSM), 144
- Search result screen (TSM), 146
- Search tab (CARS) (TSM), 157
- Search tab (Samples) (TSM), 145
- Segment controller screen (TSM), 128
- Statistic tab (TSM), 138
- Test status screen (TWM), 179
- Tests of instrument screen (TWM), 176
- Track / RE tab, 126
- Waiting queues tab (TSM), 159
- emergency shutdown
 - performing, 106
- enabling
 - instruments (TWM), 177
 - tests by instrument on the Test status screen (TWM), 181
 - tests by type of analysis on the Test status screen (TWM), 182
 - tests on the Instrument status screen (TWM), 178
- Expert search tab (Samples) (TSM)
 - element descriptions, 152

F

- Firmware tab (TSM)
 - element descriptions, 139
- FlexRacks
 - illustration of, 59
 - loading samples, 195
 - overview, 59
 - replacing, 247
 - unloading samples, 197
- floor loading
 - typical, 66

G

- general safety information
 - overview, 9
- GLP systems Track
 - active lane elements, 39
 - CAR design and function, 42
 - CAR overview, 42
 - CAR technical data, 99
 - communication paths, 35
 - control systems, 55
 - description of lane elements, 39
 - description of system security, 10
 - general operation, 82
 - installation, 63
 - IOM design and function, 50
 - IOM overview, 49

- IOM technical data, 100
- laboratory automation system technical data, 92
- main components, 35
- monitor, 55
- overview, 35
- passive lane elements, 40
- performing an emergency shutdown, 106
- responsibility for system security, 10
- robot, 54
- sample bar code label technical data, 93
- sample processing specifications, 98
- sample tube technical data, 95
- shutting down, 105
- special lane elements, 40
- starting, 104
- track overview, 37
- track sections, 37
- track technical data, 98
- TSM overview, 47
- TSM technical data, 99
- TWM overview, 48
- TWM technical data, 100
- use or function, 33
- What's new, 8

H

- hazards
 - overview, 211

I

- Information screen
 - accessing, 72
 - description of, 70
- Input/Output Module (IOM)
 - configuration description, 68
 - control systems, 55
 - description of cleaning, 238
 - descriptions of, 50
 - illustrations of, 50
 - installation requirements, 64
 - monitor, 55
 - observed problems, 380
 - operation, 90
 - overview, 49
 - procedures, 187
 - replacing a FlexRack, 247
 - robot, 54
 - safety requirements, 224
 - sample input and output, 49
 - technical data, 100

Input/Output Module maintenance
 checks, 243
 description of, 243
 installation
 GLP systems Track, 63
 installation procedures and special requirements
 overview, 61
 instrument status (TWM)
 viewing, 176
 Instrument status screen (TWM)
 description of, 174
 disabling tests, 178
 element descriptions, 175
 enabling the tests, 178
 instruments (TWM)
 disabling, 177
 enabling, 177
 Intellectual Property statement
 description of, 18
 intended use
 description of, 12

K

key to symbols
 descriptions of, 19
 illustrations of, 19

L

laboratory automation system technical data
 altitude, 92
 ambient temperature, 92
 placement, 92
 relative humidity, 92
 RFID, 92
 sound pressure level, 92
 storage and transport, 92
 lane elements
 description of, 39
 laser
 safety, 221
 Layout tab (TSM)
 element descriptions, 137
 List requested tab (Samples) (TSM)
 element descriptions, 154
 loading
 analyzer-specific racks, 198
 floor, typical, 66
 rack in the module drawer, 79
 samples into FlexRacks, 195

logging on
 Track Sample Manager (TSM), 108
 Track Workflow Manager (TWM), 110
 Login screen
 accessing, 70
 description of, 69

M

Main menu screen (IOM)
 illustration of, 68
 Main menu screen (TSM)
 description of, 123
 element descriptions, 124
 Main menu screen (TWM)
 description of, 163
 element descriptions, 163
 Maintenance tab (TSM)
 element descriptions, 160
 manufacturer
 description of, 23
 Master data screen (TWM)
 description of, 185
 Menu overview screen (TWM)
 element descriptions, 164
 message code
 acknowledging, 251
 Message code screen (IOM)
 illustration of, 250
 message codes
 description of, 250
 messages (TWM)
 viewing, 174
 Messages screen (TWM)
 description of, 172
 element descriptions, 172
 modifying
 statistical criteria (TSM), 139
 module
 accessing the Configuration screen, 73
 accessing the Information screen, 72
 accessing the Login screen, 70
 cleaning the AccessPoint, 242
 cleaning the bar code reader, 243
 cleaning the drawers, 242
 cleaning the FlexRacks, 241
 cleaning the module covers, 239
 cleaning the monitor, 238
 cleaning the RackPorts, 240
 cleaning the robot gripper, 240
 cycling power, 190
 loading analyzer-specific racks, 198

- loading samples into FlexRacks, 195
- opening and closing front and rear module covers, 187
- pausing, 194
- placing offline, 193
- placing online, 193
- powering off, 192
- powering on, 191
- replacing the robot gripper fingers, 245
- unloading analyzer-specific racks, 201
- unloading samples from FlexRacks, 197
- Module controller screen (TSM)
 - element descriptions, 132
- monitor
 - description of, 55
- monthly cleaning procedure
 - CARs, 232
 - clean the housing, 232

O

- observed problems
 - CAR, 372
 - description of, 370
 - Input/Output Module (IOM), 380
 - track, 370
 - Track Sample Manager (TSM), 377
- opening
 - module covers, 187
 - spiral tower doors, 118
 - track hoods, 112
- operating instructions
 - overview, 103
- Operation mode tab (TSM)
 - element descriptions, 143
- operational precautions and limitations
 - impact of failure to comply, 207
- operations manual
 - conventions for, 28
 - description, 30
 - organization of, 26
 - using the, 31
- operator
 - responsibility for using the system, 212

P

- passive lane elements
 - description of, 40
 - illustration of, 40
- pause mode
 - deactivating, 194

- pausing
 - module, 194
- performance characteristics and specifications
 - overview, 91
- performing
 - emergency shutdown, 106
- placing offline
 - module, 193
- placing online
 - module, 193
- powering off
 - module, 192
- powering on
 - module, 191
- precautions
 - description of, 215
- principles of operation
 - Input/Output Module (IOM), 90
 - overview, 81
- proprietary statement
 - description of, 13

Q

- quarterly cleaning procedure
 - CARs, 232
 - clean the charging contacts, 232

R

- rack
 - loading analyzer-specific racks, 198
 - loading or unloading in the module drawer, 79
 - replacing, 78
 - unloading analyzer-specific racks, 201
- rack ID
 - editing, 78
- RackPorts
 - overview, 58
- read me first
 - overview, 7
- removing
 - CAR with sample, 236
 - CAR without sample, 236
 - samples (TSM), 151
 - spiral entrance hoods, 115
- replacing
 - FlexRack, 247
 - front underseal of a CAR, 237
 - rack, 78
 - robot gripper fingers, 245
 - spiral entrance hoods, 115

- requesting
 - CAR to send to a maintenance lane (TSM), 158
 - samples to send to an output area (TSM), 155
- requirements
 - handling the specimens, 210
- revision history
 - content revised, 391
 - revision date, 391
- robot
 - description of, 54
- robot gripper fingers
 - replacing, 245
- roles and permissions
 - Track Sample Manager (TSM), 122
 - Track Workflow Manager (TWM), 162
- Routing Engine tab (TSM)
 - element descriptions, 142
- Routing History flyout (TWM)
 - element descriptions, 169
- routing strategy
 - TSM workflow, 86

S

- safety
 - basic requirements, 217
 - CAR requirements, 220
 - Input/Output Module (IOM) requirements, 224
 - laser requirements, 221
- safety icons
 - description of, 213
- sample and CAR routing
 - TSM workflow, 85
- sample bar code label technical data
 - bar code, 93
 - bar code label, 93
 - symbolology, 93
- Sample Detail screen (TSM)
 - element descriptions, 146
- Sample details screen (TWM)
 - element descriptions, 167
- Sample History screen (TSM)
 - element descriptions, 149
- Sample search screen (TWM)
 - description of, 165
 - element descriptions, 165
- sample tube technical data
 - cap diameter, 95
 - cap height, 95
 - cap type, 95
 - pediatric sample tubes, 95
 - tube diameter, 95
 - tube fill level, 95
 - tube height, 95
 - tube material, 95
 - tube shape, 95
 - tube type, 95
- samples
 - loading into FlexRacks, 195
 - requesting to send to an output area (TSM), 155
 - searching (TSM), 150
 - searching (TWM), 170
 - searching for sample details (TWM), 170
 - unloading from FlexRacks, 197
- samples (TSM)
 - removing, 151
- Samples tab (TSM)
 - element descriptions, 144
 - overview, 144
- Search result screen (TSM)
 - element descriptions, 146
- Search tab (CARS) (TSM)
 - element descriptions, 157
- Search tab (Samples) (TSM)
 - element descriptions, 145
- searching
 - sample details (TWM), 170
 - samples (TSM), 150
 - samples (TWM), 170
- Segment controller screen (TSM)
 - element descriptions, 128
- service, maintenance, and diagnostics
 - overview, 227
- shutting down
 - GLP systems Track, 105
- special lane elements
 - description of, 40
- specimen handling
 - requirements, 210
- spills
 - cleanup precautions, 222
- spiral entrance hoods
 - removing, 115
 - replacing, 115
- spiral tower
 - installation requirements, 63
- spiral tower doors
 - closing, 118
 - opening, 118
- starting
 - GLP systems Track, 104
- Statistic tab (TSM)
 - element descriptions, 138

- statistical criteria (TSM)
 - modifying, 139
- status package for sample and CAR routing
 - TSM system monitoring, 87
- statuses
 - descriptions of CAR charge statuses, 45
 - descriptions of drawer statuses, 56
 - descriptions of module statuses, 56
- symbols
 - key to, 19
- system documentation
 - overview, 25
- system log
 - TSM system monitoring, 87
- system monitoring
 - description of, 87
- system security
 - description of, 10
 - laboratory automation system, 10
 - responsibility for, 10

T

- technical data
 - CAR, 99
 - Input/Output Module (IOM), 100
 - laboratory automation system, 92
 - overview, 92
 - sample bar code label, 93
 - sample processing specifications, 98
 - sample tube, 95
 - track, 98
 - Track Sample Manager (TSM), 99
 - Track Workflow Manager (TWM), 100
- test status (TWM)
 - viewing, 181
- Test status screen (TWM)
 - description of, 179
 - disabling tests by instrument, 181
 - disabling tests by type of analysis, 182
 - element descriptions, 179
 - enabling tests by instrument, 181
 - enabling tests by type of analysis, 182
- Tests of instrument screen (TWM)
 - element descriptions, 176
- track
 - cleaning the guiding slot, 230
 - cleaning the lane elements, 229
 - cleaning the track hoods, 229
 - observed problems, 370
 - overview, 37

- Track / RE tab
 - element descriptions, 126
- Track / RE tab (TSM)
 - overview, 125
- track cleaning
 - description of, 228
- track hoods
 - closing, 112
 - opening, 112
- track installation
 - description of, 63
- track layout
 - TSM workflow, 86
- track maintenance
 - checks, 230
 - description of, 230
- Track Sample Manager (TSM)
 - functional description, 85
 - logging on, 108
 - message codes, 286
 - modifying statistical criteria, 139
 - observed problems, 377
 - overview, 47
 - removing a sample, 151
 - requesting to send a CAR to a maintenance lane, 158
 - requesting to send a sample to an output area, 155
 - roles and permissions, 122
 - searching for samples, 150
 - system monitoring, 87
 - technical data, 99
 - user interface, 122
 - viewing connections to TWM, 143
 - workflow, 85
- Track Sample Manager (TSM) system monitoring
 - status package for sample and CAR routing, 87
 - system log, 87
- Track Sample Manager (TSM) workflow
 - routing strategy, 86
 - sample and CAR routing, 85
 - track layout, 86
 - TWM interface, 86
- track sections
 - description of, 37
 - illustration of, 37
- track technical data
 - current, 98
 - electrical safety parameters, 98
 - power, 98
 - supply frequency, 98
 - supply voltage, 98
- Track Workflow Manager (TWM)
 - disabling an instrument, 177

- disabling tests by instrument on the Test status screen, 181
- disabling tests by type of analysis on the Test status screen, 182
- disabling tests on the Instrument status screen, 178
- enabling an instrument, 177
- enabling tests by instrument on the Test status screen, 181
- enabling tests by type of analysis on the Test status screen, 182
- enabling tests on the Instrument status screen, 178
- functional description, 89
- logging on, 110
- overview, 48
- roles and permissions, 162
- searching for samples and sample details, 170
- technical data, 100
- user interface, 162
- viewing connections, 184
- viewing messages, 174
- viewing the instrument status, 176
- viewing the test status, 181
- Track Workflow Manager interface
 - TSM workflow, 86
- transportation, installation, disassembly, and disposal
 - description of, 62
- Troubleshooting
 - overview, 249

U

- unloading
 - analyzer-specific racks, 201
 - rack in the module drawer, 79
 - samples from FlexRacks, 197
- use or function
 - GLP systems Track, 33

- using drawers with FlexRacks
 - description of, 73
- using racks
 - description of, 78

V

- viewing
 - connections to TWM, 184
 - connections to TWM on TSM, 143
 - information about an area in the module, 77
 - instrument status (TWM), 176
 - messages (TWM), 174
 - test status (TWM), 181

W

- Waiting queues tab (TSM)
 - element descriptions, 159
- warranty
 - description of, 15
- weekly cleaning procedures
 - CARs, 231
 - clean the module covers, 239
 - clean the monitor, 238
 - clean the sensors, 231
 - clean the track hoods, 229
 - Input/Output Module, 238
 - track, 228
- What's new
 - GLP systems Track, 8
 - software features and changes, 8
- workflow
 - description of, 85
- Workflow screen (TWM)
 - description of, 184

