



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

80003968-108

 ABBOTT
DRAFT
Internal Use Only

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READ ME FIRST

Foreword

This operations manual is intended for operators of 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. Read and observe the manuals for each component and the connected analyzers.

The features in this manual were introduced in Track 1.4.X, Track Sample Manager 5.2.X, Track Workflow Manager 3.3.X, Track Manager Operating System 5.2.X, and Input/Output Module 2.7.X.

NOTE: An X in the software version number represents software changes that have no impact on this manual.

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 labcentral.corelaboratory.abbott.

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 10
- [System security](#), page 11
- [Customer service](#), page 13
- [Intended use](#), page 14
- [Proprietary statement](#), page 15
- [Disclaimers](#), page 16
- [GLP systems Track warranty statement for USA customers only](#), page 17
- [GLP systems Track agency approvals](#), page 18
- [Intellectual Property statement](#), page 20
- [Key to symbols](#), page 21
- [Manufacturer and distributor](#), page 26

What's new

Track Sample Manager (TSM)

The following new features were introduced with TSM software 5.2.X.

- Language options are no longer configured through the TSM application. See the updated topic [Log on to the Track Sample Manager \(TSM\)](#) (page 128).
- New features were added to support temperature monitoring for Archive Storage Units. See the following new and updated topics:
 - [Module controller screen element descriptions \(TSM\)](#) (page 150)
 - [View temperature statistics for an Archive Storage Unit \(TSM\)](#) (page 161)
 - [Monitoring tab element descriptions \(TSM\)](#) (page 191)
- New features were added to the **Firmware** tab to display additional version information sent by module and segment controllers. See the updated topic [Firmware tab element descriptions \(TSM\)](#) (page 161).
- New features were added to improve the handling and detection of CARs that are removed from the track. See the updated topics [Sample Detail screen element descriptions \(TSM\)](#) (page 167) and [Search tab \(CARs\) element descriptions \(TSM\)](#) (page 177).
- Message codes [28133](#) (page 357), [70127](#) (page 385), [71020](#) (page 389), and [81036](#) (page 402) were added.
- Message code [81035](#) (page 402) was added to replace message code 70094.

Track Workflow Manager (TWM)

The following new features were introduced with TWM software 3.3.X.

- Language options are no longer configured through the TWM application. See the updated topics [Log on to the Track Workflow Manager \(TWM\)](#) (page 130) and [Parameter screen element descriptions \(TWM\)](#) (page 259).
- New features were added to the sample search functionality, including search criteria and functions to support requesting samples from Archive Storage Units. See the following new and updated topics:
 - [Sample search screen \(TWM\)](#) (page 205)
 - [Sample search screen element descriptions \(TWM\)](#) (page 205)
 - [Sample search result screen element descriptions \(TWM\)](#) (page 207)
 - [Select tests screen element descriptions \(TWM\)](#) (page 208)
 - [Sample details screen element descriptions \(TWM\)](#) (page 210)
 - [Search for samples and sample details \(TWM\)](#) (page 213)

- New features were added to enable the recapping of sample tubes prior to routing them to the Buffer Module and to support upgrading the priority of a sample to HIGH for all of its routes when the sample has at least one order for a high-priority test. See the updated topics [Fluid types details screen element descriptions \(TWM\)](#) (page 235) and [Tests screen element descriptions \(TWM\)](#) (page 238).
- A new option was added to the batch processing functionality for samples with only batch tests remaining. See the updated topic [Batch screen element descriptions \(TWM\)](#) (page 244).
- Message codes [83166](#) (page 421), [83167](#) (page 421), and [83168](#) (page 421) were added.

Track Manager Operating System (TMOS)

The following new features were introduced with TMOS software 5.2.X.

- Administrator-level access has been enabled on the Setup and Maintenance console. See the following new topics:
 - [Track Manager Operating System user interface](#) (page 74)
 - [Log on to the Setup and Maintenance console \(TMOS\)](#) (page 79)
 - [Basis OS screen \(TMOS\)](#) (page 80)
 - [Basis OS screen element descriptions \(TMOS\)](#) (page 81)
 - [Server Properties screen element descriptions \(TMOS\)](#) (page 81)
 - [HTTPS Management screen element descriptions \(TMOS\)](#) (page 82)
 - [System Information screen element descriptions \(TMOS\)](#) (page 83)
 - [Prepare for Reboot screen element descriptions \(TMOS\)](#) (page 83)
 - [TSM screen \(TMOS\)](#) (page 84)
 - [TSM screen element descriptions \(TMOS\)](#) (page 84)
 - [TWM screen \(TMOS\)](#) (page 85)
 - [TWM screen element descriptions \(TMOS\)](#) (page 85)
 - [View licenses \(TMOS\)](#) (page 86)
- Improvements were made to the user interface of the user management console. See the updated topics [Create a new TSM or TWM user \(TMOS\)](#) (page 74) and [Edit a TSM or TWM user \(TMOS\)](#) (page 76).

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 285
- [Hazards](#), page 289

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 network-connected device not managed by Abbott [such as a keyboard, video, and mouse (KVM) switch or a Wi-Fi dongle] is connected to an Abbott product, cybersecurity risk can be introduced to the product in the case of a network-level cybersecurity event. For these types of connections, Abbott relies on the cybersecurity controls of the laboratory network. Customers should mitigate risk by ensuring that unauthorized personnel cannot access such devices and by securing the laboratory network on which the devices are located.
- When a server with the Track Manager Operating System (TMOS) hosting the TSM or TWM application is decommissioned or disposed, the customer should remove all PHI or sensitive data from the server.
- Although each GLP systems Track storage drive is reformatted to ensure that confidential information is removed before replacement of the drive or associated computer and before

removal of the GLP systems Track from the customer site, customers may request to retain the deinstalled drive for disposal according to their facility procedures.

- Users should log off from the TMOS, 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 (© 2023-2026 Abbott. All rights reserved.) and software programs are protected by copyright.

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

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Related information...

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

Disclaimers

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.

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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 61010-2-011 Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 2-011: Particular requirements for refrigerating 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/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 60825-1 Safety of laser products - Part 1: Equipment classification and requirements
- 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
- EN 50419 Marking of electrical and electronic equipment (EEE) in respect to separate collection of waste EEE (WEEE)
- 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)
- 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 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 11: License-Exempt Radio Apparatus: Category I Equipment



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

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

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

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

Related information...

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

Intellectual Property statement

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

Related information...

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

Key to symbols

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

Harmonized symbols

Directive 2012/19/EU

Symbol	Description
	WEEE: Waste Electrical and Electronic Equipment 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.

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

Continued on next page...

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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 7000

Symbol	Description
	Lock
	Unlock

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-W006

Symbol	Description
	Caution: Magnetic field

ISO 7010-W020

Symbol	Description
	Caution: Overhead obstruction

ISO 7010-W022

Symbol	Description
	Caution: Sharp element

ISO 15223-1

Symbol	Description
	This product contains dry natural rubber
	Date of manufacture

Continued on next page...

...Continued from previous page

Symbol	Description
	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

Continued on next page...

...Continued from previous page

Symbol	Description
FOR USE WITH	Identifies products to be used together.
	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
	Caution: Risk of fire
	Caution: Magnetic field. Restrictions for individuals with pacemakers.

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, Abbott Automation Solutions GmbH is responsible for the general functionality and performance. 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

SYSTEM DOCUMENTATION

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 28
- [Conventions for the operations manual](#), page 30
- [Operations manual description](#), page 32
- [Operations manual use](#), page 33

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 - Description of component replacement
Section 10: Troubleshooting	- Troubleshooting basics - Probable causes and corrective actions for message codes - Probable causes and corrective actions for observed problems
Appendix A: List numbers	Information about list numbers
Revision history	History of revisions to the operations manual

Continued on next page...

...Continued from previous page

Section	Description
Glossary	Alphabetical listing of terms that are used in the operations manual
Index	Alphabetical listing of subject matter with references to the location of information

Related information...

- [System documentation](#), page 27

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 27

Operations manual description

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

Related information...

- [System documentation](#), page 27

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 27

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1. USE OR FUNCTION

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 barcode 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 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 barcodes
- Transporting and tracking
- Preparation for removal

Optional sample processing steps are available with additional modules.

NOTE: Some modules may not be available in all countries. Contact your local representative for more information.

NOTE: The GLP systems Track is designed to support accurate sample tracking and rack identification within the LAS. Laboratory personnel have the responsibility to ensure accurate sample tracking outside the LAS.

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 37
- [Track overview](#), page 39
- [CAR overview](#), page 44

- [Track Sample Manager overview](#), page 49
- [Track Workflow Manager overview](#), page 50
- [Input/Output Module overview](#), page 51
- [RackPorts overview](#), page 64
- [FlexRacks overview](#), page 65

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, and maintenance lanes for defective or faulty CARs.
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)	Functions as 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 35
- [Communication paths](#), page 37

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.



CAUTION: Risk of delay in sample processing. Interruptions to the communication paths can have an impact on sample processing, leading to a delay in results. Observe the communication status on the TSM user interface and resolve any TSM messages codes or observed problems as needed. Contact an Abbott Laboratories representative or an authorized service representative for guidance on TSM and TWM configuration and GLP systems Track automation workflow.

Related information...

- [GLP systems Track overview](#), page 37
- [Track Workflow Manager interface](#), page 106

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 SAL Alinity ci.

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 35
- [Track sections](#), page 39
- [Lane elements](#), page 41
- [Layout tab element descriptions \(TSM\)](#), page 159
- [Open and close the track hoods](#), page 132
- [Open and close the front and rear module covers](#), page 268

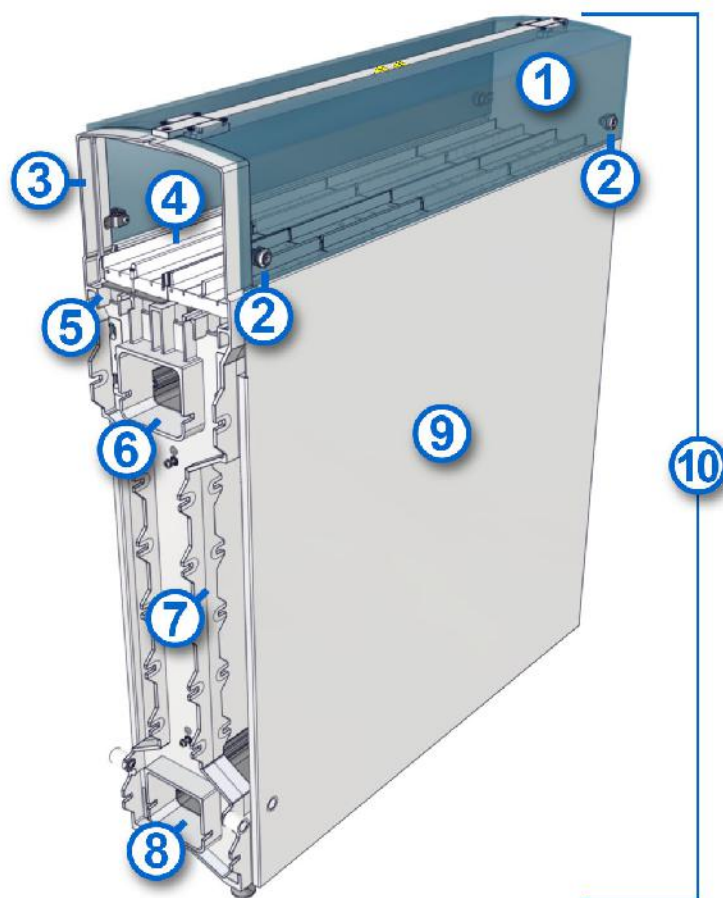
Track sections

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

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

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

Figure 2: Track section and support system



Legend:

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

Related information...

- [Track overview](#), page 39
- [Open and close the track hoods](#), page 132

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 39
- [Active lane elements](#), page 41
- [Passive lane elements](#), page 41
- [Special lane elements](#), page 42

Active lane elements

Active lane 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 41

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...

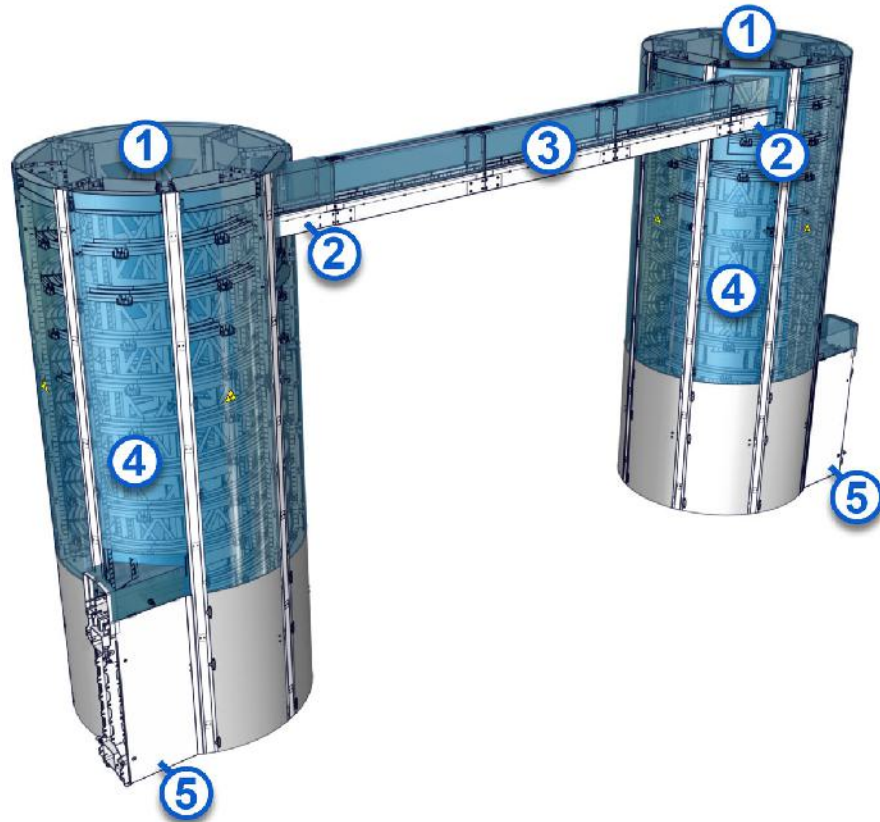
- [Lane elements](#), page 41

Special lane elements

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

Roundabout	Combines the attributes of both the active and passive T-elements, which allow CARs to change direction, and includes U-turn capabilities. Roundabouts can be part of track sections that are low level along the floor or high level (HL) along the ceiling and include the following variations: • Roundabout 3-entry • Roundabout 3-entry HL • Roundabout 4-entry HL
Spiral tower	Enables vertical movement of CARs between low-level and high-level track sections. Spiral towers are passive lane elements that are available as left and right variations. Each spiral tower contains two lanes that allow bidirectional movement of CARs.

Figure 3: Left and right spiral towers

**Legend:**

1. Spiral towers with hoods
2. High-level entrance or exit
3. Connection bridge
4. Spiral doors
5. Low-level entrance or exit

Related information...

- [Lane elements](#), page 41

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.

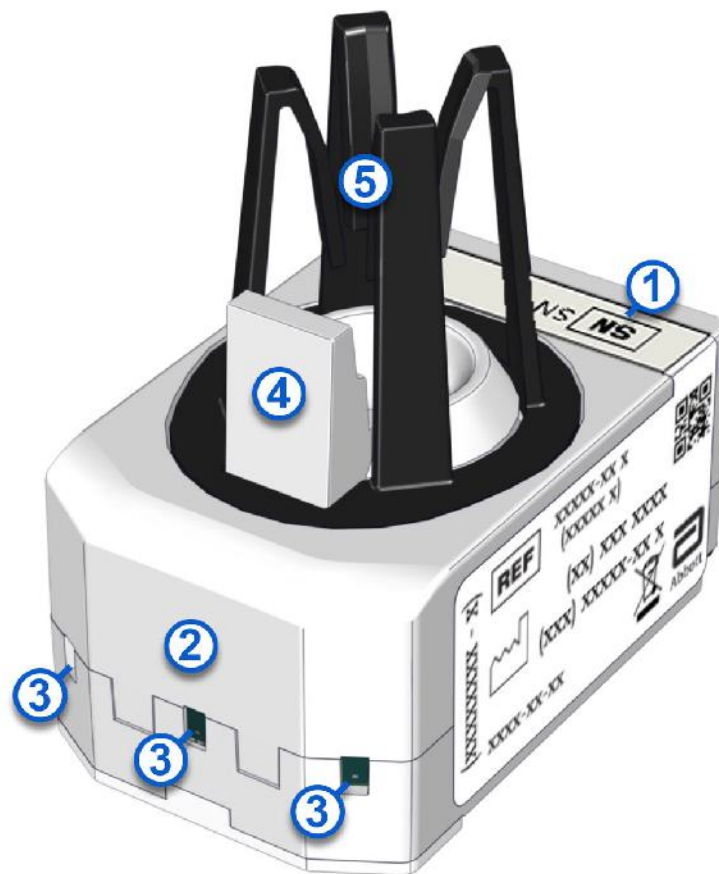
Related information...

- [Use or function](#), page 35
- [CAR design and function](#), page 44
- [Descriptions of CAR charge statuses](#), page 47

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 44
- [Clean the sample holder](#), page 312
- [Clean the drive wheel and the wheel arch](#), page 313
- [Sample tube technical data](#), page 116
- [Start the GLP systems Track](#), page 124
- [CAR maintenance](#), page 309

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 44

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 35
- [Track Workflow Manager overview](#), page 50
- [Control system](#), page 104

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
- Ability to be customized to meet 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 35
- [Track Sample Manager overview](#), page 49

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 barcodes

Output configuration includes the following features:

- Configurable areas for samples with errors, such as barcode reader errors, and for sorting of samples according to customer specification
- Unloading of samples from CARs into racks, followed by the reading of sample barcodes 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 barcodes, no orders, or other errors) into specified error areas

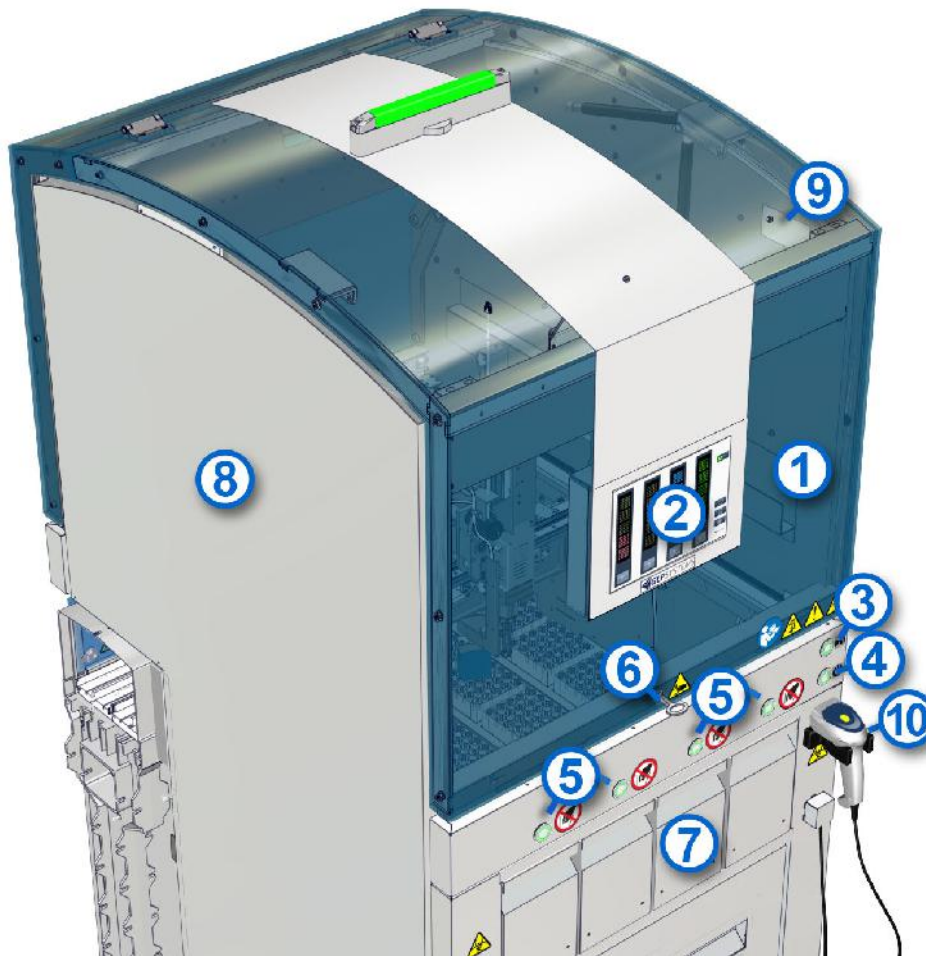
Related information...

- [Use or function](#), page 35
- [Input/Output Module design and function](#), page 51
- [Descriptions of module statuses](#), page 62
- [Descriptions of drawer statuses](#), page 62

Input/Output Module design and function

The Input/Output Module (IOM) has 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.



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.

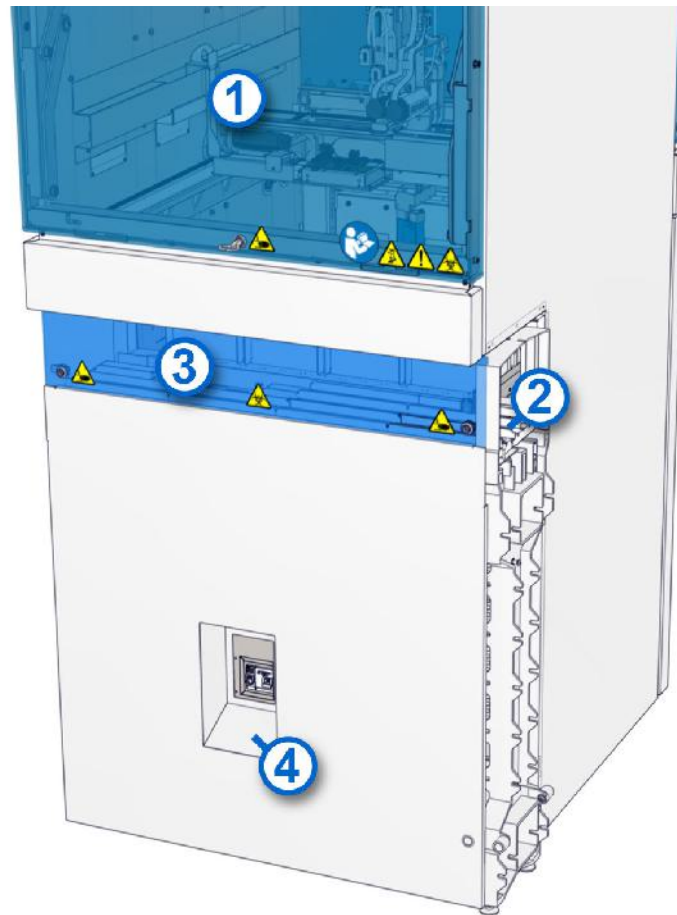


CAUTION: Damage from sharp and hard objects. Sharp and hard objects can damage the surface of the monitor.

3. Online/Offline push button with pause function: Transitions the module status to Online, Offline, or Pause.
4. On/Off push button: Powers on and powers off the module.
5. Drawer push buttons: Open and close 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, also identified as sectors, 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.
10. Handheld barcode reader: Enables the scanning of rack IDs in the drawers. The handheld barcode reader is an optional feature.

Figure 7: Exterior rear view of the IOM



Legend:

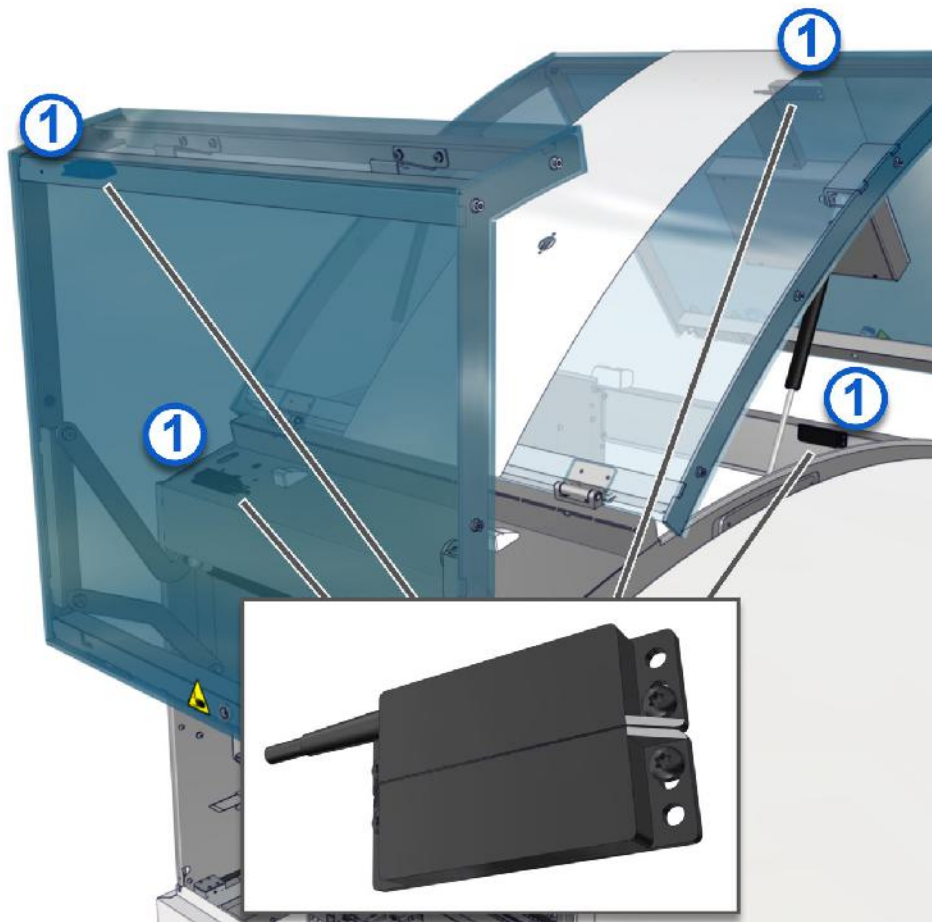
1. Rear module cover: Protects the operator from injury and keeps the loading area free from dust.



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. Track side casing cutout: Provides access to the rear module switches.

Figure 8: Module contact sensors



Legend:

1. Module contact sensors: Detect open module covers. Opening the module covers slows down the robot movement. The module covers and track hoods provide protection against direct access.

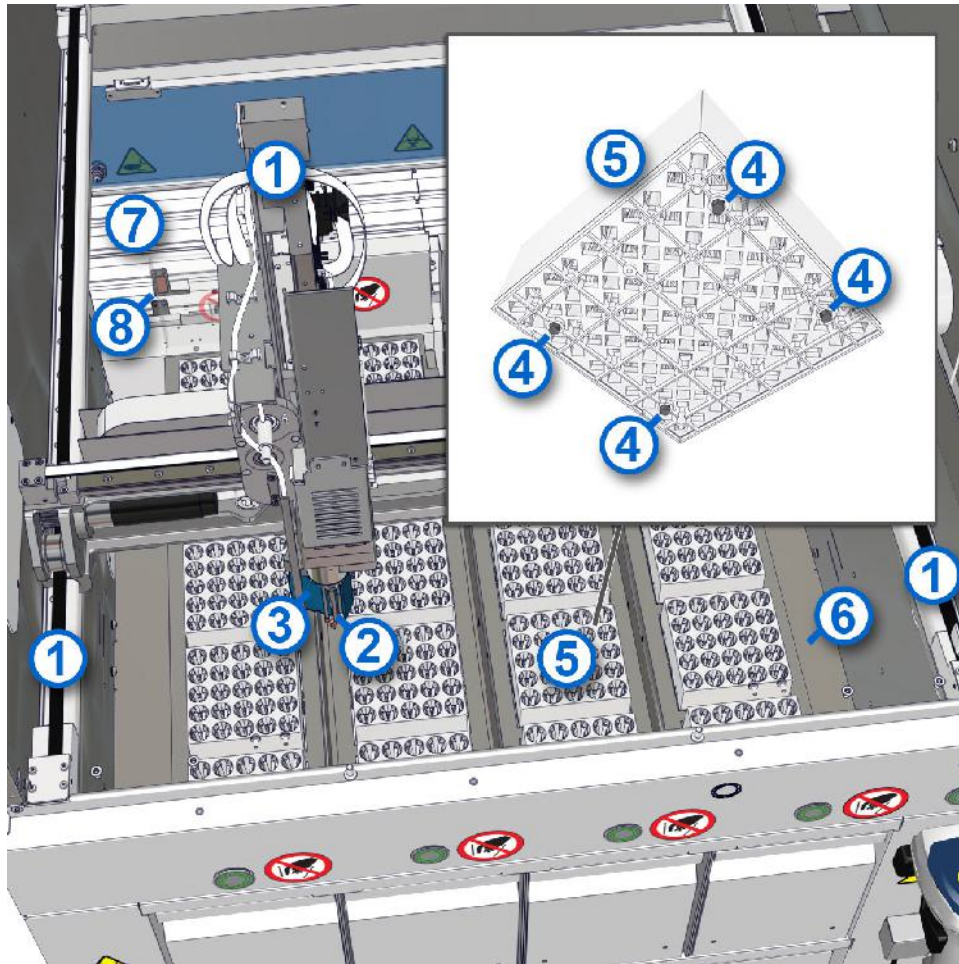


CAUTION: To prevent operator injury, the module status must be transitioned to Offline before the module interior is accessed.



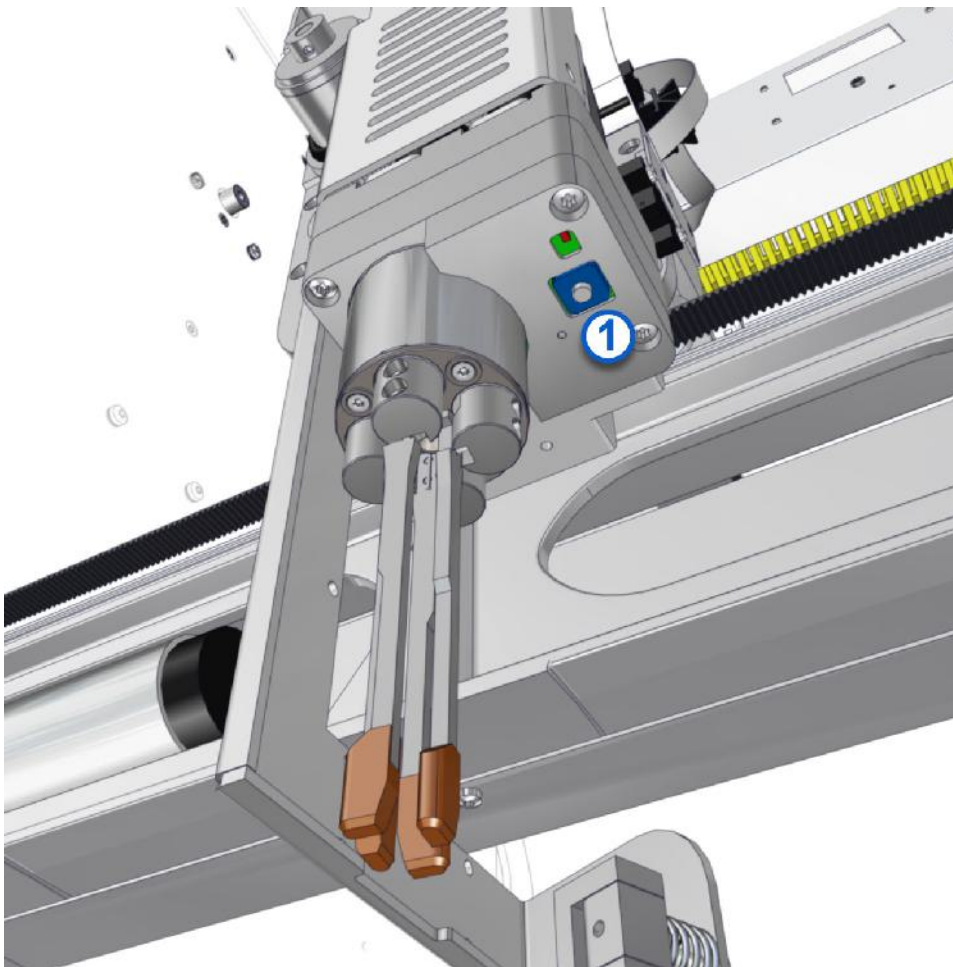
CAUTION: Moving parts. The operator may be injured by moving parts inside the module even after placing the module offline. Be aware of moving parts. Do not reach into the paths of moving parts.

Figure 9: 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 gripper: Loads and unloads sample tubes in CARs and racks.
3. Sample barcode reader: Reads the sample barcodes and sends the information to the Track Sample Manager. The sample barcode reader is located at the lower end of the robot.
4. Permanent magnets: Secure FlexRacks on RackPorts.
5. FlexRacks: Hold samples in an upright position.
6. RackPort: Supports FlexRacks in the drawers.
7. Track: Composed of lane elements and serves as the structure along which CARs move to transport samples to modules.
8. AccessPoint: Stops and holds CARs for processing such as reading barcodes, loading tubes, and unloading tubes. One or two AccessPoints are located on the adjacent track.

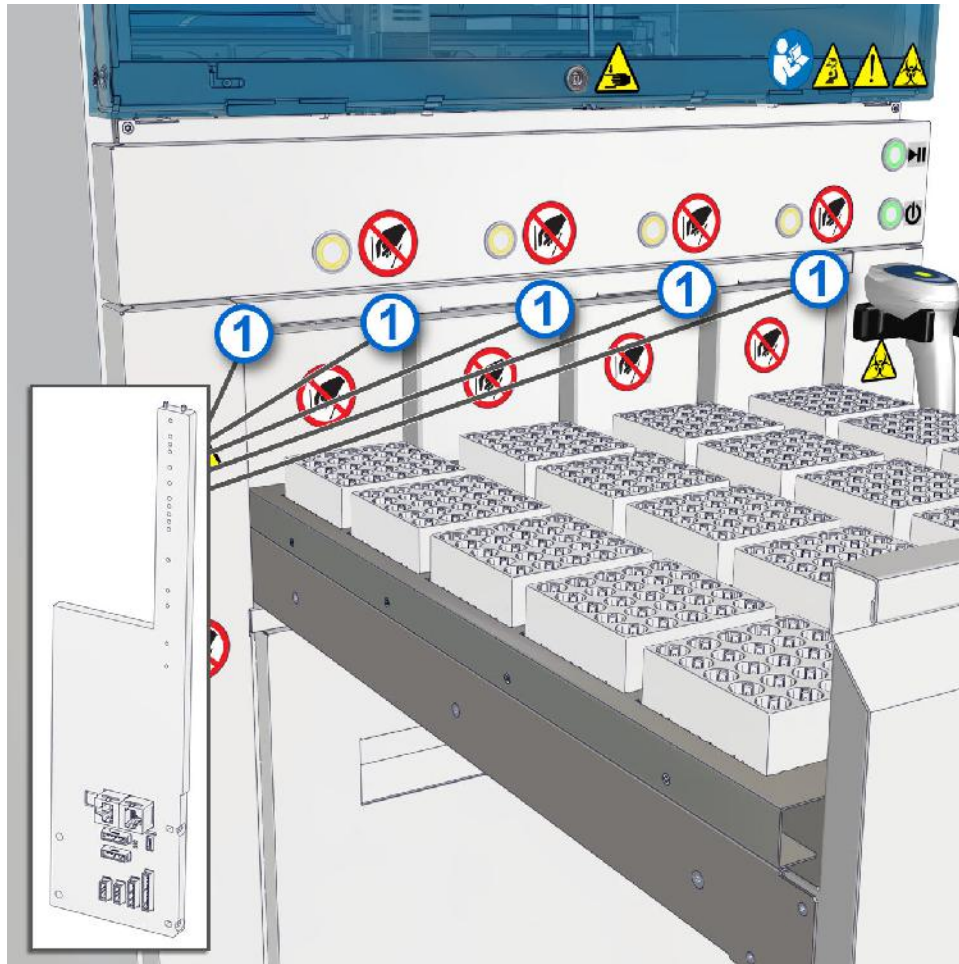
Figure 10: Release button



Legend:

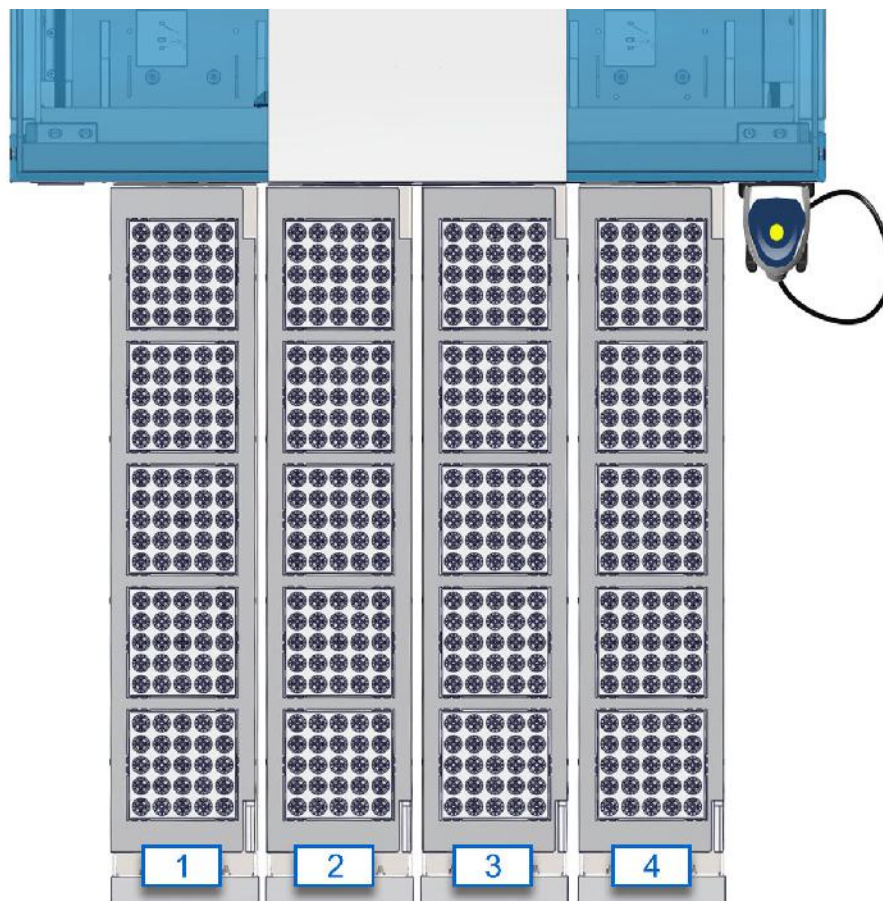
1. Release button: Used to open the robot gripper manually.

Figure 11: Photoelectric sensors

**Legend:**

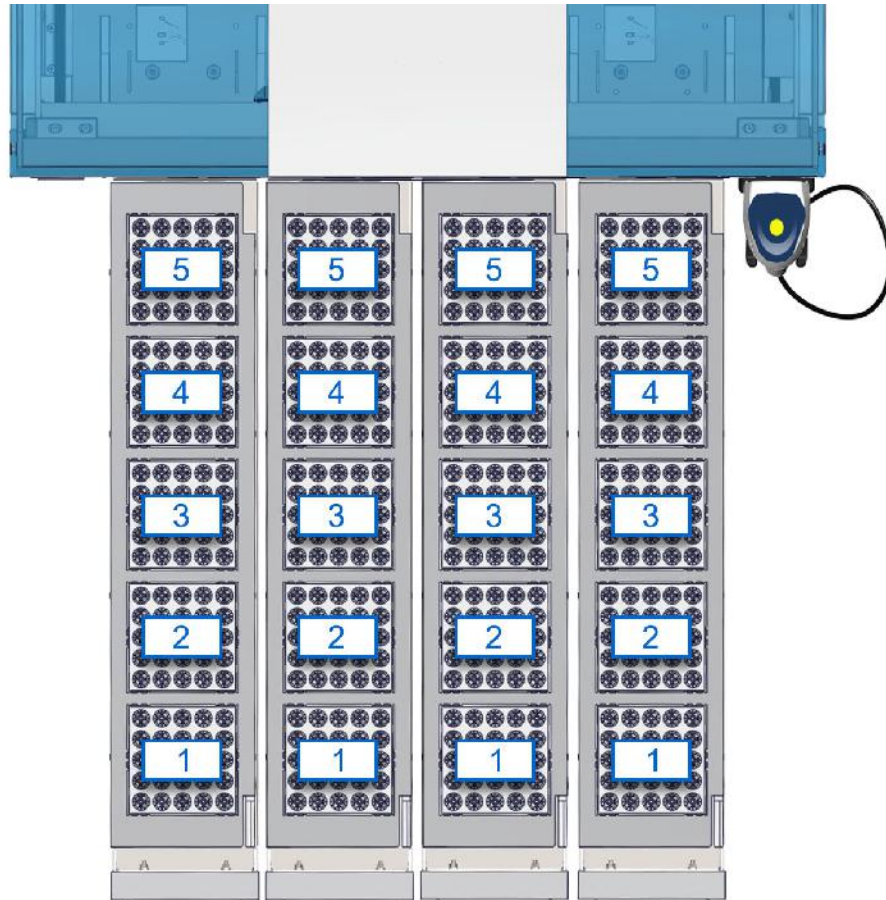
1. Photoelectric sensors: Detect the loading status of RackPorts and any manual intervention in the drawer. Photoelectric sensors are used to stop the closing operation if an object or a body part is placed between the drawers and the housing. These sensors are located on the sides of the drawer inserts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

Figure 12: Drawer positions



NOTE: Drawer or sector positions are arranged from left to right.

Figure 13: Rack positions



NOTE: In a drawer or sector, rack positions are arranged from the front end (1) to the rear (5).

Related information...

- [Input/Output Module overview](#), page 51
- [Control systems](#), page 59
- [Monitor](#), page 60
- [Barcode readers](#), page 60
- [Covers, hoods, and sensors](#), page 286

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

- Barcode
- Tube diameter for transport by robot

Monitoring Manual intervention in the robot work area

Related information...

- [Input/Output Module design and function](#), page 51
- [Covers, hoods, and sensors](#), page 286

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 51

Barcode readers

Sample identification

In accordance with Clinical and Laboratory Standards Institute (CLSI) document AUTO2-A2, a sample is identified by a barcode. For reliable sample identification, barcodes on sample tubes are read during transport to or from the CAR by the barcode reader located at the lower end of the robot gripper.

A maximum of four different barcode symbologies 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 barcodes are routed to a designated area in the Input/Output Module.



CAUTION: Incorrectly applying a barcode may constitute a health hazard for patients.
Illegible or incorrectly applied barcodes cause incorrect patient results. Barcodes with

checksums are recommended for use on the laboratory automation system. For more information, see the sample barcode label technical data in this manual.

NOTE: Contact an Abbott Laboratories representative or an authorized service representative to configure the sample barcode reader for different barcode types.

Rack identification

The optional handheld barcode reader enables the reading of individual rack IDs in a RackPort in the module drawer. Although the handheld barcode reader remains active when the module is on and can be used to verify barcode validity at any time, transfer of information to the control system occurs only during the manual rack identification workflow, which is initiated and managed on the touchscreen user interface.

A maximum of four different barcode symbologies can be read:

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

NOTE: Contact an Abbott Laboratories representative or an authorized service representative to configure the handheld barcode reader. Modifying this configuration can cause the device to malfunction.

The following guidelines support optimal handheld barcode reader performance:

- The orientation of the handheld barcode reader aligns with the orientation of the rack ID.
- The green aiming dot projected by the handheld barcode reader is aimed at the center of the barcode.
- Scanning distance is appropriate for reliable barcode detection.

Refer to the RackPorts Product Information Sheet for information about specific RackPorts.

NOTE: The RackPort or individual racks may need to be removed to scan the rack IDs. Before closing the drawer, ensure that the RackPort is installed correctly and that all racks are locked in position in the RackPort.

IMPORTANT: If an original rack ID label has a two-dimensional barcode, is illegible, or is incorrectly applied, print a new linear barcode to affix to a flat surface on the rack. It is recommended to print a barcode label with the same encoded value as the original label and to verify the validity of the newly printed barcode prior to applying it to the rack. For optimal resolution guidelines, refer to CLSI document AUTO2-A2. For information on possible discrepancies between printed barcodes and their encoded values, refer to documentation from the rack manufacturer.

Related information...

- [Input/Output Module design and function](#), page 51
- [Sample and rack barcode label technical data](#), page 113

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 51

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 51

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.

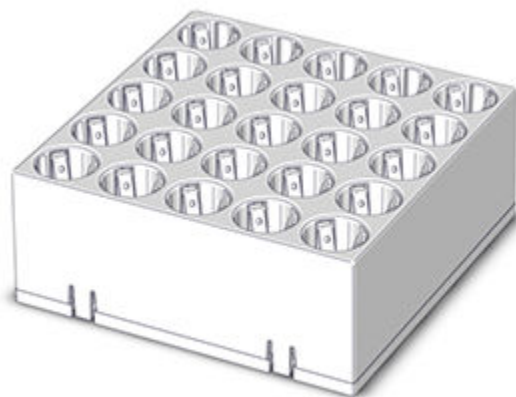
Related information...

- [Use or function](#), page 35
- [Sample tube technical data](#), page 116

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 14: FlexRack



Sample tube positions are arranged from 1 to 25 from the lower right (position 1) to the upper left (position 25) of the FlexRack.

Figure 15: Sample tube positions



Related information...

- [Use or function, page 35](#)

2. INSTALLATION PROCEDURES AND SPECIAL REQUIREMENTS

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 68
- [Track Manager Operating System user interface](#), page 74
- [Input/Output Module configuration](#), page 88

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 67
- [Track installation](#), page 69
- [Spiral tower installation requirements](#), page 69

- [Input/Output Module installation requirements](#), page 70
- [Typical floor loading](#), page 72

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 68
- [Laboratory automation system technical data](#), page 112
- [Track technical data](#), page 119

Spiral tower installation requirements

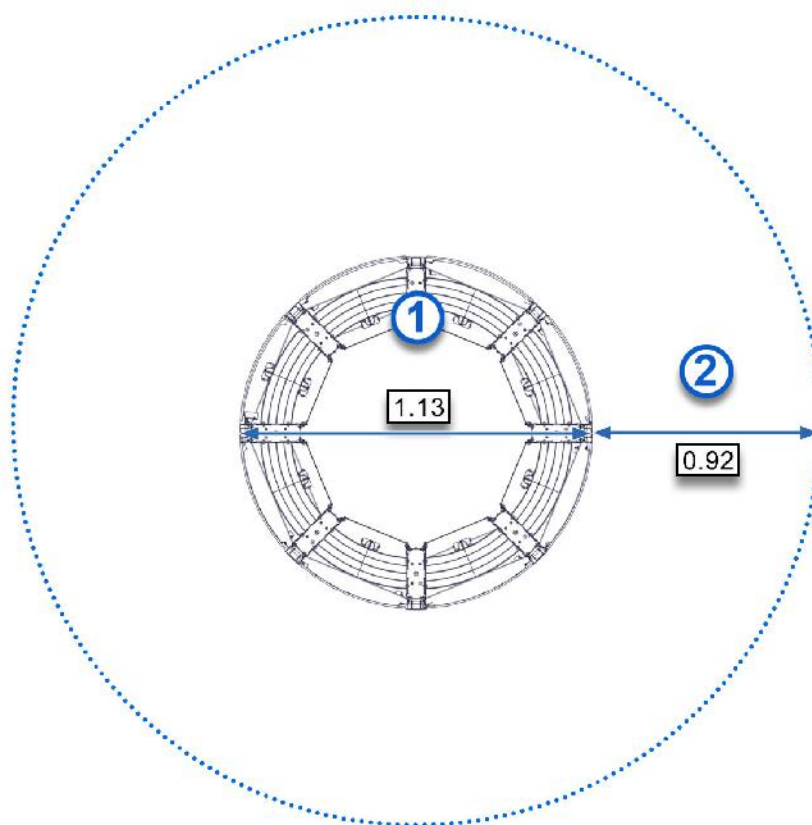
Spiral towers may only be installed indoors. Contact an Abbott Laboratories representative or an authorized service representative for more information about service requirements. Facilities must fulfill the floor area and height requirements.

NOTE: The specified floor area measurements are recommendations only. Contact an Abbott Laboratories representative or an authorized service representative for more information.

Table 5: Floor area specifications

Evenness tolerance requirement	Permissible deviation: ± 5 mm over 15 m
Material requirement	Incompressible material such as concrete

Figure 16: Floor area measurements in meters



Legend:

1. Spiral tower
2. Work and service area

Related information...

- [Transportation, installation, disassembly, and disposal](#), page 68
- [Spiral tower technical data](#), page 120

Input/Output Module installation requirements

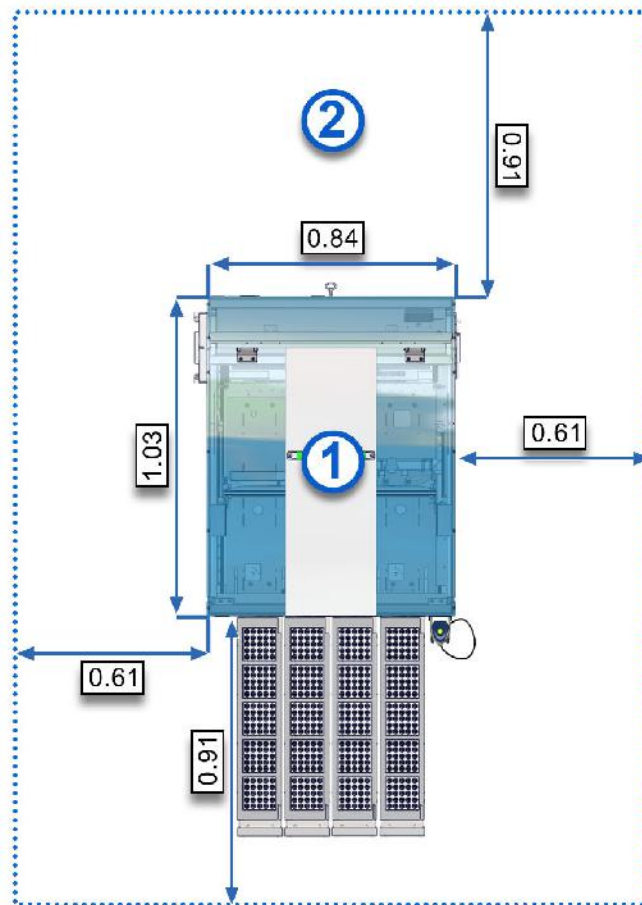
The Input/Output Module (IOM) may only be installed indoors. Water connections are not required. Contact an Abbott Laboratories representative or an authorized service representative for more information about service requirements. Facilities must fulfill the floor area and height requirements.

NOTE: The specified floor area measurements are recommendations only. Contact an Abbott Laboratories representative or an authorized service representative for more information.

Table 6: Floor area specifications

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

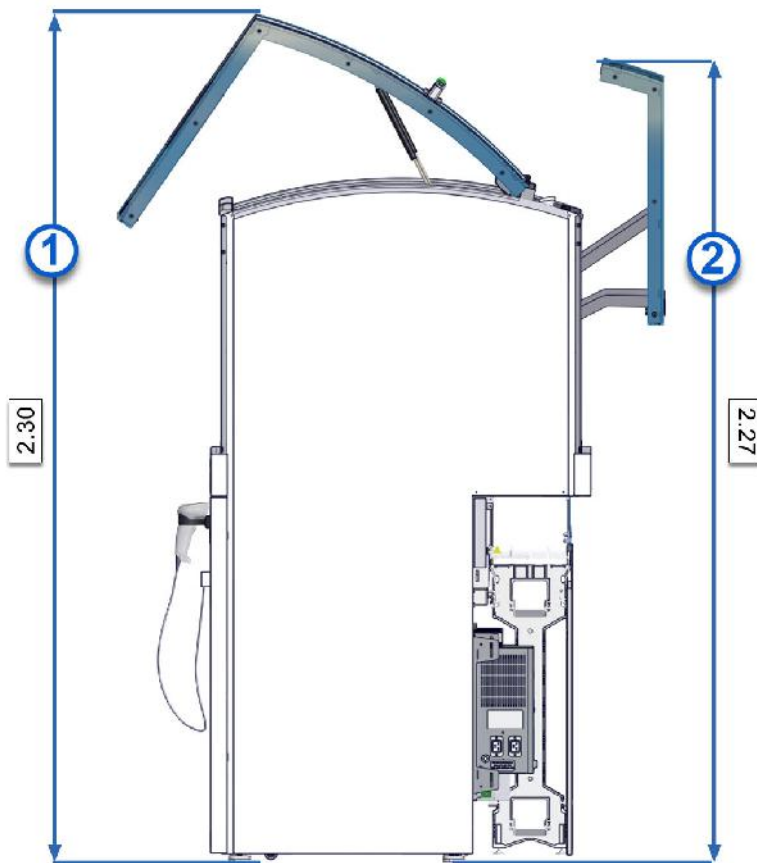
Figure 17: Floor area measurements in meters



Legend:

1. IOM
2. Work and service area

Figure 18: Height measurements in meters



Legend:

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

Related information...

- [Transportation, installation, disassembly, and disposal](#), page 68
- [Input/Output Module technical data](#), page 122

Typical floor loading

Floor loading conditions must be considered when the laboratory is planned. For example, an 80 cm track section with both a 5 V and a 24 V power supply along with a segment controller has an area of 0.19 m² and weighs 44 kg.

The laboratory has the responsibility to ensure that the installation site accommodates adequate floor-loading capacity, provides a structurally sound load-bearing surface, and

complies with required evenness tolerances to safely support the laboratory automation system.

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 68

Track Manager Operating System user interface

On the Track Manager Operating System (TMOS), the administrator can manage Track Sample Manager (TSM) and Track Workflow Manager (TWM) user accounts and access the Setup and Maintenance console to configure TSM and TWM settings or reboot the server.

Related information...

- [Installation procedures and special requirements](#), page 67
- [Create a new TSM or TWM user \(TMOS\)](#), page 74
- [Edit a TSM or TWM user \(TMOS\)](#), page 76
- [Reset a TSM or TWM user password \(TMOS\)](#), page 77
- [Change a personal TSM or TWM password \(TMOS\)](#), page 78
- [Log on to the Setup and Maintenance console \(TMOS\)](#), page 79
- [Basis OS screen \(TMOS\)](#), page 80
- [TSM screen \(TMOS\)](#), page 84
- [TWM screen \(TMOS\)](#), page 85
- [View licenses \(TMOS\)](#), page 86

Create a new TSM or TWM user (TMOS)

Prerequisite

Web access is configured on a workstation in the laboratory with access to the user management console.

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

User access level

User management console administrator

NOTE: Contact an Abbott Laboratories representative or an authorized service representative for more information about access to the user management console.

Perform this procedure on the user management console to create a new TSM or TWM administrator, operator, or monitor.

1. Launch the web browser.

Use of the most recent browser version with security patches is recommended. Comply with the information technology requirements of the facility.
2. Type one of the following user-defined uniform resource locators (URLs) in the address bar of the web browser:
 - <https://<GLP Firewall WAN IP>:7000/sso/admin/abbott/console> (recommended)
 - <http://<GLP Firewall WAN IP>:7000/sso/admin/abbott/console>
3. Press the **Enter** key.
4. In the **Sign in to access this site** window, type the username **kc_admin** and password.
5. Tap **Sign in** to display the GLP SYSTEMS TRACK user administration portal.

6. Tap **Users** in the menu on the left side to display the Users overview screen.
7. Tap the **Add user** button.
8. On the Create user screen, enter the username of the new user.
9. Tap **Create**.
10. To set a password for the new user, tap the **Credentials** tab on the User details screen.
11. Tap the **Set password** button.
12. In the **Set password for user** window, enter a unique password for the new user.

The password must meet the configured complexity requirements:

- The default minimum number of required characters is 8 characters.
- The default minimum number of uppercase characters is one character.
- The default minimum number of lowercase characters is one character.
- The default minimum number of numeric characters is one character.
- The default minimum number of special characters is one character.

NOTE: Tap the **Show Password** button to view the password that was entered.

13. Reenter the password to confirm it.
14. If necessary, specify that the password of the new user is not **Temporary**.

NOTE: The default is **Temporary**. Comply with the information technology requirements of the facility.

15. To save the new user credentials, tap **Save**.
16. In the **Set password?** window, tap **Save password**.
17. To define the access levels of the new user, tap the **Groups** tab on the User details screen.
18. Tap the **Join Group** button.
19. On the Join groups for user screen, select the user access levels based on the TSM and TWM roles and permissions described in this manual. The following roles are available:
 - **tsm_administrator**
 - **tsm_monitor**
 - **tsm_operator**
 - **twm_administrator**
 - **twm_operator**
 - **setup_administrator**
20. To save the access levels of the new user, tap **Join**.
21. To create another new user, return to the Users overview screen and repeat steps 7 (page 75) through 20 (page 75).

Related information...

- [Track Manager Operating System user interface, page 74](#)

Edit a TSM or TWM user (TMOS)

Prerequisite

Web access is configured on a workstation in the laboratory with access to the user management console.

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

User access level

User management console administrator

NOTE: Contact an Abbott Laboratories representative or an authorized service representative for more information about access to the user management console.

Perform this procedure on the user management console to edit the basic information, access level, or groups of a TSM or TWM user.

NOTE: TSM and TWM users cannot edit the level and status of their profiles on the user management console.

1. Type one of the following user-defined uniform resource locators (URLs) in the address bar of the web browser:
 - <https://<GLP Firewall WAN IP>:7000/sso/admin/abbott/console> (recommended)
 - <http://<GLP Firewall WAN IP>:7000/sso/admin/abbott/console>
2. Press the **Enter** key.
3. In the **Sign in to access this site** window, type the username **kc_admin** and password.
4. Tap **Sign in** to display the GLP SYSTEMS TRACK user administration portal.
5. Tap **Users** in the menu on the left side to display the Users overview screen.
6. In the **User list** tab, tap a username from the **Username** column to edit.
7. On the User details screen, edit any of the following information:
 - **Details**
 - **Groups**

NOTE: TSM and TWM users can edit their own basic information on the user management console.

8. To edit another user, return to the Users overview screen and repeat steps 6 (page 76) and 7 (page 76).

Related information...

- [Track Manager Operating System user interface](#), page 74

Reset a TSM or TWM user password (TMOS)

Prerequisite

Web access is configured on a workstation in the laboratory with access to the user management console.

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

User access level

User management console administrator

NOTE: Contact an Abbott Laboratories representative or an authorized service representative for more information about access to the user management console.

Perform this procedure on the user management console to reset a TSM or TWM user password.

1. Launch the web browser.

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

2. Type one of the following user-defined uniform resource locators (URLs) in the address bar of the web browser:
 - <https://<GLP Firewall WAN IP>:7000/sso/admin/abbott/console> (recommended)
 - <http://<GLP Firewall WAN IP>:7000/sso/admin/abbott/console>
3. Press the **Enter** key.
4. In the **Sign in to access this site** window, type the username **kc_admin** and password.
5. Tap **Sign in** to display the GLP SYSTEMS TRACK user administration portal.
6. Tap **Users** in the menu on the left side to display the Users overview screen.
7. In the **User list** tab, tap the username from the **Username** column.
8. On the User details screen, tap the **Credentials** tab.
9. In the **Password** area, tap **Reset password**.
10. In the **Reset password for user** window, enter a unique password for the user.

The password must meet the configured complexity and lifecycle requirements:

- The default minimum number of required characters is 8 characters.
- The default minimum number of uppercase characters is one character.
- The default minimum number of lowercase characters is one character.
- The default minimum number of numeric characters is one character.
- The default minimum number of special characters is one character.
- The default number of password generations within which a password cannot be reused is 8.

NOTE: Tap the **Show Password** button to view the password that was entered.

11. Reenter the password to confirm it.
12. If necessary, specify that the password of the new user is not **Temporary**.

NOTE: The default is **Temporary**. Comply with the information technology requirements of the facility.

13. To save the user credentials, tap **Save**.
14. In the **Set password?** window, tap **Save password**.

Related information...

- [Track Manager Operating System user interface](#), page 74

Change a personal TSM or TWM password (TMOS)

Prerequisite

Web access is configured on a workstation in the laboratory with access to the user management console.

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

User access level

- TSM or TWM operator and administrator
- User management console administrator

NOTE: Contact an Abbott Laboratories representative or an authorized service representative for more information about access to the user management console.

Perform this procedure on the user management console to change a personal password.

1. Launch the web browser.

Use of the most recent browser version with security patches is recommended. Comply with the information technology requirements of the facility.
2. Type one of the following user-defined uniform resource locators (URLs) in the address bar of the web browser:
 - <https://<GLP Firewall WAN IP>:7000/sso/realms/abbott/account> (recommended)
 - <http://<GLP Firewall WAN IP>:7000/sso/realms/abbott/account>
3. Press the **Enter** key.
4. In the GLP SYSTEMS TRACK banner, tap **Sign in**.
5. Type the username and password.
6. In the **Account security** box, tap **Signing in**.
7. On the Signing in screen, tap **Update** in the **My password** area.
8. On the **Update password** screen, enter a unique password.

The password must meet the configured complexity and lifecycle requirements:

- The default minimum number of required characters is 8 characters.
- The default minimum number of uppercase characters is one character.
- The default minimum number of lowercase characters is one character.
- The default minimum number of numeric characters is one character.
- The default minimum number of special characters is one character.
- The default number of password generations within which a password cannot be reused is 8.

NOTE: Tap the **Show Password** button to view the password that was entered.

9. Tap **Submit**.

Related information...

- [Track Manager Operating System user interface](#), page 74

Log on to the Setup and Maintenance console (TMOS)

Prerequisite

Web access is configured on a workstation in the laboratory with access to the Track Manager Operating System (TMOS).

NOTE: Workstation system requirements are specified in the TMOS service manual.

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

User access level

Administrator

Perform this procedure to log on to the Setup and Maintenance console on TMOS.

1. Launch the web browser.

NOTE: TMOS 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 one of the following URLs to access the Setup and Maintenance screen:
 - <https://<GLP Firewall WAN IP>:7000/setup/> (recommended)
 - <http://<GLP Firewall WAN IP>:7000/setup/>
 - If the track system uses a dual-server setup where TSM and TWM are housed on separate servers, type one of the following URLs to access the TSM server Setup and Maintenance screen:
 - <https://<GLP Firewall WAN IP>:7000/setup/> (recommended)
 - <http://<GLP Firewall WAN IP>:7000/setup/>
 - If the track system uses a dual-server setup where TSM and TWM are housed on separate servers, type one of the following URLs to access the TWM server Setup and Maintenance screen:
 - <https://<GLP Firewall WAN IP>:7000/setup-twm/> (recommended)
 - <http://<GLP Firewall WAN IP>:7000/setup-twm/>
3. Press the **Enter** key.
The Sign in to your account screen is displayed.
 4. Type the username and password.
 5. Tap **Sign in**.
The Basis OS screen is displayed.

NOTE: Administrators should log off from the Setup and Maintenance console and close the web browser after each session.

Related information...

- [Track Manager Operating System user interface](#), page 74

Basis OS screen (TMOS)

From the Basis OS screen, the administrator can perform the following functions:

- Configure basic system settings
- Access TSM settings
- Access TWM settings

Related information...

- [Track Manager Operating System user interface](#), page 74
- [Basis OS screen element descriptions \(TMOS\)](#), page 81
- [Server Properties screen element descriptions \(TMOS\)](#), page 81
- [HTTPS Management screen element descriptions \(TMOS\)](#), page 82
- [System Information screen element descriptions \(TMOS\)](#), page 83
- [Prepare for Reboot screen element descriptions \(TMOS\)](#), page 83

Basis OS screen element descriptions (TMOS)

After the administrator successfully logs on to the Setup and Maintenance console, the Basis OS screen is displayed.

Elements



button

The **Exit** button logs off from the Setup and Maintenance console.

Basis OS tab

Navigates to the Basis OS screen.

TSM tab

Navigates to the TSM screen.

NOTE: The TSM tab is available if the track system uses a single-server setup where TSM and TWM are housed on the same server or on the TSM standalone server if the track system uses a dual-server setup where TSM and TWM are housed on separate servers.

TWM tab

Navigates to the TWM screen.

NOTE: The TWM tab is available if the track system uses a single-server setup where TSM and TWM are housed on the same server or on the TWM standalone server if the track system uses a dual-server setup where TSM and TWM are housed on separate servers.

Settings, Performance area

Function buttons

Server Properties...

Navigates to the Server Properties screen.

https...

Navigates to the HTTPS Management screen.

System Information...

Navigates to the System Information screen.

Reboot System...

Navigates to the Prepare for Reboot screen.

Related information...

- [Basis OS screen \(TMOS\)](#), page 80

Server Properties screen element descriptions (TMOS)

The Server Properties screen allows the administrator to configure the server ID. If the track system uses a dual-server setup where TSM and TWM are housed on standalone servers, the server IDs must be configured separately by accessing the Setup and Maintenance console on

each server. The Server Properties screen can be accessed from the Basis OS screen by tapping the **Server Properties...** button.

Set Server ID area

The Set Server ID area displays a text box that is used to enter or edit the unique name of the server. This name is used to identify the server throughout the Setup and Maintenance console.

Function buttons

- Set server ID** Enables the administrator to enter or edit the unique name of the server.
- Back** Navigates to the Basis OS screen.

Related information...

- [Basis OS screen \(TMOS\)](#), page 80

HTTPS Management screen element descriptions (TMOS)

The HTTPS Management screen allows the administrator to configure the user interfaces to use a secure transfer protocol and to upload the certificate. The HTTPS Management screen can be accessed from the Basis OS screen by tapping the **https...** button.

Elements

- use HTTP option** Allows the administrator to configure the user interfaces to use unencrypted hypertext transfer protocol (HTTP). This option is not recommended.
- use HTTPS option** Allows the administrator to configure the user interfaces to use hypertext transfer protocol secure (HTTPS). This option is recommended.
- Certificate File:** Displays the location of the certificate file.
- Key File:** Displays the location of the key file.
NOTE: The private key must be encoded in PKCS #8 syntax. Other formats are not supported.
- Common Name:** Displays the Internet protocol (IP) address used in the server uniform resource locator (URL).
NOTE: Ensure that this common name (typically the GLP Firewall WAN IP address) is added as a Subject Alternative Name (SAN) in the certificate file.



Expiration: Displays the expiration date of the certificate and if the certificate is still valid.

NOTE: The certificate must be renewed prior to the expiration date.

Function buttons

Choose files	Displays a button that is used to select one certificate (CRT) file and one key file to upload to the server.
Upload Certificate Files	Uploads the selected pair of certificate files to the server and updates the server to use the files for HTTPS.
View Certificate	Displays the CRT file.
View Keyfile	Displays the key file.
Back	Navigates to the Basis OS screen.

Related information...

- [Basis OS screen \(TMOS\)](#), page 80

System Information screen element descriptions (TMOS)

The System Information screen allows the administrator to download system log files. The System Information screen can be accessed from the Basis OS screen by tapping the **System Information...** button. If the track system uses a dual-server setup where TSM and TWM are housed on standalone servers, system log files must be accessed from the Setup and Maintenance console on each server.

System Information and Performance area

Function buttons

System LogFiles	Navigates to the System LogFiles screen, which bundles and compresses system log files into a single archive file and provides a download link for the archive file.
Back	Navigates to the Basis OS screen.

Related information...

- [Basis OS screen \(TMOS\)](#), page 80

Prepare for Reboot screen element descriptions (TMOS)

The Prepare for Reboot screen is displayed if the administrator taps the **Reboot System...** button on the Basis OS screen to reboot the server and restart applications. Before rebooting the server:

- Ensure there is no remaining workload on TSM and on TWM.
- Ensure that TSM and TWM are in the operation mode of Disconnected.
- On the Prepare for Reboot screen, the **User Name** and **Reason for reboot** fields are completed.

NOTE: If the track system uses a dual-server setup where TSM and TWM are housed on standalone servers, the servers and applications must be rebooted separately by accessing the Setup and Maintenance console on each server.

Function buttons

Reboot Reboots the server and restarts applications. Process information is displayed in the expandable **Reboot activity log** at the top of the screen.

Abort Cancels the operation.

Related information...

- [Basis OS screen \(TMOS\)](#), page 80

TSM screen (TMOS)

The TSM screen is displayed when the **TSM** tab is selected on the Basis OS screen. On the TSM screen, the administrator can start, test, or stop the TSM application.

NOTE: The TSM tab is available on the Setup and Maintenance console if the track system uses a single-server setup where TSM and TWM are housed on the same server or on the TSM standalone server if the track system uses a dual-server setup where TSM and TWM are housed on separate servers.

Related information...

- [Track Manager Operating System user interface](#), page 74
- [TSM screen element descriptions \(TMOS\)](#), page 84

TSM screen element descriptions (TMOS)

The TSM screen displays the following function buttons.

Function buttons

TSM Server area

Start Starts TSM.

NOTE: TSM generally starts automatically after the Track Manager Operating System is initialized.

Test	Verifies whether TSM is running.
Stop	Stops TSM.

NOTE: Before stopping TSM, ensure there is no remaining workload on TSM and that TSM is in the operation mode of Disconnected.

Settings area

Configure TWM / IM...	Navigates to the TWM connection settings screen, which can be viewed by the administrator but is editable only by the service user access level.
------------------------------	--

Related information...

- [TSM screen \(TMOS\)](#), page 84

TWM screen (TMOS)

The TWM screen is displayed when the **TWM** tab is selected on the Basis OS screen. On the TWM screen, the administrator can start, test, or stop the TWM application.

NOTE: The TWM tab is available on the Setup and Maintenance console if the track system uses a single-server setup where TSM and TWM are housed on the same server or on the TWM standalone server if the track system uses a dual-server setup where TSM and TWM are housed on separate servers.

Related information...

- [Track Manager Operating System user interface](#), page 74
- [TWM screen element descriptions \(TMOS\)](#), page 85

TWM screen element descriptions (TMOS)

The TWM screen displays the following function buttons.

Function buttons

TWM Server area

Start	Starts TWM. NOTE: TWM generally starts automatically after the Track Manager Operating System is initialized.
--------------	---

Test	Verifies whether TWM is running.
Stop	Stops TWM. NOTE: Before stopping TWM, ensure there is no remaining workload on TWM and that TWM is in the operation mode of Disconnected.

Settings area

Configure TSM and AMS/IM...	Navigates to the TSM and AMS/IM connection settings screen, which can be viewed by the administrator but is editable only by the service user access level.
------------------------------------	---

Related information...

- [TWM screen \(TMOS\)](#), page 85

View licenses (TMOS)

Prerequisite	Web access is configured on a workstation in the laboratory with access to the Track Manager Operating System (TMOS). NOTE: Workstation system requirements are specified in the TMOS service manual. NOTE: The configuration of the customer network is performed by an Abbott Laboratories representative or an authorized service representative.
---------------------	--

User access level	Administrator
--------------------------	---------------

Perform this procedure to view license information for all installed components on the laboratory automation system (LAS).

1. Launch the web browser.

NOTE: TMOS 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:
 - `https://<GLP Firewall WAN IP>:7000/license/` (recommended)
 - `http://<GLP Firewall WAN IP>:7000/license/`

3. Press the **Enter** key.

Licenses for the following LAS components are displayed:

- TMOS
- Track Sample Manager (TSM)
- Track Workflow Manager (TWM)
- Module controllers

Related information...

- [Track Manager Operating System user interface](#), page 74

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.

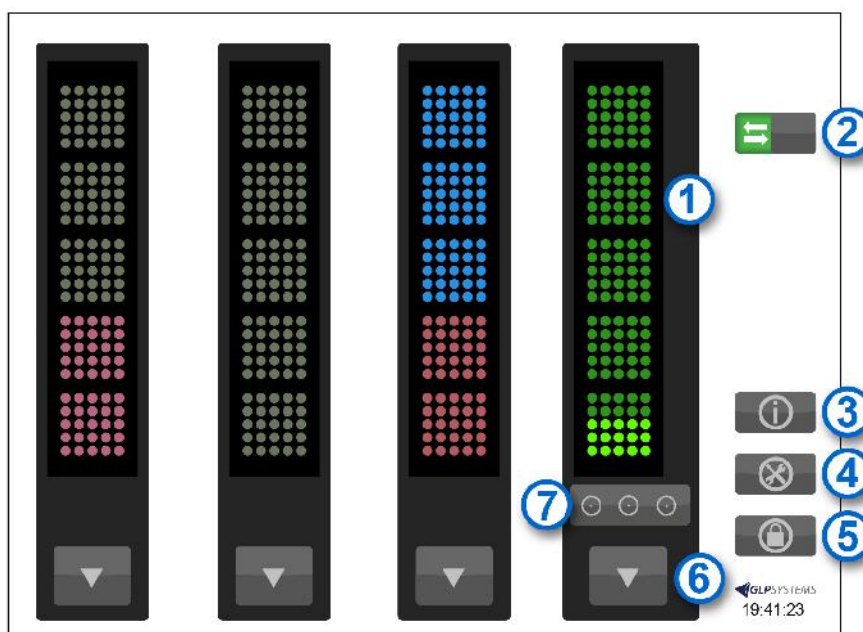
Related information...

- [Installation procedures and special requirements](#), page 67
- [Main menu screen \(IOM\)](#), page 88

Main menu screen (IOM)

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

Figure 19: Main menu screen (IOM)



Legend:

1. Drawer: Shows the FlexRacks and configured areas in a drawer or sector.
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. The **Login** button is available only to an Abbott Laboratories representative or an authorized service representative.
6. **Open/Close drawer** button: Opens and closes the drawers.
7. **Open drawer** icon: Indicates that the drawer is open.

Related information...

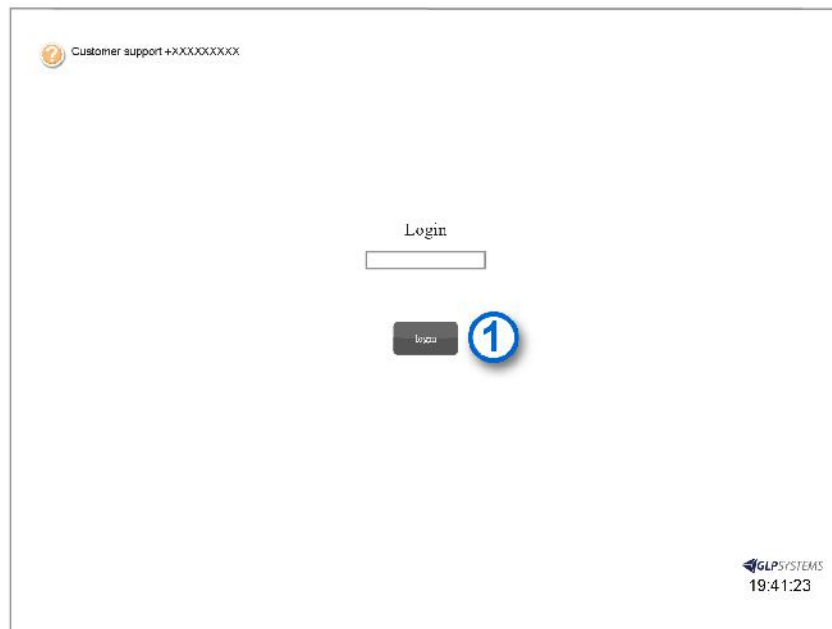
- [Input/Output Module configuration](#), page 88
- [Login screen](#), page 89
- [Information screen](#), page 89
- [Configuration screen](#), page 91
- [Using drawers with FlexRacks](#), page 92
- [Using racks](#), page 97
- [Power on the module](#), page 263

Login screen

The Login screen for the configuration manager is displayed if a username and password were set during installation.

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

Figure 20: Login screen



Legend:

1. **Login** button

Related information...

- [Main menu screen \(IOM\)](#), page 88

Information screen

The Information screen on the module displays 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 module controller firmware was last programmed into the module controller board.
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 module was powered on.
Module output operations	The number of samples moved from the track since the module was powered on.
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 the sample barcode 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 times the sample barcode reader was unable to read a barcode and reported an error since the module was installed.
RobotSample operations	The number of movements the robot has performed since the module was installed.
Module total operation time	The time in seconds the module has been operational since the module was installed.
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.
 button	The Exit button navigates to the Main menu screen (IOM).

Related information...

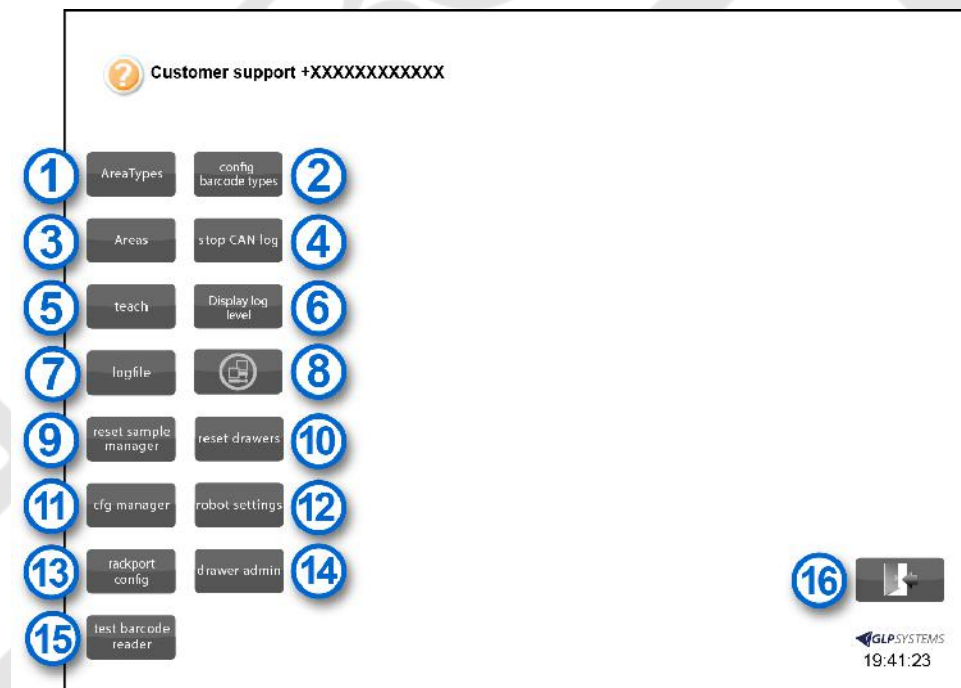
- [Main menu screen \(IOM\)](#), page 88

Configuration screen

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

NOTE: The **AreaTypes** and **Areas** buttons are used by the operator. The other buttons are only used by an Abbott Laboratories representative or an authorized service representative.

Figure 21: 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 log level settings screen.
7. **logfile** button: Navigates to the log files.
8. **Network settings** button: Navigates to the Network settings 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. **Exit** button: Navigates to the Main menu screen (IOM).

Related information...

- [Main menu screen \(IOM\)](#), page 88

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.

Continued on next page...

...Continued from previous page

Designated usage	Description
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 88
- [Defining areas](#), page 93
- [Create an area type](#), page 93
- [Configure a new area](#), page 94
- [Edit properties of an area](#), page 95
- [View information about an area](#), page 96
- [Delete an area](#), page 96

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 92

Create an area type

Required module status Offline

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

NOTE: The creation of an area that supports manual rack identification is performed by an Abbott Laboratories representative or an authorized service representative.

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 93) through 7 (page 94).
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 92
- [Place the module online](#), page 266

Configure a new area

Required module status Offline

Perform this procedure to configure an area in the module.

NOTE: The configuration of an area that supports manual rack identification is performed by an Abbott Laboratories representative or an authorized service representative.

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.

Section 2

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**.

The **step 2** tab of the Properties menu is displayed.

9. In the **Characteristics** list, 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 92
- [Place the module online](#), page 266

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 92
- [Place the module online](#), page 266

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 92

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 92

- [Place the module online](#), page 266
- [Place the module offline](#), page 267
- [Cycle power to the module](#), page 265

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 88
- [Replace a rack and edit the rack ID](#), page 97
- [Load or unload a rack in the module drawer](#), page 99

Replace a rack and edit the rack ID

Prerequisite

Ensure that the following area parameters have been configured by an Abbott Laboratories representative or an authorized service representative:

- **usage** is set to **OUTPUT**
- **rackid handling** is set to **MANUAL**
- The **Area active** option is enabled

Required materials

Handheld barcode reader (recommended)

Required module status

Online

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



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

NOTE: Drawers configured for manual rack identification will remain open if the module is restarted. For the drawers to close, perform and finish the manual rack identification workflow described in this procedure for each drawer.

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

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. Press the drawer push button or tap the **Open/Close drawer button** on the touchscreen user interface.

The Drawer rack ID confirmation screen is displayed.

NOTE: If multiple drawers configured for manual rack identification are opened at the same time, pressing the drawer push button or tapping the **Open/Close drawer button** for one of the drawers will initiate the manual rack identification workflow for that drawer only and will temporarily disable the others, preventing them from closing. For the other drawers to close, perform and finish the manual rack identification workflow for each drawer. Drawers not configured for manual rack identification continue to operate normally.

5. Perform one of the following options.
 - If the drawer is opened without replacing a rack or RackPort, perform the following steps:
 - a. Tap **No changes were made to the Rack IDs, Racks, or Rackport type (drawer will close)**.
 - b. Tap the **Next** button  to confirm the selection and continue using the assigned rack ID.

The drawer closes and the workflow is finished.

- If at least one rack ID has changed but the RackPort type remains the same, perform the following steps:
 - a. Tap **One or more Rack IDs has changed or cannot be determined (drawer will remain open)**.
 - b. Tap the **Next** button to confirm the selection.
- If the RackPort type, number of racks, or location of a rack has changed, perform the following steps:
 - a. Tap **The number of Racks or the Rackport type has changed (drawer will close and reopen)**.
 - b. Tap the **Next** button to confirm the selection.
 - c. When a confirmation message is displayed, tap **o.k.**.

The Rack ID handling screen is displayed.

6. If using the handheld barcode reader, scan the ID of the rack at the front end of the drawer. Otherwise, perform the following steps on the touchscreen user interface:

- a) Tap the rack ID field on the Rack ID handling screen.
 - b) Type the ID of the rack at the front end of the drawer.
 - c) Tap the **Next** button to confirm the entry.
7. Scan or type and confirm the rack IDs for all remaining racks.
For visual identification, the position of each rack as it gets processed is enclosed within a red rectangle on the left side of the Rack ID handling screen.
8. Tap **Finish**.
A confirmation pop-up is displayed listing all scanned or typed rack IDs.
9. Verify all rack IDs.
10. Tap **Confirm**.
The drawer closes and the workflow is finished.

Related information...

- [Using racks](#), page 97

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.



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

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

Related information...

- [Using racks](#), page 97

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3. PRINCIPLES OF OPERATION

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 102
- [Control system](#), page 104
- [Track Sample Manager functional description](#), page 105
- [Track Workflow Manager functional description](#), page 109
- [Input/Output Module operation](#), page 110

General operation

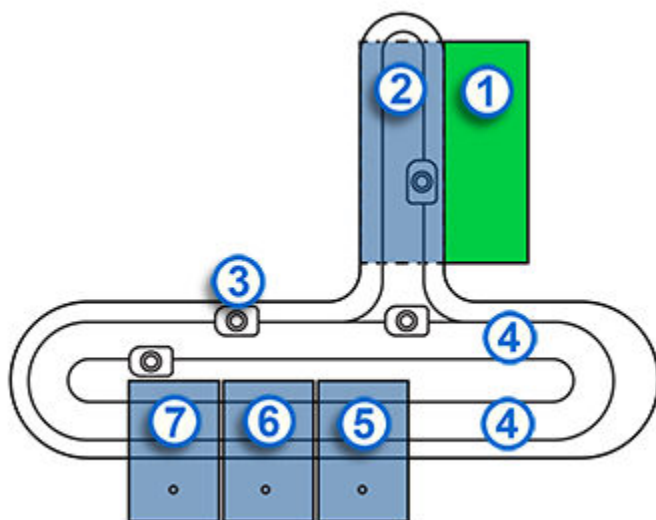
Autonomous transport vehicles, referred to as CARs, are used to distribute the samples. The CARs move toward the various modules and analyzers by using rightmost traffic paths on the track.

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

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

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

Figure 22: Example of an LAS design



Legend:

1. Analyzers
2. SAL Alinity ci
3. CAR
4. Track
5. IOM configured as an output module
6. Aliquot Module
7. IOM configured as an input module

Related information...

- [Principles of operation](#), page 101

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 or AccessPoint).

Related information...

- [Principles of operation](#), page 101
- [Track Sample Manager overview](#), page 49

Track Sample Manager functional description

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

Related information...

- [Principles of operation](#), page 101
- [Workflow](#), page 105
- [System monitoring](#), page 107

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 105
- [Sample and CAR routing](#), page 105
- [Track layout](#), page 105
- [Routing strategy](#), page 106
- [Track Workflow Manager interface](#), page 106

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 105

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 105

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)

NOTE: Sample prioritization can be configured to ensure adequate sample processing time on a customer-specific basis. Laboratory personnel have the responsibility to configure acceptable processing times. Sample prioritization can reduce the potential for sample degradation due to evaporation and ambient temperature exposure, primarily for uncapped samples. Contact an Abbott Laboratories representative or an authorized service representative for more information about configuration.

NOTE: If target processing times for a specific assay are not met by loading sample tubes into the Input/Output Module, loading sample tubes directly into the analyzers is recommended.

- 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.

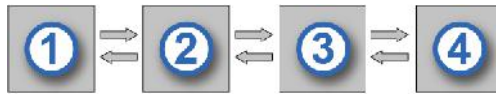
Related information...

- [Workflow](#), page 105

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 23: Flowchart of communication paths**Legend:**

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

Related information...

- [Workflow](#), page 105
- [Communication paths](#), page 37

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 105
- [System log](#), page 107
- [Status package for sample and CAR routing](#), page 107

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 107

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

Related information...

- [System monitoring](#), page 107

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 101

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 barcodes. The robot gripper loads and unloads sample tubes from CARs and racks. When the robot gripper moves a sample, the sample barcode reader reads the barcode 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 gripper removes the sample from the rack and places it into the CAR. For the output function, the robot gripper 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 101

4. PERFORMANCE CHARACTERISTICS AND SPECIFICATIONS

Introduction

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

Related information...

- [Technical data](#), page 112

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)
- RackPorts Product Information Sheet

Related information...

- [Performance characteristics and specifications](#), page 111
- [Laboratory automation system technical data](#), page 112
- [Sample and rack barcode label technical data](#), page 113
- [Sample tube technical data](#), page 116
- [Sample processing specifications](#), page 119
- [Track technical data](#), page 119
- [Spiral tower technical data](#), page 120
- [CAR technical data](#), page 120
- [Track Sample Manager technical data](#), page 121
- [Track Workflow Manager technical data](#), page 121
- [Input/Output Module technical data](#), page 122

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	13.553 MHz to 13.567 MHz at up to 60 dBμA/m at 10 m
Radio frequency output power	200 mW
Sound pressure level	Maximum of 65 dBA

Continued on next page...

...Continued from previous page

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.

NOTE: Laboratory personnel have the responsibility to maintain ambient temperature in the specified range to prevent overheating and excessive evaporation of samples, primarily for uncapped sample tubes. Follow the tube, analyzer, and reagent manufacturer assay-specific documentation for detailed information about proper sample preparation, processing, and storage. Failure to comply with manufacturer recommendations for sample handling could result in delayed or incorrect results.

Related information...

- [Technical data](#), page 112
- [Track installation](#), page 69

Sample and rack barcode label technical data

Table 8: Sample and rack barcode label technical data

Barcode	• Approved: – Matte paper – Maximum of one readable barcode per sample tube (excluding sample labels) • Not approved: – Gloss or coated paper – More than one barcode per sample tube (excluding sample labels)
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Barcode label	- Maximum of two barcode 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 barcode 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: Barcode labels should meet the recommended guidelines and should be correctly affixed to sample tubes and racks in accordance with CLSI document AUTO2-A2: Laboratory Automation: Bar Codes for Specimen Container Identification. IMPORTANT: Incorrect barcode 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 barcode 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 and rack ID maximum length

The following factors affect the number of characters that can fit on a sample or rack barcode label:

- Sample or rack barcode label length
- Sample or rack barcode label placement
- Symbology
- Density
- Ratio
- Quiet zone

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

Codabar	Maximum of 19 characters for primary and secondary sample tube barcode labels and rack barcode labels
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Code 39	Maximum of 19 characters for primary sample tube and rack barcode labels Maximum of 14 characters for secondary sample tube barcode labels
Code 128	Maximum of 19 characters for primary and secondary sample tube barcode labels and rack barcode labels
Interleaved 2 of 5	Maximum of 18 characters for primary and secondary sample tube barcode labels and rack barcode 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 and rack ID allowable characters

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

Table 9: Sample ID and rack 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
=	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 112
- [Sample tube technical data](#), page 116
- [Sample processing specifications](#), page 119
- [Barcode readers](#), page 60
- [Load samples into FlexRacks](#), page 271
- [Load analyzer-specific racks](#), page 274
- [Unload analyzer-specific racks](#), page 277

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) - Self-supporting (may include sample tubes with flat bottoms, false bottoms, or open bottoms) - 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 NOTE: Refer to the RackPorts Product Information Sheet for more information about sample tube constraints.
Tube height	- Uncapped: 65 mm to 102 mm - Capped: 81 mm to 110 mm NOTE: Refer to the RackPorts Product Information Sheet for more information about sample tube constraints.
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 barcode 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.

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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.
- Redraw the sample if necessary.

Figure 24: Sample tubes not approved



Legend:

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

Figure 25: Sample tube caps not approved



Legend:

1. Cap with flap
2. Rubber stopper closure

Section 4

3. Cap with irregular top edge
4. Archiving cap

Related information...

- [Technical data](#), page 112
- [Sample and rack barcode label technical data](#), page 113
- [Sample processing specifications](#), page 119
- [CAR design and function](#), page 44
- [Input/Output Module technical data](#), page 122
- [Input/Output Module safety](#), page 303
- [RackPorts overview](#), page 64
- [Load samples into FlexRacks](#), page 271
- [Load analyzer-specific racks](#), page 274
- [Unload analyzer-specific racks](#), page 277
- [Basic safety](#), page 296

Sample processing specifications

Due to specific sample processing capabilities 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 112
- [Sample and rack barcode label technical data](#), page 113
- [Sample tube technical data](#), page 116

Track technical data

Table 12: Track technical data

Current	• Three-phase: – 20 amperes per phase – Maximum 230 VAC per phase • Single-phase (Archive cooling unit only): – 16 amperes – Maximum 127 or 230 VAC
Power	• Three-phase: 4600 watts per phase • Single-phase (Archive cooling unit only): 2032 watts (127 VAC) or 3680 watts (230 VAC)

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Supply voltage	- Three-phase: 400 VAC, $\pm 10\%$ - Single-phase (Archive cooling unit only): 115 to 127 VAC, $\pm 10\%$ 220 to 230 VAC, $\pm 10\%$
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 112
- Track installation, page 69

Spiral tower technical data

Table 13: Spiral tower technical data

Dimensions	113 cm (diameter) x 260 cm (height)
Weight	- Spiral (without hood): 200 kg (441 lb) - Spiral hood: 60 kg (132 lb)

NOTE: The specified dimensions and weight represent a standard spiral tower. Contact an Abbott Laboratories representative or an authorized service representative for more information.

Related information...

- Technical data, page 112
- Spiral tower installation requirements, page 69

CAR technical data

Table 14: 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

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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 112

Track Sample Manager technical data

Table 15: Track Sample Manager (TSM) technical data

Platform	Payara Application Server
Database	PostgreSQL
Operating system	SUSE Linux Enterprise operating system

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

Related information...

- [Technical data](#), page 112

Track Workflow Manager technical data

Table 16: Track Workflow Manager (TWM) technical data

Platform	Payara Application Server
Database	PostgreSQL
Operating system	SUSE Linux Enterprise operating system

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

Related information...

- [Technical data](#), page 112

Input/Output Module technical data

Table 17: 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
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 112
- [Input/Output Module installation requirements](#), page 70
- [Sample tube technical data](#), page 116

5. OPERATING INSTRUCTIONS

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 124
- [Shut down the GLP systems Track](#), page 125
- [Perform an emergency shutdown](#), page 126
- [Log on to the Track Sample Manager \(TSM\)](#), page 128
- [Log on to the Track Workflow Manager \(TWM\)](#), page 130
- [Open and close the track hoods](#), page 132
- [Remove and replace the track hood at the spiral tower](#), page 135
- [Open and close the spiral tower doors](#), page 138
- [Cycle power to an empty CAR](#), page 140
- [Track Sample Manager user interface](#), page 142
- [Track Workflow Manager user interface](#), page 201
- [Input/Output Module procedures](#), page 263

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 123
- [CAR design and function](#), page 44
- [Troubleshooting](#), page 327
- [Log on to the Track Sample Manager \(TSM\)](#), page 128
- [Log on to the Track Workflow Manager \(TWM\)](#), page 130
- [Power on the module](#), page 263

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 123
- [Power off the module](#), page 264

Perform an emergency shutdown

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

NOTE: Disconnect switch locations vary by customer site. The locations are reviewed during operator training. Contact an Abbott Laboratories representative or an authorized service representative to request a track layout illustration identifying the disconnect switch positions.

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 123

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

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

User access level

Operator and administrator

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 TWM are housed on the same server, type one of the following URLs to access TSM:
 - <https://<GLP Firewall WAN IP>:7000/tsm-web/> (recommended)
 - <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 one of the following URLs to access TSM:
 - <https://<GLP Firewall WAN IP>:7000/tsm-web/> (recommended)
 - <http://<GLP Firewall WAN IP>:7000/tsm-web/>
3. Press the **Enter** key.
The Sign in to your account screen is displayed.
4. Type the username and password and if available, select the preferred language from the drop-down list.
5. Tap **Sign in**.

NOTE: The password may need to be changed to a new password when the user logs on for the first time. A user account may be automatically disabled after a number of invalid logon

attempts. Comply with the information technology requirements of the facility. If necessary, contact an Abbott Laboratories representative or an authorized service representative.

The TSM start screen is displayed.

6. Tap **TSM** in the **START TSM** list to display the Main menu screen (TSM).

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

Related information...

- [Operating instructions](#), page 123
- [Main menu screen element descriptions \(TSM\)](#), page 143
- [Start the GLP systems Track](#), page 124

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.

User access level

Operator and administrator

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 one of the following URLs to access TWM:
 - <https://<GLP Firewall WAN IP>:7000/re-web/> (recommended)
 - <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 one of the following URLs to access TWM:
 - <https://<GLP Firewall WAN IP>:7000/re-web/> (recommended)
 - <http://<GLP Firewall WAN IP>:7000/re-web/>
3. Press the **Enter** key.
The Sign in to your account screen is displayed.
4. Type the username and password and if available, select the preferred language from the drop-down list.
5. Tap **Sign in**.

NOTE: The password may need to be changed to a new password when the user logs on for the first time. A user account may be automatically disabled after a number of invalid logon

attempts. Comply with the information technology requirements of the facility. If necessary, contact an Abbott Laboratories representative or an authorized service representative.

The TWM start screen is displayed.

6. Tap **TWM** in the **START** list to display the Main menu screen (TWM).

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

Related information...

- [Operating instructions](#), page 123
- [Main menu screen element descriptions \(TWM\)](#), page 203
- [Start the GLP systems Track](#), page 124

Open and close the track hoods

Required materials Key

Perform this procedure to open and close the track hoods.



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

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 26: Track hood lock and key



2. Open the track hood.

Figure 27: 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 123
- [Track overview](#), page 39
- [Track sections](#), page 39
- [Clean the track hoods](#), page 308
- [Clean the lane elements](#), page 308
- [Clean the guiding slot](#), page 309
- [Clean the sensors](#), page 311
- [Clean the housing](#), page 311
- [Clean the charging contacts](#), page 312
- [Clean the sample holder](#), page 312
- [Clean the drive wheel and the wheel arch](#), page 313
- [Remove a CAR without a sample](#), page 314
- [Remove a CAR with a sample](#), page 314

- [Replace the front underseal of a CAR, page 315](#)

Remove and replace the track hood at the spiral tower

Required materials Key

Perform this procedure to remove and replace the track hood connecting to the spiral tower.



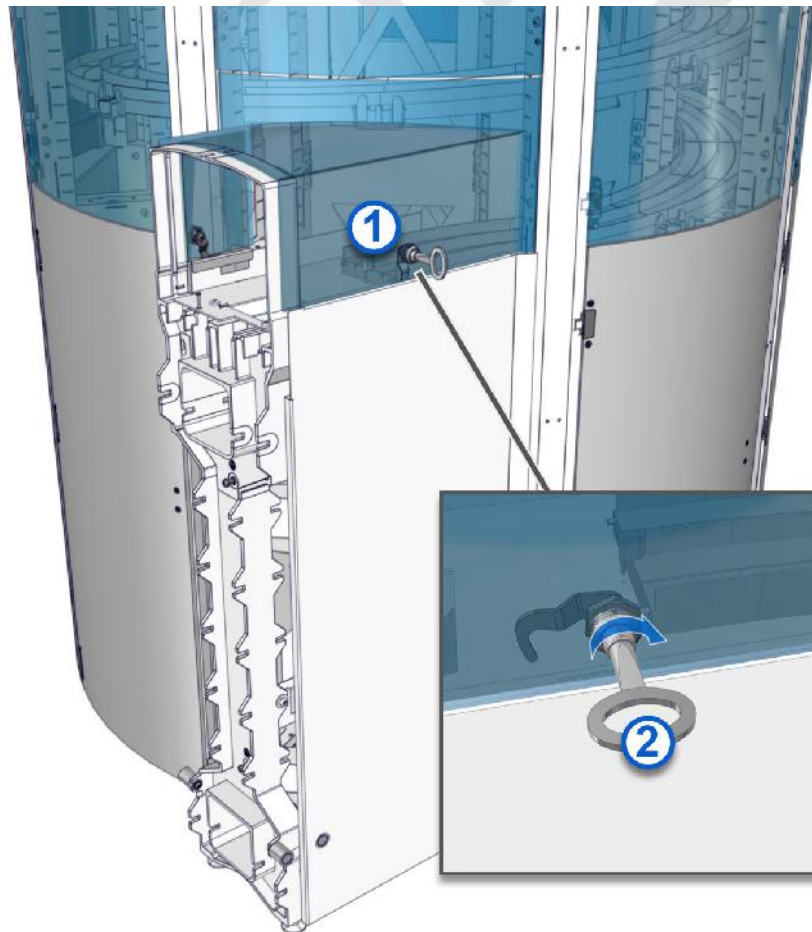
CAUTION: Mind or watch your hands. Track hoods connecting to spiral towers can be removed and replaced **only** by a trained operator. Finger pinches can occur when removing and replacing the hoods. Use caution when removing and replacing track hoods connecting to spiral towers.



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

1. To unlock the track hood connecting to the spiral tower, insert the key [2] into the front lock [1] and turn clockwise.

Figure 28: Track hood front lock and key

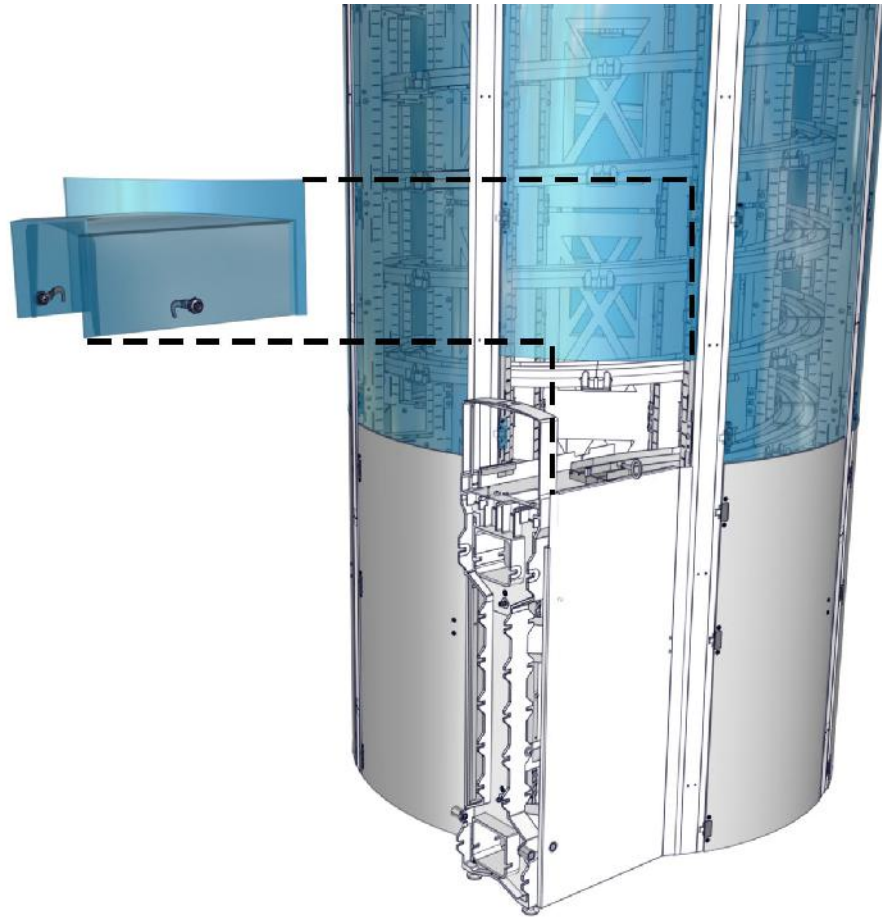


2. Insert the key [2] into the rear lock [1] and turn clockwise.

Figure 29: Track hood rear lock and key

3. Remove the track hood.

Figure 30: Track hood removed



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

Related information...

- [Operating instructions](#), page 123

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.



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

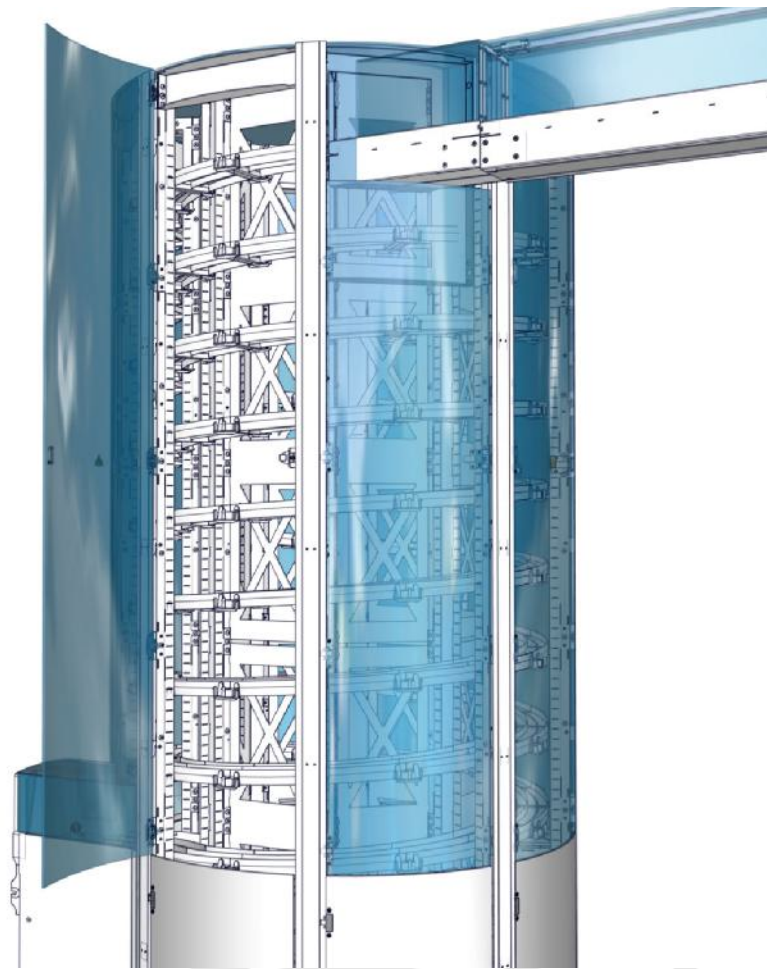
1. To open a spiral tower door, gently press against the outer edge to unlatch it.

Figure 31: Spiral tower door



2. Pull open the spiral tower door.

Figure 32: 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 123

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 33: 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 123

Track Sample Manager user interface

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

Related information...

- [Operating instructions](#), page 123
- [Roles and permissions \(TSM\)](#), page 142
- [Main menu screen \(TSM\)](#), page 143

Roles and permissions (TSM)

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, administrator, operator, and monitor.

NOTE: The 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 the functions relevant to the operator and administrator.

Table 18: Roles

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

NOTE: The listed user roles are intended to differentiate access levels only. All users must be trained operators.

Table 19: Permissions

Function or menu item	Service	Administrator	Operator
Track / RE	x	x Permissions not granted: • Controller • Segment controller information • AccessPoint and switch configuration • Reset	x Permissions not granted: • Administrator • Controller → Module controller tab • Track → Circle → Change name • Routing Engine → Clear messages • Operation mode → Change mode

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Function or menu item	Service	Administrator	Operator
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 142

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 142
- [Main menu screen element descriptions \(TSM\)](#), page 143
- [Track / RE tab \(TSM\)](#), page 145
- [Samples tab \(TSM\)](#), page 165
- [CARs tab \(TSM\)](#), page 177
- [Messages tab \(TSM\)](#), page 181
- [Admin tab \(TSM\)](#), page 183

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.
 button	The 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.
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 143
- [Log on to the Track Sample Manager \(TSM\)](#), page 128

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 143
- [Track / RE tab element descriptions \(TSM\)](#), page 146
- [Controller tab element descriptions \(TSM\)](#), page 146
- [Segment controller screen element descriptions \(TSM\)](#), page 148
- [Module controller screen element descriptions \(TSM\)](#), page 150
- [Search for multiple samples in an Archive Storage Unit \(TSM\)](#), page 156
- [Synchronize sample databases \(TSM\)](#), page 157
- [Circles tab element descriptions \(TSM\)](#), page 158
- [Layout tab element descriptions \(TSM\)](#), page 159
- [Statistic tab element descriptions \(TSM\)](#), page 159
- [Modify statistical criteria \(TSM\)](#), page 160
- [View temperature statistics for an Archive Storage Unit \(TSM\)](#), page 161
- [Firmware tab element descriptions \(TSM\)](#), page 161

- [Routing Engine tab element descriptions \(TSM\)](#), page 163
- [View the connections to TWM on TSM](#), page 164
- [Operation mode tab element descriptions \(TSM\)](#), page 164

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 145

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: <table> <tr> <td>Green</td><td> - The segment is connected and online. - 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 segment or track element is in an error state. - The module is not connected or an error has been detected. </td></tr> <tr> <td>Gray</td><td> - The segment controller has not reported the track element. - The module is powered off or has been manually disabled. </td></tr> </table>	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.
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: <table> <tr> <td>Green</td><td> - All connected track elements are online. - All areas are online. </td></tr> <tr> <td>Yellow</td><td>The module is connected but offline.</td></tr> <tr> <td>Red</td><td> - The segment or track is in an error state. - At least one area is in an error state. </td></tr> <tr> <td>Gray</td><td> - The segment controller has not reported the track element. - The module is powered off or has been manually disabled. </td></tr> </table>	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.
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 145								

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: 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.
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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.
Waiting queue (H)	Displays the number of positions reserved for high-priority samples at AccessPoints of type AP virtual , AP unloading , and AP general access .
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 145

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:	
	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:	
	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 previous 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: <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.				
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.				
Proc. time	Displays the processing time of the test in seconds.				

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 or consumables in the area.						
Fill level	Displays the fill level of the area: <table> <tr> <td>Blue</td><td>Samples or consumables are present in this area.</td></tr> </table>	Blue	Samples or consumables are present in this area.				
Blue	Samples or consumables are present in this area.						

Yellow

Samples are routed for this area.

Track Elements & Areas tab, Sectors area

Displays data for the Storage Unit or sector of an Archive that has temperature monitoring enabled. If temperature monitoring is not supported, **Not Supported** is displayed instead of number values.

Number	Displays the sector number.
Status	Displays the sector status:
	Green The sector is active.
	Red The sector is inactive.
Temperature °C	Displays temperature data for the sector.
Temperature time	Displays the time when the temperature data became available.

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.

Disciplines tab

Displays the disciplines of a module.

Area type	Displays the area type of the module.
Disciplines	Displays the discipline of the module.

Maintenance tab

Displays maintenance options for a storage module or Buffer Module.

NOTE: This tab is available only when the module is disabled or placed in service mode.

Empty module area

NOTE: This area is available when a storage module is selected or when a Buffer Module is placed in service mode.

Sector	Displays a drop-down list that is used to select the Archive Storage Unit. The following options are available: - All Sectors - Left - Right NOTE: This element is available only for storage modules.				
Tray	Displays a drop-down list that is used to select the Archive Storage Unit tray number. The options All trays or a specific tray number are available. NOTE: This element is available only for storage modules.				
Restore samples	Displays the option to restore samples. NOTE: This option is available only for storage modules in service mode.				
Dispose samples	Displays the option to dispose samples. NOTE: This option is available only for storage modules in service mode.				
Reset sample inventory	Displays the option to reset the sample inventory. NOTE: This option is available only when a storage module is disabled.				
Output area	Displays a drop-down list that is used to select an area to which to send restored samples. NOTE: This element is available for storage modules or for a Buffer Module in service mode.				
Disposals	Displays a drop-down list that is used to select one of the following options: <table><tr><td>Currently</td><td>Displays the number of samples due for disposal in the selected sector or tray.</td></tr><tr><td>6 hours earlier</td><td>Displays the number of samples that would be due for disposal when 6 hours are subtracted from the disposal time of samples in the selected sector or tray.</td></tr></table>	Currently	Displays the number of samples due for disposal in the selected sector or tray.	6 hours earlier	Displays the number of samples that would be due for disposal when 6 hours are subtracted from the disposal time of samples in the selected sector or tray.
Currently	Displays the number of samples due for disposal in the selected sector or tray.				
6 hours earlier	Displays the number of samples that would be due for disposal when 6 hours are subtracted from the disposal time of samples in the selected sector or tray.				



12 hours earlier	Displays the number of samples that would be due for disposal when 12 hours are subtracted from the disposal time of samples in the selected sector or tray.
24 hours earlier	Displays the number of samples that would be due for disposal when 24 hours are subtracted from the disposal time of samples in the selected sector or tray.
Dispose all	Displays the number of samples in the selected sector or tray.

NOTE: This option is available only for storage modules.

Execute button Performs the selected maintenance operation.

Data recovery area

NOTE: This area is available when the module is disabled.

Action	Displays a drop-down list that is used to select Data transfer or Data compare .
Start button	Starts the selected operation.
Export file	Displays the file name of the generated data recovery file. This file compares the sample inventories of the Track Sample Manager (TSM) and the modules, and identifies any differences between the two lists.
Download button	Exports and downloads data to an Excel file.

NOTE: Downloading a file can result in a browser notification that the download is blocked. Select to keep the download in the browser download manager to retrieve it.

Function buttons

Disable	Disables the selected module on TSM.
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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.
Reset sample inventory	Resets the sample inventory for the module in TSM. NOTE: This function button is available only when a Buffer Module is disabled.
Service	Places the module in service mode.
Online	Places the module online.
Save	Saves the changes. NOTE: This function button is available only to the administrator.
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 145

Search for multiple samples in an Archive Storage Unit (TSM)

User access level Administrator

Perform this procedure to search for multiple samples in an Archive Storage Unit. To search for individual samples, perform the procedure to search for samples (TSM) described in this manual.

1. On the Main menu screen (TSM), tap **Track / RE**.
2. On the **Track / RE** tab, tap **Controller**.
3. Tap the relevant storage module to navigate to the Module controller screen.
4. On the Module controller screen, tap **Disable**.
A **Maintenance** tab is displayed.
5. Tap the **Maintenance** tab.
6. In the **Data recovery** area of the **Maintenance** tab, in the **Action** drop-down list, tap **Data compare**.
7. Tap **Start**.
8. In the **Sample inventory exchange from device to TSM?** window, tap **Send**.
9. When a confirmation message is displayed, tap **OK**.
An **Export file** text box and **Download** button are displayed.
10. Tap **Download**.
An Excel file is downloaded.
NOTE: Downloading a file can result in a browser notification that the download is blocked. Select to keep the download in the browser download manager to retrieve it.
11. Tap **Enable**.



12. Open the Excel file.
13. Open the **BOTH (number)** tab.

NOTE: The number value in each tab represents the number of samples listed. Under normal conditions, the Track Sample Manager (TSM) and module controller databases are synchronized and all sample data can be found in the **BOTH (number)** tab of the Excel file. If the other tabs of the Excel file display a number value greater than zero, the TSM and module controller databases are not synchronized.

14. If necessary, synchronize the TSM and module controller databases after determining which one is correct.
15. In the **BOTH (number)** tab of the Excel file, search for the relevant samples.

NOTE: The **RackId** column displays the four-digit serial number of the Storage Unit tray holding the samples. The **Position** column displays the number of the sample position on the tray.

Related information...

- [Track / RE tab \(TSM\)](#), page 145
- [Search for samples \(TSM\)](#), page 171
- [Synchronize sample databases \(TSM\)](#), page 157

Synchronize sample databases (TSM)

User access level Administrator

Perform this procedure to overwrite the Track Sample Manager (TSM) sample database with a storage module controller sample database if the TSM sample database becomes outdated or corrupted.

1. On the Main menu screen (TSM), tap **Track / RE**.
2. On the **Track / RE** tab, tap **Controller**.
3. Tap the relevant storage module to navigate to the Module controller screen.
4. On the Module controller screen, tap **Disable**.
A **Maintenance** tab is displayed.
5. Tap the **Maintenance** tab.
6. In the **Data recovery** area of the **Maintenance** tab, in the **Action** drop-down list, tap **Data transfer**.
7. Tap **Start**.
8. In the **Sample inventory exchange from device to TSM?** window, tap **Send**.
9. When a confirmation message is displayed, tap **OK**.
10. If the confirmation message is displayed again, tap **OK** again.
11. Tap **Enable**.

Related information...

- [Track / RE tab \(TSM\)](#), page 145

- [Search for multiple samples in an Archive Storage Unit \(TSM\)](#), page 156

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: 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 145 ▪ Layout tab element descriptions (TSM), page 159



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 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 level currently being viewed.

Related information...

- [Track / RE tab \(TSM\)](#), page 145
- [Circles tab element descriptions \(TSM\)](#), page 158
- [Track overview](#), page 39

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. NOTE: Downloading a file can result in a browser notification that the download is blocked. Select to keep the download in the browser download manager to retrieve it.
Update	Updates the statistics.

Related information...

- [Track / RE tab \(TSM\)](#), page 145

Modify statistical criteria (TSM)

User access level	Operator and administrator
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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 145

View temperature statistics for an Archive Storage Unit (TSM)

User access level Operator and administrator

Perform this procedure to access temperature statistics for an Archive Storage Unit.

1. On the Main menu screen (TSM), tap **Track / RE**.
2. On the **Track / RE** tab, tap **Statistic**.
3. On the **Statistic** tab, in the **Type** drop-down list, tap **Temperature**.
4. In the **Element** drop-down list, tap the ID of the storage module controller.
5. In the **Period** drop-down list, tap a time scale.
6. At **Start date**, tap the **Left Arrow** and **Right Arrow** buttons to configure the start date for the statistics review based on the selected time scale.
The statistics graph is displayed.
7. Tap **Export** to export the temperature statistics to an Excel file.

Related information...

- [Track / RE tab \(TSM\)](#), page 145

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.
Product version	Displays the product version of the segment.
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).
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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.
Product version	Displays the product version of the module.
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.

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.

NOTE: Downloading a file can result in a browser notification that the download is blocked. Select to keep the download in the browser download manager to retrieve it.

Close Closes the screen.

Related information...
▪ [Track / RE tab \(TSM\)](#), page 145

Routing Engine tab element descriptions (TSM)

The **Routing Engine** tab displays all communication end points and the status of the Track Workflow Manager (TWM). Routing Engine or RE refers to 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 that TWM establishes with TSM. The following screen elements are displayed:

Status	Green	TWM is connected.
	Red	TWM is disconnected.

Local address	Displays the local address.
Remote address	Displays the remote address.

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

Status	Green	TWM is connected.
	Red	TWM is disconnected.

Local address	Displays the local address.
Remote address	Displays the remote address.

Buffered messages Displays the number of unsent messages.



Function buttons

- Clear messages

Clears the buffered messages in queue.

NOTE: This function button is available only to the administrator.
- Close

Closes the screen.

Related information...

- [Track / RE tab \(TSM\)](#), page 145

View the connections to TWM on TSM

- User access level

Operator and administrator

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 145

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 Track Workflow Manager (TWM) and track.
Module Data Recovery	TSM opens connections with modules but is disconnected from TWM and segment controllers. Inventory exchange is enabled.

Function button

Save Saves the changes.

Related information...

- [Track / RE tab \(TSM\)](#), page 145

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 143
- [Samples tab element descriptions \(TSM\)](#), page 165
- [Search tab \(Samples\) element descriptions \(TSM\)](#), page 166
- [Search result screen element descriptions \(TSM\)](#), page 166
- [Sample Detail screen element descriptions \(TSM\)](#), page 167
- [Sample History screen element descriptions \(TSM\)](#), page 169
- [Search for samples \(TSM\)](#), page 171
- [Remove a sample \(TSM\)](#), page 172
- [Expert search tab \(Samples\) element descriptions \(TSM\)](#), page 173
- [List requested tab \(Samples\) element descriptions \(TSM\)](#), page 175
- [Request to send a sample to an output area \(TSM\)](#), page 175
- [Buffered samples list tab \(Samples\) element descriptions \(TSM\)](#), page 176

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 located in a Buffer Module.

Related information...

- [Samples tab \(TSM\)](#), page 165

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.
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Related information...

- [Samples tab \(TSM\)](#), page 165

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.
Tube type	Displays the tube type of the sample.
Time in module / area	Displays the duration in hours and minutes that the sample has been in the module or area.
Sector / Tray / position	Displays the position of the sample in the module.
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 buttons

Export	Exports the search results into an Excel file format. NOTE: Downloading a file can result in a browser notification that the download is blocked. Select to keep the download in the browser download manager to retrieve it.
Close	Closes the screen.

Related information...

- [Samples tab \(TSM\)](#), page 165
- [Expert search tab \(Samples\) element descriptions \(TSM\)](#), page 173

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 is removed from the track.
Error	Displays any error for the sample and a magnifying glass icon. Selecting the magnifying glass icon navigates to a Messages for sample screen, which displays the error details.
Priority	Displays the priority of the sample.
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. Sector refers to the drawer of an Input/Output Module (IOM) or the Storage Unit of an Archive.
Rack / Pos.	Displays the rack number and position number. For example, a value of 12 / 3 refers to drawer 1, rack 2, sample position 3 on the IOM.
CAR	Displays the serial number of the CAR. NOTE: If the location value is crossed off, the CAR is not in a usable status.
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		
	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. NOTE: The option to request emergency samples is available only for storage modules and for a Buffer Module.

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 IOM.
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 165
- [Expert search tab \(Samples\) element descriptions \(TSM\)](#), page 173

Sample History screen element descriptions (TSM)

The Sample History screen displays the detailed route of a sample along the track. The Sample History screen can be accessed from the **Progress** tab of the Sample Detail screen by tapping the magnifying glass icon next to **Target Plan**.

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: <table> <tr> <td>Canceled: New target</td><td>The CAR is rerouted or the target step has changed.</td></tr> <tr> <td>CAR returned / jam resolved</td><td>A removed CAR is returned to the track.</td></tr> <tr> <td>Canceled: CAR removed</td><td>The CAR is detected as removed.</td></tr> <tr> <td>Canceled: Sample removed</td><td>The sample is detected as removed.</td></tr> <tr> <td>Error</td><td>The module sends a sample error message.</td></tr> <tr> <td>Canceled: Not processed</td><td>The module has not sent a notification for sample processing is completed.</td></tr> <tr> <td>Restored</td><td>The sample is restored.</td></tr> </table>	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.
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.
Removed	The sample has been removed from an output area.
Disposed	The sample has been disposed from storage.
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 165
- [Expert search tab \(Samples\) element descriptions \(TSM\)](#), page 173

Search for samples (TSM)

User access level Operator and administrator

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 165
- [Expert search tab \(Samples\) element descriptions \(TSM\)](#), page 173
- [Search for multiple samples in an Archive Storage Unit \(TSM\)](#), page 156

Remove a sample (TSM)

User access level Operator and administrator

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

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



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.

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 165
- [Expert search tab \(Samples\) element descriptions \(TSM\)](#), page 173
- [Remove a CAR with a sample](#), page 314

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.						
Tube type	Displays a drop-down list that is used to search by active tube types.						
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: <table><tr><td>Active</td><td>The Track Sample Manager (TSM) is controlling and processing the sample.</td></tr><tr><td>Regularly removed</td><td>The sample has been removed from an output area for further manual processing.</td></tr><tr><td>Disposed</td><td>The sample has been disposed from storage.</td></tr></table>	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.
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.

Area usage

Displays the options **Target** and **Processed** that are used to determine whether to search by the selected area as a target area or as a processed area.

Processed from

Displays the processing start time when the sample was processed.

Processed to

Displays the processing end time when the sample was processed.

Aggregate by target

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

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.

Time in module/area

Displays a text box that is used to search by the duration in minutes and seconds that the sample has been in the module or area, with the options **Greater than** or **Less than**.

Sector / Tray

Displays a drop-down list that is used to search by the sector or tray of an Archive Storage Unit.

Function button

Search

Displays a list of search results for samples.

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

Related information...

- [Samples tab \(TSM\)](#), page 165
- [Search result screen element descriptions \(TSM\)](#), page 166
- [Sample Detail screen element descriptions \(TSM\)](#), page 167
- [Sample History screen element descriptions \(TSM\)](#), page 169
- [Search for samples \(TSM\)](#), page 171
- [Remove a sample \(TSM\)](#), page 172

List requested tab (Samples) element descriptions (TSM)

The **List requested** tab displays an overview of all samples that have been manually requested 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 user who requested the sample.
Count	Displays the number of samples currently located in a Buffer Module.
User	Displays a drop-down list that is used to filter the requested samples by user.

NOTE: This element is available only to the administrator.

Function button

Update	Refreshes the list.
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Related information...

- [Samples tab \(TSM\)](#), page 165

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

User access level	Operator and administrator
--------------------------	----------------------------

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 165

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 165

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 143
- [CARs tab element descriptions \(TSM\)](#), page 177
- [Search tab \(CARs\) element descriptions \(TSM\)](#), page 177
- [Request to send a CAR to a maintenance lane \(TSM\)](#), page 179
- [Waiting queues tab element descriptions \(TSM\)](#), page 179
- [Circling tab element descriptions \(TSM\)](#), page 180
- [Maintenance tab element descriptions \(TSM\)](#), page 180

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 177

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.
Last contact before	Displays a box that is used to select an end date for searching for the last contact with the CAR. To configure the month and year, tap the Left Arrow or Right Arrow button, and then tap the day.
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 no.	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.
Remove	Assigns a status of Removed to the selected CAR.
Search	Displays a list of search results.

Related information...

- [CARs tab \(TSM\)](#), page 177

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

User access level	Operator and administrator
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Perform this procedure to request to send a CAR to a maintenance lane. A CAR that is not performing as expected can be sent to a maintenance lane for inspection.

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 177

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 that require assistance 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 location of 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.
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Related information...

- [CARs tab \(TSM\)](#), page 177

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 177

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 no.	Displays the serial number of the CAR.				
Status	Displays the status of the CAR: <table><tr><td>Needs maintenance</td><td>On the way</td></tr><tr><td>In maintenance</td><td>Arrived</td></tr></table>	Needs maintenance	On the way	In maintenance	Arrived
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 177

Messages tab (TSM)

On the **Messages** tab of the Track Sample Manager, the administrator can view the following information:

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

Related information...

- [Main menu screen \(TSM\)](#), page 143
- [Messages tab element descriptions \(TSM\)](#), page 181
- [View the messages \(TSM\)](#), page 183

Messages tab element descriptions (TSM)

The **Messages** tab displays message codes generated by the system.

Elements

Last 30 minutes	Refreshes all messages from the last 30 minutes. The start and end dates cannot be edited.
Selected period	A start date and end date can be selected. The date range is restricted to 24 hours.
Messages to show	Displays all message codes.

Start	Displays a box that is used to select a period start date and time. To select the start date, tap the calendar inside the box. To configure the month and year, tap the Left Arrow or Right Arrow button, and then tap the day. This parameter is available only when Selected period is selected.
End	Displays a box that is used to select a period end date and time. To select the end date, tap the calendar inside the box. To configure the month and year, tap the Left Arrow or Right Arrow button, and then tap the day. This parameter is available only when Selected period is selected.
Hidden	Displays a check box that is used to include hidden message codes.
Filter	Displays a text box that is used to enter the expression to filter message codes.
Group	Displayed as a check box. 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.						
Co	Identifies the related controller.						
Sample	Identifies the related sample.						
CAR	Identifies the related CAR.						
Hidden messages	Displays the number of hidden messages.						

Function button

Update Refreshes the messages view.

Related information...

- [Messages tab \(TSM\)](#), page 181

View the messages (TSM)

User access level Administrator

Perform this procedure to view the messages on the Track Sample Manager (TSM).

1. On the Main menu screen (TSM), tap **Messages**.
2. On the **Messages** screen, tap **Last 30 minutes** in the drop-down list to refresh all messages from the last 30 minutes.
3. To view the message from a selected period, perform the following steps:
 - a) Tap **Selected period** 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 **Update** to refresh the messages view.
4. To view all messages, tap **Messages to show** in the drop-down list.

Related information...

- [Messages tab \(TSM\)](#), page 181

Admin tab (TSM)

On the **Admin** tab of the Track Sample Manager, the administrator can access the following information:

- User, timer, and parameter settings
- Data transfer
- User changes

Related information...

- [Main menu screen \(TSM\)](#), page 143
- [Admin tab element descriptions \(TSM\)](#), page 184
- [User tab element descriptions \(TSM\)](#), page 184
- [Timer tab element descriptions \(TSM\)](#), page 185
- [Parameter tab element descriptions \(TSM\)](#), page 185
- [Transfer tab element descriptions \(TSM\)](#), page 188
- [Tubes tab element descriptions \(TSM\)](#), page 189
- [Tube details screen element descriptions \(TSM\)](#), page 190

- [Monitoring tab element descriptions \(TSM\)](#), page 191
- [Create a monitoring display \(TSM\)](#), page 195
- [Distribution tab element descriptions \(TSM\)](#), page 196
- [Disciplines tab element descriptions \(TSM\)](#), page 198
- [Firmware tab element descriptions \(TSM\)](#), page 199
- [Change history tab element descriptions \(TSM\)](#), page 199

Admin tab element descriptions (TSM)

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

Elements

User tab	Allows the administrator to view user accounts.
Timer tab	Allows the administrator to configure disposal and restoration of samples on the storage modules.
Parameter tab	Allows the administrator to view and configure parameters for samples, CARs, modules, error areas, and empty CAR limits.
Transfer tab	Allows the administrator to download track logs.
Tubes tab	Allows the administrator to view sample tube details.
Monitoring tab	Allows the administrator to configure monitoring settings.
Distribution tab	Allows the administrator to configure the distribution of empty and loaded CARs.
Disciplines tab	Allows the administrator to configure disciplines.
Firmware tab	Allows the administrator to view information about the segment, module, and CAR versions.
Change history tab	Allows the administrator to view a summary table of the previous actions performed by all users of the Track Sample Manager.

Related information...

- [Admin tab \(TSM\)](#), page 183

User tab element descriptions (TSM)

On the **User** tab, the administrator can view user accounts.

User administration area

For each user, the administrator can view the following information:

Last name	Displays the last name of the user.
First name	Displays the first name of the user.

Email	Displays the email address of the user.
Phone	Displays the phone number of the user.
Username	Displays the configured username.
Role	Identifies the access level for the user as Monitor , Operator , or Administrator .

Related information...

- [Admin tab \(TSM\)](#), page 183

Timer tab element descriptions (TSM)

The **Timer** tab displays information about disposal and restoration of samples on the storage modules.

Timer area

Displays the **Archive disposal** and **Archive restore** tabs, which display the archive disposal and restore schedules. For each schedule, The Track Workflow Manager requests an archive to dispose or restore samples. Both tabs display the following screen elements.

Day	Displays the day or range of days to dispose or restore samples.
Start	Displays the start time of archive disposal or restoration.
Stop	Displays the stop time of archive disposal or restoration.
Add/Remove	Displays icons that are used to remove existing scheduled parameters and add new scheduled parameters.

Function buttons

Cancel	Cancels the changes.
Save	Saves the changes.

Related information...

- [Admin tab \(TSM\)](#), page 183

Parameter tab element descriptions (TSM)

The **Parameter** tab displays an overview of parameters and allows the administrator to configure them.

Parameters area

Element

Filter Displays a text box that is used to search the parameters by keyword.

Sample tab

Displays parameters related to sample processing.

Description Displays the following parameters:

- **Progress timeout add on time for samples to be only archived**
- **Progress timeout for each target step of samples with the priority HIGH**
- **Progress timeout for each target step of samples with the priority LOW**
- **Progress timeout for each target step of samples with the priority NORMAL**
- **Progress timeout percentage for when samples with priority HIGH will be preferred**
- **Progress timeout percentage for when samples with priority LOW will be preferred**
- **Progress timeout percentage for when samples with priority NORMAL will be preferred**
- **Progress timeout percentage when samples discipline for pre analytics will be removed**
- **Removal of sample from requested samples list after removal from area**
- **Requested samples user interface update interval**
- **Sample barcode length maximum**
- **Sample barcode length minimum**
- **Time till samples move to alternative target**
- **Time until samples with the priority HIGH are buffered (after loaded on CAR or last target)**
- **Time until samples with the priority LOW are buffered (after loaded on CAR or last target)**

- **Time until samples with the priority NORMAL are buffered (after loaded on CAR or last target)**
- **Wait time for further sample target plan**
- **Wait time for sample target plan from routing engine**

Value Displays the configured values for each parameter.

Unit Displays the unit of the parameter, if applicable.

CAR tab

Displays parameters related to sample CARs.

Description Displays the following parameters:

- **Charge level of CAR to go to charging lane**
- **Charge level of CAR to leave charging lane**

Value Displays the configured values for each parameter. The value of the parameter **Charge level of CAR to go to charging lane** cannot be modified.

Unit Displays the unit of the parameter, if applicable.

Modules tab

Displays a parameter related to the modules.

Description Displays the parameter **Language setup for modules' displays**.

Value Displays a drop-down list that is used to select the system language for all modules.

Unit Displays the unit of the parameter, if applicable.

Error areas tab

Displays and allows the administrator to configure parameters related to the error areas.

Error code Identifies the error scenario for which an error output area is configured. Error codes are displayed as individual message code numbers with short descriptions.

Error area Displays the output areas to which sample tubes are routed when the error scenarios are encountered.

Add/Remove Displays icons that are used to remove existing error areas and add new error areas.

Empty CAR limits tab

In the **Empty CAR limits** tab, administrators can configure the limits for the number of empty CARs to route to modules. If the defined threshold is reached for a module, these parameters ensure that other modules still have empty CARs available.

Module	Identifies the number of the module.
Limit	Displays a text box that is used to enter the maximum percentage of empty CARs that can be routed to the module.
Unit	Displays the unit of the parameter, if applicable.

Function buttons

Cancel	Cancels the changes.
Save	Saves the changes.

Related information...

- [Admin tab \(TSM\)](#), page 183

Transfer tab element descriptions (TSM)

On the **Transfer** tab, the administrator can export log files and recover data.

Track logs area

Function button

Download	Downloads the zipped track logs. NOTE: Downloading a file can result in a browser notification that the download is blocked. Select to keep the download in the browser download manager to retrieve it.
-----------------	--

Data recovery with routing engine area

Function button

Send	Transfers Track Workflow Manager data for all known samples.
-------------	--

Related information...

- [Admin tab \(TSM\)](#), page 183



Tubes tab element descriptions (TSM)

On the **Tubes** tab, the administrator can view the configuration of tube types.

Tubes tab

Filter area

All tubes	Displays all tube type data without any filters.
US tubes	Filters the data to only display tube types approved in the U.S.
EU tubes	Filters the data to only display tubes approved in the European Union.
Active tubes	Filters the data to only display tube types currently active on the track.

Tubes table area

Active	Displays a check box that is used to select the tube for use on the system.
Tube type	Displays a unique identifier of the tube type based on the vendor, dimensions, form, and color.
Region	Identifies the geographic regions in which the tube is approved.
Vendor	Displays the manufacturer of the tube type.
Size	Displays the dimensions of the tube.
TAC Learning Data	Displays a ratio that compares the number of learned tube assessments for the tube type against the total number of tube assessments on the system.
Cap	Displays a graphical representation of the cap.
Cap name	Identifies the name of the cap type.
Fluid	Identifies the type of fluid in the tube.
Cap color	Displays a graphical representation of the cap that displays the color of the cap.
Cap color name	Identifies the name of the color of the cap.

Module tubes tab

Displays module-specific tube information for use on the Aliquot Module and the ScrewCapper Module.

Function buttons

Cancel	Cancels the changes.
Save	Saves the changes.

Related information...

- [Admin tab \(TSM\)](#), page 183

Tube details screen element descriptions (TSM)

The Tube details screen displays additional information for a selected tube type. The Tube details screen can be accessed from the **Tubes** tab on the **Tubes** tab by tapping a tube type row.

Tube details area

Tube type	Displays a unique identifier of the tube type based on the vendor, dimensions, form, and color.
Weight	Displays the weight of the sample tube in decigrams.
Diameter	Displays the diameter of the sample tube in decimillimeters.
TAC data	Displays a check box that identifies whether there is Tube Assessment Center (TAC) data for the tube type.

Grip area

Displays parameters related to the surface area on a sample tube that can be gripped. The following parameters are displayed:

- Low
- High
- Open
- Decap
- Decap offset
- Decap profile

Volume area

Total volume	Displays the total volume of the tube in microliters.
Liquid volume	Displays the volume of the liquid in the tube in microliters.



Height area

Total	Displays the total height of the tube and cap in decimillimeters.
Tube	Displays the height of the tube without the cap in decimillimeters.

Module data area

Product code	Displays the product code.
Bottle type	Displays the bottle type.

TAC Learning area

Controller	Identifies the TAC module controller.
Quality	Displays the quality of the TAC learning process.
Date	Displays the date when the TAC learning process was performed.

Incompatible tubes area

Displays a list of the tubes types that cannot be active when the selected tube type is active.

NOTE: Not all tube types have incompatible tube types.

Function buttons

Close	Closes the Tube details screen.
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Related information...

- [Admin tab \(TSM\)](#), page 183

Monitoring tab element descriptions (TSM)

The Monitoring tab enables the administrator to configure a monitoring display. An individual monitoring view can be configured for each monitoring display.

Setup tab

Displays the settings for configuring the displayed information and the layout of a monitoring display.

Name	Displays a text box used to enter or edit the unique name of a display.
-------------	---

Orientation	Displays a drop-down list that is used to select Horizontal or Vertical mode. Horizontal orientation supports a resolution of 1920 pixels by 1080 pixels and vertical orientation supports a resolution of 1080 pixels by 1920 pixels.
Scaling	Displays a drop-down list that is used to set the size of the display content as Small , Medium , or Large .
View count	Displays a drop-down list that is used to set the number of stacked views as 1 view , 2 views , or 3 views .
Split view	Displays a check box that enables the view count to be doubled by splitting each stacked view.
View selection box:	To configure a view, select the view in the box. The height of a view can be changed through the view separator bar.
View	Displays a graphical representation of the available views for the monitoring display. The height of a selected split view can be adjusted by dragging the separator bar.
View	Displays a drop-down list that is used to select the view types. All lists all modules and track segments. Use the Left Arrow and Right Arrow buttons to transfer selected modules and track segments from All to Selected to filter the list. NOTE: The Areas not reachable and Track layout views do not have this functionality. NOTE: On the Messages view only, use the Left Arrow and Right Arrow buttons to transfer message codes from All to Ignored.
Module status	Displays the module status and combined area status, and an optional combined status of module-specific messages from the last 5 minutes.
Segment status	Displays the segment status and combined track element status, and optional combined status of segment-specific messages from the last 5 minutes.
Messages	Displays informational, warning, and error messages.
Traffic jam	Displays information about traffic jams in a red box, CARS that do not move or charge in a yellow box, and full cycles in a yellow box.
Module supply	Displays consumables levels on the modules.
Module waste	Displays waste fill levels on the modules.

Area status	Displays information about area fill levels in a gray box.
Track element errors	Displays the error counts associated with track element identifiers from the past two hours in a red box.
Track overview	Displays schematics for Circling and buffered samples , Preferred and error samples , and CARs on the system, as well as the routing engine connection status.

The **Circling and buffered samples** schematic displays information about samples on CARs that are unable to reach any module (**Circling samples**), samples stored on the Buffer Module for specified period (**Buffered for duration**), and samples stored on the Buffer Module that are unable to reach their configured destinations (**Buffered with target issue**).

The **Preferred and error samples** schematic displays the number of samples preferred to reach their destination based on their priority and the number of samples routing to error output areas.

The **CARs** schematic contains color-coded information about loaded, empty, and charging CARs.

Areas not reachable	Displays the names of five areas that are not being reached by the most samples. Samples with multiple target areas are included in the sample count for each area.
----------------------------	---

Track layout	Displays a schematic of the uploaded track layout.
---------------------	--

Archive temperature	Displays temperature data for the selected device controllers.
----------------------------	--

Height	Displays the height of the selected view as a percentage of the stacked view.
---------------	---

For problems only	Displays a check box that is used to filter the list of all modules and track segments for modules and track segments with a red or yellow status.
--------------------------	--

NOTE: This check box is available only for the **Module status**, **Segment status**, **Module supply**, and **Module waste** views.

Show error state Displays a check box that is used to add a column showing message status to the **Module status** and **Segment status** views.

NOTE: This check box is available only for the **Module status** and **Segment status** views.

Level Displays a drop-down list that is used to select the level of the track layout.

NOTE: This drop-down list is available only for the **Track layout** view.

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

NOTE: These icons are available only on the **Track overview** and **Track layout** views.

Display tab

Allows the user to configure the display monitors.

Elements

Hostname Displays the host name of the monitor.

Display no. Displays the number of the display. No more than eight displays can be configured.

Monitoring name Displays a drop-down list that is used to select a previously configured monitoring view.

Language Displays a drop-down list that is used to select the language of the display.

Add / Remove Displays icons that are used to remove existing monitors and add new monitors.

Function buttons

Preview Generates a preview of the monitoring display at a fixed resolution of 1920 pixels by 1080 pixels. The preview is automatically cleared after 2 minutes.

New Enables the addition of a view type.

Delete Deletes the view type.

Cancel Cancels the changes.

NOTE: This function button is available only on the **Display** tab.

Save Saves the changes.

Related information...

- [Admin tab \(TSM\)](#), page 183

Create a monitoring display (TSM)

User access level Administrator

Perform this procedure to create a monitoring display on the Track Sample Manager (TSM).

1. On the Main menu screen (TSM), tap **Admin**.
2. On the **Admin** tab, tap **Monitoring**.
3. On the **Monitoring** tab, tap **New**.
4. Enter the information for the new monitoring display.
 - a) In the **Name** text box, type a clear and descriptive name for the display.
 - b) In the **Orientation** drop-down list, tap an orientation.
 - c) In the **Scaling** drop-down list, tap the scaling preference.
 - d) In the **View count** drop-down list, tap a number of views.

NOTE: Tap the **Split view** check box to double the selected view count.
5. In the **View** drop-down list, tap a view type to configure.
All available modules and track segments for the selected view type are listed under **All**.
6. Use the **Left Arrow** and **Right Arrow** buttons to transfer selected modules and track segments from **All** to **Selected**.
Multiple selections are allowed. Depending on the selected view type, additional options are available:
 - For **Module status**, **Segment status**, **Module supply**, and **Module waste** views, the **For problems only** check box is available to filter the list under **All** for modules and track segments with a red or yellow status.
 - For **Module status** and **Segment status** views, the **Show error state** check box is available to add a column showing message statuses.
 - For the **Track layout** view, the **Level** drop-down list is available to select the level of the track layout.

NOTE: For traffic jam monitoring, the system generates a CAR jam notification only when two or more CARs are stopped in sequence.
7. If more than one view count was selected, repeat steps 5 (page 195) and 6 (page 195) for all additional view types.
8. To save the new monitoring display, tap **Save**.

IMPORTANT: All views must be configured before saving the new monitoring display.

- 9. In the list under the **Setup** tab, tap the new monitoring display name.
- 10. Tap **Preview**.
A preview of the monitoring display at a fixed resolution of 1920 pixels by 1080 pixels is generated. The preview is automatically cleared after 2 minutes.
- 11. If necessary, resize the views by dragging the separator bar at the **View** element and tap **Save**.

Related information...

- [Admin tab \(TSM\)](#), page 183

Distribution tab element descriptions (TSM)

The **Distribution** tab allows the user to configure the routing strategy for empty and loaded CARs.

Routing of empty CARs area

Modules	Displays All
Distribution	Displays a drop-down list that is used to determine the distribution strategy for all empty CARs either based on Throughput or Uniform distribution .
Queue length	Not applicable for Routing of Empty CARs .
Fill level	Not applicable for Routing of Empty CARs .
Statistics	Not applicable for Routing of Empty CARs .
Add / Remove	Not applicable for Routing of Empty CARs .

Routing of loaded CARs area

Modules	Navigates to the Module selection screen, which allows the administrator to select or edit the modules in a distribution group.	
Distribution	Displays a drop-down list that is used to select one of the following distribution strategies for loaded CARs.	
	Throughput	CARs are routed to the next available target as soon as possible based on processing times.
	Uniform distribution (long-term)	CARs are routed to alternative targets in the distribution group over a period of weeks to maintain an even processing load across similar modules.



	Uniform distribution (short-term)	CARs are regularly routed to alternative targets in the distribution group to achieve an even processing load across similar modules.
	Equal % fill level	CARs are routed to the storage modules in the distribution group in an order that achieves equal fill level percentages across similar modules.
	Switch at % fill level	CARs are routed to one module per area until the module reaches the configured fill level and another module is selected.
Queue length	Displays a text box that is used to enter the optimal queue length for the modules in a distribution group set to a long-term uniform distribution mode. NOTE: This parameter is available only when the distribution mode Uniform distribution (long-term) is selected.	
Fill level	Displays a text box that is used to enter the fill level of a storage module as the percentage that should be reached before another similar module is selected. NOTE: This parameter is available only when the distribution mode Switch at % fill level is selected.	
Statistics	Displays an icon that navigates to the Uniform distribution overview screen, which displays the following distribution statistics for the modules in the distribution group: • Module • Point • Sample count • Target order • Areas • Order NOTE: Statistics are available only for the distribution modes Uniform distribution (long-term) and Uniform distribution (short-term) . On the Uniform distribution overview screen, Order is available only for Uniform distribution (long-term) .	
Add / Remove	Displays icons that are used to remove existing distribution groups and add new distribution groups.	

Function buttons

Cancel	Cancels the changes.
Save	Saves the changes.

Related information...

- [Admin tab \(TSM\)](#), page 183

Disciplines tab element descriptions (TSM)

The **Disciplines** tab allows the administrator to configure disciplines on the system. Disciplines are used to direct samples from common pre-analytical areas and common error areas to a specific module.

A sample with no assigned discipline can be routed to any module. A sample assigned to a discipline can be processed on modules hosting that discipline or on modules without assigned disciplines.

Discipline configuration area

Selecting a predefined discipline displays the selected modules, input areas, and active tube types configured for the discipline. Disciplines can be modified and created when the Track Sample Manager (TSM) operation mode is Disconnected or Standby.

In the **Modules**, **Input areas**, and **Active tube types** areas, **All** lists all available modules. Use the **Left Arrow** and **Right Arrow** buttons to add modules, input areas, and active tube types to the selected discipline. Adding or removing modules from disciplines has no immediate impact on defined sample disciplines or the routes of loaded CARs. Only changes to the target areas of samples in any Buffer Module update immediately. All other changes impact future TSM decisions.

Name	Displays a text box that is used to enter a new discipline name or to edit an existing discipline name.
------	---

Function buttons

Create	Populates the lists of all available modules, input areas, and active tube types, which can then be filtered and saved as a new discipline.
Delete	Deletes the selected discipline. NOTE: Disciplines cannot be deleted when the TSM operation mode is Standby.
Cancel	Cancels the changes.
Save	Saves the changes.



Related information...

- [Admin tab \(TSM\)](#), page 183

Firmware tab element descriptions (TSM)

The **Firmware** tab displays information about the firmware releases used on the system.

Elements

Name	Displays the name of the firmware.
Status	Displays the installation status of the firmware.
Installation date	Displays the installation date of the firmware.

Related information...

- [Admin tab \(TSM\)](#), page 183

Change history tab element descriptions (TSM)

The Change history tab displays a summary table of the previous actions performed by all users of the Track Sample Manager.

Change history area

Start date	Displays a box that is used to select a search start date. To select the search start date, tap the calendar inside the box. To configure the month and year, tap the Left Arrow or Right Arrow button, and then tap the day.
-------------------	---

End date	Displays a box that is used to select a search end date. To select the search end date, tap the calendar inside the box. To configure the month and year, tap the Left Arrow or Right Arrow button, and then tap the day.
-----------------	---

 button	The Previous Week button modifies the start and end dates to the week prior to the selected values.
---	--

 button	The Next Week button modifies the start and end dates to the week after the selected values.
---	---

Filter	Displays a text box that is used to enter the expression to filter the change history.
---------------	--

Change history table area

Change date	Identifies the date of the change.
--------------------	------------------------------------



Change user	Identifies the user who made the change.
Menu	Displays the tab or location of user activity.
Value	Displays the module or segment controller.
Sub ID	Identifies the parameter that changed within a specific area of the screen.
Sub value	Displays the associated value of the parameter.
Field	Identifies the field in which the change was made.
Old value	Displays the original content prior to the change.
New value	Displays the changed content.

Related information...

- [Admin tab \(TSM\)](#), page 183

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 123
- [Roles and permissions \(TWM\)](#), page 201
- [Main menu screen \(TWM\)](#), page 202

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 the functions relevant to the operator and administrator.

Table 20: Roles

Username	Group	Description
service	Service	Service technician
admin	Administrator	Local administrator
operator	User	Track operator

NOTE: The listed user roles are intended to differentiate access levels only. All users must be trained operators.

Table 21: Permissions

Role	Description
Service	All functions and buttons are available and enabled.

Continued on next page...

...Continued from previous page

Role	Description
Administrator	Nearly all functions and buttons are available and enabled on the Run and Workflow screens and including authorization to create new tests on the Master data screen. The following restrictions exist: • JSON notification information is not displayed on the Sample details screen (Run → Sample search → Sample details). • No authorization to edit the settings of users with the service access level. • No authorization to change values in the Service tab: – (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 201

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 batch processes.
- 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 201
- [Main menu screen element descriptions \(TWM\)](#), page 203
- [Run screen \(TWM\)](#), page 204
- [Workflow screen \(TWM\)](#), page 231
- [Master data screen \(TWM\)](#), page 246
- [Admin screen \(TWM\)](#), page 257

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.
 button	The Log off button logs off from TWM.
Run button	Navigates to the Run screen.
Workflow button	Navigates to the Workflow screen.
Master data button	Navigates to the Master data screen.
Admin button	Navigates to the Admin 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.				
Working hours	Displays the current working hours status of the laboratory automation system (LAS): <table><tr><td>Green</td><td>The LAS is operating within working hours. Newly loaded samples are being processed normally.</td></tr><tr><td>Red</td><td>The LAS is operating outside working hours. Newly loaded routine samples will be processed during the next working hours cycle.</td></tr></table>	Green	The LAS is operating within working hours. Newly loaded samples are being processed normally.	Red	The LAS is operating outside working hours. Newly loaded routine samples will be processed during the next working hours cycle.
Green	The LAS is operating within working hours. Newly loaded samples are being processed normally.				
Red	The LAS is operating outside working hours. Newly loaded routine samples will be processed during the next working hours cycle.				
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.				

User history cleanup status Displays the user history cleanup status.

If the user history cleanup status is red, the status displays the user history not deleted. If the user history cleanup status does not change back to green after a few days, contact an Abbott Laboratories representative or an authorized service representative.

Related information...

- [Main menu screen \(TWM\)](#), page 202
- [Log on to the Track Workflow Manager \(TWM\)](#), page 130

Run screen (TWM)

On the Run screen of the Track Workflow Manager (TWM), the operator and administrator can view the following information:

- Sample details, tests, and routing history
- Informational, warning, and error messages
- Settings for enabling or disabling one or more tests for batch testing
- Settings for starting or stopping batch processes
- Settings for enabling or disabling one or more analyzers
- Settings for enabling or disabling one or more tests
- TWM incoming and outgoing connection data

Related information...

- [Main menu screen \(TWM\)](#), page 202
- [Run screen element descriptions \(TWM\)](#), page 204
- [Sample search screen \(TWM\)](#), page 205
- [Messages screen \(TWM\)](#), page 214
- [Batch screen \(TWM\)](#), page 216
- [Instrument status screen \(TWM\)](#), page 220
- [Test status screen \(TWM\)](#), page 225
- [Connections screen \(TWM\)](#), page 229

Run screen element descriptions (TWM)

The Run screen displays the following screen elements.

Elements

Sample search button Navigates to the Sample search screen.

Messages button Navigates to the Messages screen.

Batch button Navigates to the Batch screen.

Instrument status button	Navigates to the Instrument status screen.
Test status button	Navigates to the Test status screen.
Connections button	Navigates to the Connections screen.

Related information...

- [Run screen \(TWM\)](#), page 204
- [Sample search screen element descriptions \(TWM\)](#), page 205
- [Sample details screen element descriptions \(TWM\)](#), page 210
- [Messages screen \(TWM\)](#), page 214
- [Instrument status screen \(TWM\)](#), page 220
- [Test status screen \(TWM\)](#), page 225
- [Connections screen \(TWM\)](#), page 229

Sample search screen (TWM)

On the Sample search screen, the operator and administrator can search for samples based on the following criteria:

- Sample details
- Tests and fluid types
- Sample location

Related information...

- [Run screen \(TWM\)](#), page 204
- [Sample search screen element descriptions \(TWM\)](#), page 205
- [Sample search result screen element descriptions \(TWM\)](#), page 207
- [Select tests screen element descriptions \(TWM\)](#), page 208
- [Inactivate a sample \(TWM\)](#), page 209
- [Remove a sample \(TWM\)](#), page 209
- [Sample details screen element descriptions \(TWM\)](#), page 210
- [Search for samples and sample details \(TWM\)](#), page 213
- [View the samples to process \(TWM\)](#), page 219

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 / Patient	Displays a text box that is used to search by the sender or patient name.
Order time from	Displays a text box that is used to search by the start order time.
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.
Current instrument	Displays a drop-down list that is used to search by the current instrument.
Sector/Rack	Displays two drop-down lists that are used to select the sector in an area and rack in a sector as search criteria. Sector refers to the Storage Unit of an Archive.
Next Area	Displays a drop-down list that is used to search by the next expected areas.
Batch workflow	Displays a drop-down list that is used to search by the batch workflow and includes the options All and Open batch tests .
Test / Fluid type	Displays the selected test and fluid type pairs that are used to search for samples with the selected Test status .
Test status	Displays a drop-down list that is used to search by the selected test status for the selected Test / Fluid type .

Function buttons

Edit	Navigates to the Select tests screen.
Clear	Clears all existing selections for Test / Fluid type .
Search	Navigates to the Sample search result screen.

Related information...

- [Sample search screen \(TWM\)](#), page 205

- [Run screen element descriptions \(TWM\)](#), page 204

Sample search result screen element descriptions (TWM)

The Sample search result screen displays a list of search results.

Elements

Track entry	Displays the time that the sample was placed on the track.
Sample ID / Aliq	Displays the sample ID or aliquot number.
Order ID	Displays the order ID from the laboratory information system.
Sender	Displays the sender.
Prio.	Displays the priority of the sample.
Last area	Displays the most recent area where the sample was located.
Current location	Displays the current area, instrument, sector, rack, and position 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, resulted, validated, and total tests.
Request to	Displays a drop-down list that allows the operator to request the sample to an output area.
Count	Displays the number of samples returned by the search query.

Function buttons

Request	Requests a sample to move to the selected output area. The sample is moved to the output area after the current processing step is completed.
Remove sample(s)	Deletes from the database any manually removed samples and any orders that consist exclusively of the manually removed samples. NOTE: This function button is available only to the administrator. Use this function button only for samples that are not physically on the track, which includes storage modules. To return a removed sample to the track, reload the sample tube in the correct input area of the Input/Output Module.
Inactivate track sample(s)	Informs the Track Workflow Manager (TWM) and middleware that a sample has been manually removed from the track. The sample is inactivated in TWM.

NOTE: This function button is available only to the administrator. Use this function button only for samples that are not physically on the track, which includes storage modules. To return a removed sample to the track, reload the sample tube in the correct input area of the Input/Output Module.

Export Exports and downloads data to an Excel file.

NOTE: Downloading a file can result in a browser notification that the download is blocked. Select to keep the download in the browser download manager to retrieve it.

Close Closes the screen.

Related information...

- [Sample search screen \(TWM\)](#), page 205

Select tests screen element descriptions (TWM)

On the Select tests screen, the operator can select test and fluid type pairs to use when performing a sample search. The Select tests screen can be accessed from the Sample search screen by tapping the **Edit** button next to the **Test / Fluid type** field.

Elements

Filter Displays a text box that is used to enter the expression to filter tests.

Test codes only Displays a check box that is used to show only test codes. When this parameter is selected and applied, the sample search is performed only for test codes.

Code Displays the code of the test.

Description Displays a short description of the test.

Analysis Type Displays the type of analysis.

FluidType Displays the fluid types.

Function buttons

Cancel Cancels the selections.

Ok Applies the selections.

Related information...

- [Sample search screen \(TWM\)](#), page 205

Inactivate a sample (TWM)

User access level Administrator

Perform this procedure to inactivate a manually removed sample in the Track Workflow Manager (TWM) database.

IMPORTANT: A sample that was manually removed from a storage module or Buffer Module must be marked as inactive or removed. Consequently, inactive samples will resume routing when placed back on the Input/Output Module. Removed samples can accept new middleware orders or will proceed with no order actions when placed back on the Input/Output Module.

CAUTION: Do not remove samples from a storage module or Buffer Module. If samples are removed from a storage module or Buffer Module, they must be inactivated or removed in TWM before they are placed back in the Input/Output Module for appropriate routing.

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

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. Tap the sample to be inactivated.
6. Tap **Inactivate track sample(s)**.
7. When a confirmation message is displayed, tap **OK**.

In the Information text box on the Sample details screen, the sample is marked as removed.

NOTE: If the sample is reloaded onto the track, it will become active again. Otherwise, the inactivated sample will be deleted from the database during the next scheduled database cleanup.

Related information...

- [Sample search screen \(TWM\)](#), page 205

Remove a sample (TWM)

User access level Administrator

Perform this procedure to delete a manually removed sample from the Track Workflow Manager (TWM) database.

IMPORTANT: A sample that was manually removed from a storage module or Buffer Module must be marked as inactive or removed. Consequently, inactive samples will resume routing when placed back on the Input/Output Module. Removed samples can accept new middleware orders or will proceed with no order actions when placed back on the Input/Output Module.

CAUTION: Do not remove samples from a storage module or Buffer Module. If samples are removed from a storage module or Buffer Module, they must be inactivated or removed in TWM before they are placed back in the Input/Output Module for appropriate routing.

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

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. Tap the sample to be deleted.
 6. Tap **Remove sample(s)**.
 7. When a confirmation message is displayed, tap **OK**.
 8. If a second confirmation message is displayed, tap **OK** to confirm that the sample can be deleted.

NOTE: A second confirmation message is displayed only if the sample has pending tests that have not yet routed for processing.

The sample is deleted from the TWM database.

Related information...

- [Sample search screen \(TWM\)](#), page 205

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 / Aliq	Displays the sample ID and aliquot number.

Tube type	Displays the tube type.
Cap status	Displays the cap status.
Current location	Displays the current area, instrument, sector, rack, and position where the sample is located.
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 middleware.
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 following additional routing history information for the selected sample:

- **Sample ID**
- **Message date**
- **Message type**
- **Routing purpose**
- **Error**

Sender tab

Displays the sample details for sender information.

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

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 middleware.

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 205
- [Run screen element descriptions \(TWM\)](#), page 204

Search for samples and sample details (TWM)

User access level Operator and administrator

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, and routing history.

1. On the Main menu screen (TWM), tap **Run**.
2. On the Run 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 ID / Alq**
 - **Sample priority**
 - **Sender / Patient**
 - **Current location**
 - **Batch workflow**
 - **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 or aliquot number
 - Order date
 - Fluid type
 - Tube type
 - Current area, instrument, sector, rack, and position
 - 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 205

Messages screen (TWM)

On the Messages screen, the operator and administrator can view informational, warning, and error messages.

Related information...

- [Run screen \(TWM\)](#), page 204
- [Messages screen element descriptions \(TWM\)](#), page 215
- [View the messages \(TWM\)](#), page 216
- [Run screen element descriptions \(TWM\)](#), page 204

Messages screen element descriptions (TWM)

The Messages screen displays message information.

Elements

Manual refresh	Refreshes the messages manually. The start date and end date can be selected. The date range is restricted to 24 hours.
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.
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.
Group	Displayed as a check box. 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 data-bbox="630 1539 1195 1675"> <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.
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Related information...

- [Messages screen \(TWM\)](#), page 214

View the messages (TWM)

User access level	Operator and administrator
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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 Run 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 214

Batch screen (TWM)

On the Batch screen, the operator and administrator can perform the following functions:

- View all defined batch tests.

- View the current running status of all batch tests.
- Disable and enable one or more tests for batch testing.
- Stop and start batch processes.

Related information...

- [Run screen \(TWM\)](#), page 204
- [Run Batch screen element descriptions \(TWM\)](#), page 217
- [View the samples to process \(TWM\)](#), page 219
- [Stop a batch process \(TWM\)](#), page 219
- [Start a batch process \(TWM\)](#), page 220

Run Batch screen element descriptions (TWM)

The Run Batch screen displays an overview of all batch processes.

Element

Filter Displays a text box that is used to enter the expression to filter batches.

Run Batch table area

Name Displays the batch name.

Status Displays the current running status of the batch process:

Gray The batch process is not running.

Green The batch process is running.

Samples to process Displays the number of samples for which at least one test is not yet in downloaded status. Tapping the number value in this column navigates to the Sample search screen with samples filtered by the batch workflow.

Name Displays the batch name.

NOTE: This element is available only after a batch is selected.

Waiting storage Displays the current position of the batch process.

NOTE: This element is available only after a batch is selected.

Run duration (hours) Displays a text box that is used to enter the intended run duration. The time range is restricted to 12 hours. The Track Workflow Manager automatically stops the batch process when the run duration expires. If run duration is not configured, the operator must manually stop the batch process.

NOTE: This element is available only after a batch is selected.

Expired storage Displays a text box that is editable only by service or administrator user access level.

NOTE: This element is available only after a batch is selected.

Batch tests table area

NOTE: This area is available only after a batch is selected.

Code Displays the short name of the specific test and a check box next to the **Code** column header. This check box is used to disable or enable all tests at one time.

Displays a check box for each test row.

Fluid type Displays the sample material code.

Filter Displays a text box that is used to search for individual analyses or sample codes.

Areas table area

NOTE: This area is available only after a batch is selected.

Area Displays the short name of the areas and instrument combinations and a check box next to the **Area** column header. This check box is used to deselect or select all instruments at one time.

Displays a check box for each area row.

Instrument Displays the instrument or instrument combination.

Count Displays the number of tests for the area or instrument combination.

Function buttons

Refresh Refreshes the screen.

Run Starts a batch process.

NOTE: This function button is available after a nonrunning batch is selected.

Stop Manually stops a batch process.

NOTE: This function button is available after a running batch is selected.

Related information...

- [Batch screen \(TWM\)](#), page 216

View the samples to process (TWM)

User access level Operator and administrator

Perform this procedure to view the samples to process for a selected batch on the Track Workflow Manager (TWM). The Sample search screen can be accessed directly from the Run Batch screen to view the samples assigned to a batch process.

1. On the Main menu screen (TWM), tap **Run**.
2. On the Run screen, tap **Batch**.
3. On the Run batch screen, tap the number value in the **Samples to process** column in the row of the selected batch.

The Sample search screen is displayed with a list of samples assigned only to the batch workflow.

4. To return to the Run batch screen, tap **Close**.

Related information...

- [Batch screen \(TWM\)](#), page 216
- [Sample search screen \(TWM\)](#), page 205

Stop a batch process (TWM)

User access level Operator and administrator

Perform this procedure to stop a running batch process on the Track Workflow Manager (TWM). If a run duration was specified, the batch process automatically stops after the predefined time period has elapsed.

1. On the Main menu screen (TWM), tap **Run**.
2. On the Run screen, tap **Batch**.
3. On the Run batch screen, tap between the **Name** and **Status** columns in the row of the running batch to be stopped.
4. Tap **Stop**.
5. When a confirmation message is displayed, tap **OK**. If the batch tests are still processing, tap **Cancel** and manually stop the batch at a later time.

If all tests in a batch process are stopped, the batch status turns from green to gray. If some tests continue processing, the status remains green.

Related information...

- [Batch screen \(TWM\)](#), page 216

Start a batch process (TWM)

User access level Operator and administrator

Perform this procedure to start a nonrunning batch process on the Track Workflow Manager (TWM).

1. On the Main menu screen (TWM), tap **Run**.
2. On the Run screen, tap **Batch**.
3. On the Run batch screen, tap between the **Name** and **Status** columns in the row of the nonrunning batch to be run.
4. When the batch tests and areas are displayed, tap the check box next to the **Code** and **Area** columns in the rows of the tests to be enabled.

NOTE: To enable all tests at one time, tap the appropriate check boxes next to the **Code** and **Area** column headers.

5. Tap **Run**.

The batch process is now running and the status turns from gray to green.

Related information...

- [Batch screen \(TWM\)](#), page 216

Instrument status screen (TWM)

On the Instrument status screen, the operator and administrator 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...

- [Run screen \(TWM\)](#), page 204
- [Instrument status screen element descriptions \(TWM\)](#), page 221
- [Tests of instrument screen element descriptions \(TWM\)](#), page 221
- [View the instrument status \(TWM\)](#), page 222
- [Disable an instrument \(TWM\)](#), page 223
- [Enable an instrument \(TWM\)](#), page 223
- [Disable the tests on the Instrument status screen \(TWM\)](#), page 224
- [Enable the tests on the Instrument status screen \(TWM\)](#), page 224
- [Run screen element descriptions \(TWM\)](#), page 204

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 display the Tests of instrument screen for the selected instrument.

Function buttons

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

Related information...

- [Instrument status screen \(TWM\)](#), page 220

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 disabled tests only.
Batch tests only	Displays a check box that is used to view the tests assigned to batch processes 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.
Batch Process	Displays the batch processes associated with the test. NOTE: This element is available only when the Batch tests only option is selected.

Function buttons

Cancel	Cancels the changes.
Save	Saves the changes.

Related information...

- [Instrument status screen \(TWM\)](#), page 220

View the instrument status (TWM)

User access level Operator and administrator

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 Run 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 220

Disable an instrument (TWM)

User access level Operator and administrator

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 Run screen, tap **Instrument status**.
3. On the Instrument status screen, tap to clear the 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 220

Enable an instrument (TWM)

User access level Operator and administrator

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 Run screen, tap **Instrument status**.
3. On the Instrument status screen, tap the 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 220

Disable the tests on the Instrument status screen (TWM)

User access level Operator and administrator

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 Run 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 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 220

Enable the tests on the Instrument status screen (TWM)

User access level Operator and administrator

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 Run 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 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 220

Test status screen (TWM)

On the Test status screen, the operator and administrator 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...

- [Run screen \(TWM\)](#), page 204
- [Test status screen element descriptions \(TWM\)](#), page 225
- [View the test status \(TWM\)](#), page 227
- [Disable the tests by instrument on the Test status screen \(TWM\)](#), page 227
- [Enable the tests by instrument on the Test status screen \(TWM\)](#), page 227
- [Disable the tests by type of analysis on the Test status screen \(TWM\)](#), page 228
- [Enable the tests by type of analysis on the Test status screen \(TWM\)](#), page 228
- [Run screen element descriptions \(TWM\)](#), page 204

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.
Batch tests only	Displays a check box that is used to view the tests assigned to batch processes 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.
Batch Process	Displays the batch processes associated with the test.

NOTE: This element is available only when the **Batch tests only** option is selected.

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.
Batch tests only	Displays a check box that is used to view the tests assigned to batch processes only.

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.
Batch Process	Displays the batch processes associated with the test.

NOTE: This element is available only when the **Batch tests only** option is selected.

Function buttons

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

Related information...

- [Test status screen \(TWM\)](#), page 225

View the test status (TWM)

User access level	Operator and administrator
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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 Run 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 225

Disable the tests by instrument on the Test status screen (TWM)

User access level	Operator and administrator
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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 Run 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 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 225

Enable the tests by instrument on the Test status screen (TWM)

User access level	Operator and administrator
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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 Run 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 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 225

Disable the tests by type of analysis on the Test status screen (TWM)

User access level Operator and administrator

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 Run 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 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 225

Enable the tests by type of analysis on the Test status screen (TWM)

User access level Operator and administrator

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 Run 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 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 225

Connections screen (TWM)

On the Connections screen, the operator and administrator can view the incoming and outgoing connections to the Track Workflow Manager.

Related information...

- [Run screen \(TWM\)](#), page 204
- [Connections screen element descriptions \(TWM\)](#), page 229
- [View the connections to TWM](#), page 231
- [Run screen element descriptions \(TWM\)](#), page 204

Connections screen element descriptions (TWM)

The Connections screen displays connection information.

Connections table area

Interface name	Displays the interface name. Up to four middleware connections are possible.
Enabled	Displays a check box that is used to enable or disable any additional outgoing middleware connections if multichannel communication is supported by the interface. Connections to at least one laboratory information system (LIS1) and to the Track Sample Manager (TSM) are always enabled.

NOTE: This functionality is available only to the administrator during the operation mode of Disconnected.

Connection direction	Displays the connection direction:	
	Incoming	For middleware and TSM
	Outgoing	For middleware and TSM
Connection status	Displays the connection status:	
	Green	The interface is connected.
	Red	The interface is not connected.
	Gray	The interface is disabled.
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.	
Messages processed	Displays the number of sent or received messages since the last operation mode change to a status of Online.	
Message ack time	Displays the time in milliseconds when the last sent message was acknowledged.	
	NOTE: This information is displayed only for outgoing connections.	
Unsent messages	Displays the number of unsent messages.	
Move messages	Allows for the reallocation of unsent messages from a disabled and disconnected outgoing middleware connection to any enabled outgoing middleware connection.	
	NOTE: This functionality is available only to the administrator during the operation mode of Disconnected.	
Clear messages	Clears the buffered messages in queue.	
	NOTE: This functionality is available only to the administrator.	
Operation mode	Displays the current operational status as Online , Disconnected , or LIS Data Recovery .	
	NOTE: The operation mode can be viewed by the operator, but is editable only by the service or administrator user access level.	
Function buttons		
Refresh	Refreshes the screen.	

Related information...

- [Connections screen \(TWM\)](#), page 229

View the connections to TWM

User access level Operator and administrator

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 Run 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 green, red, or gray:

Green	The interface is connected.
Red	The interface is not connected.
Gray	The interface is disabled.

Related information...

- [Connections screen \(TWM\)](#), page 229

Workflow screen (TWM)

On the Workflow screen of the Track Workflow Manager (TWM), the administrator can access the following information:

- Definition of final actions
- Configuration of fluid types, tests, and areas
- Configuration of batch processes
- Configuration of error output areas
- Configuration of tube types



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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...

- [Main menu screen \(TWM\)](#), page 202

- [Workflow screen element descriptions \(TWM\)](#), page 232
- [Final actions screen \(TWM\)](#), page 232
- [Fluid types screen \(TWM\)](#), page 234
- [Tube types screen \(TWM\)](#), page 237
- [Tests screen \(TWM\)](#), page 238
- [Areas screen \(TWM\)](#), page 241
- [Batch screen \(TWM\)](#), page 244
- [Error output areas screen \(TWM\)](#), page 246

Workflow screen element descriptions (TWM)

The Workflow overview screen displays the following screen elements.

Elements

Final actions button	Navigates to the Final actions screen.
Fluid types button	Navigates to the Fluid types screen.
Tube Types button	Navigates to the Tube Types screen.
Tests button	Navigates to the Tests screen.
Areas button	Navigates to the Areas screen.
Batch button	Navigates to the Batch screen.
Error output areas button	Navigates to the Error output areas screen.

Related information...

- [Workflow screen \(TWM\)](#), page 231

Final actions screen (TWM)

On the Final actions screen, the administrator can define final actions.

Related information...

- [Workflow screen \(TWM\)](#), page 231
- [Final actions screen element descriptions \(TWM\)](#), page 232
- [Exceptions screen element descriptions \(TWM\)](#), page 233

Final actions screen element descriptions (TWM)

The Final action screen displays the following screen elements.

Final actions table area

Seq.	Displays a text box that can be used to configure the sequence for the final action. The Track Workflow Manager (TWM) prioritizes higher
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	sequence numbers if multiple final action options are available for a sample.
Name	Displays the name of the final action.
Final target area	Displays a drop-down list that is used to select output and archive areas that have been configured on the Areas screen.
Final cap status	Displays a drop-down list that is used to select one of the following statuses: • Any • Closed • Open
Long wait	Displays a check box that is used to identify no more than one final action as a long-wait final action. NOTE: This check box is available only if the selected Final target area is an archive area.
Archive time (units)	Displays a text box that is used to define archive time. Depending on the previously configured unit, this value must not exceed 60 days, 1440 hours, or 86400 minutes. NOTE: This parameter is available only if the selected Final target area is an archive area.
Exceptions	Displays an icon that is used to navigate the Exceptions screen.
Add / Remove	Displays icons that are used to remove existing final actions and add new final actions.
Function buttons	
Cancel	Cancels the changes.
Save	Saves the changes.

Related information...

- [Final actions screen \(TWM\)](#), page 232

Exceptions screen element descriptions (TWM)

On the Exceptions screen, the administrator can configure specific archive durations based on defined sample criteria. The Exceptions screen can be accessed from the Final actions screen by tapping the icon in the **Exceptions** column.

Elements

Condition field	Displays a drop-down list that is used to select one of the following conditions: • Laboratory production • Laboratory requesting • Ward • Ward admission • Doctor requesting • Doctor attending
Condition value	Displays a text box that is used to enter a user-defined value to trigger the exception.
Action field	Displays a drop-down list that is used to select the configuration Archive time (units) .
Action value	Displays a text box that is used to enter a user-defined value for the action.
Add / Remove	Displays icons that are used to remove existing exceptions and add new exceptions.

Function buttons

Cancel	Cancels the changes.
Confirm	Confirms the changes.

Related information...

- [Final actions screen \(TWM\)](#), page 232

Fluid types screen (TWM)

On the Fluid types screen, the administrator can view the configuration of fluid types.

Related information...

- [Workflow screen \(TWM\)](#), page 231
- [Fluid types screen element descriptions \(TWM\)](#), page 234
- [Fluid types details screen element descriptions \(TWM\)](#), page 235

Fluid types screen element descriptions (TWM)

The Fluid types screen displays the following screen elements.

Fluid types table area

Code	Displays the code of the fluid type.
Description	Identifies the fluid type.
Centrifugation	Identifies the centrifugation profile.
Cap status	Identifies whether the tube type is Open , Closed , or Any .
Final action	Identifies the final action to use for the fluid type.
Config.	Displays a check box that identifies whether the fluid type is active.
Edit	Displays an icon that is used to navigate to the Fluid type details screen.

Related information...

- [Fluid types screen \(TWM\)](#), page 234

Fluid types details screen element descriptions (TWM)

On the Fluid type details screen, the administrator can configure fluid type parameters. The Fluid type details screen can be accessed from the Fluid types screen by tapping a row or an **Edit** icon.

General data area

Code	Displays the fluid type code.
Description	Identifies the sample material.
Centrifuge if all tests disabled	Displays a check box that is used to select whether to centrifuge the sample if all remaining tests are disabled.
Aliquot mandatory, if all tests disabled wait expired	Displays a check box that is used to select whether to process the aliquot tests on the sample if the wait has expired due to all remaining tests being disabled.

Preconditions area

Centrifugation	Displays a drop-down list that is used to select the centrifugation profile that will be used for samples of that fluid type.
Cap status	Displays a drop-down list that is used to determine whether samples containing the fluid type will have the cap status of Any , Closed , or Open

No order actions area

Run preconditions	Displays a check box that is used to select whether to process the configured preconditions if the sample is loaded before orders are received.
Order wait time (min)	Displays a text box that is used to enter the time in minutes that TWM will wait for orders to be received before performing the No order action .
No order action	Displays a drop-down list that is used to select the output area or archive area to which to send the sample that has not yet received an order when loaded.

Post on track test actions area

Apply post order wait actions	Displays a drop-down list that is used to select one of the following options to determine when the post-order wait will occur for off-track tests or to configure the routing of a sample that includes on-track tests, off-track tests, or aliquot tests: • No waiting • Before aliquoting • After aliquoting
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Post-order actions area

Wait cap status	Displays a drop-down list that is used to determine whether samples containing the fluid type will have the cap status of Any , Closed , or Open prior to the selected wait action.
Final action	Displays a drop-down list that is used to select the configured final action to use.
Wait	Displays a drop-down list that is used to determine which of the following wait actions to perform: • No wait • Wait unconditional • Wait for resulted • Wait for validated

Wait time (min)	Displays a text box that is used to enter the time in minutes that TWM will wait after processing all ordered tests before performing the final action. NOTE: The wait time value must not exceed 1440 minutes. If the value exceeds 540 minutes, the Wait cap status must be set to Closed .
Wait - incomplete final action area	Displays a drop-down list that is used to select the output area or archive area to which to send the sample that has not yet received the required test status when the wait time expires.

Function buttons

Remove configuration	Removes the existing configuration for the fluid type.
Cancel	Cancels the changes.
Save	Saves the changes.

Related information...

- [Fluid types screen \(TWM\)](#), page 234

Tube types screen (TWM)

On the Tube types screen, the administrator can view the configuration of tube types.

Related information...

- [Workflow screen \(TWM\)](#), page 231
- [Tube types screen element descriptions \(TWM\)](#), page 237

Tube types screen element descriptions (TWM)

The Tube types screen displays an overview of the configuration of tube types.

Tube Types area

Tube Type Identifier	Displays a unique identifier of the tube type based on the vendor, dimensions, form, and color.
Vendor	Identifies the vendor of the tube type.
Dimensions	Displays the dimensions of the tube type.
Size	Identifies whether the tube type is Large or Small .
Cap type	Identifies whether the cap type is Push or Screw .
Cap status	Identifies whether the tube type is Capped or Open .
Fluid type	Displays the fluid type.

Pre analytics wait time	Displays additional wait times for select tube types before pre-analytical processing steps.
Exceptions	Displays an icon that is used to navigate to the Exceptions screen, on which there is no available functionality.
Remove config.	Displays a button that is used to remove the selected configuration.

Function buttons

Cancel	This function button is unavailable on this screen.
Save	This function button is unavailable on this screen.

Related information...

- [Tube types screen \(TWM\)](#), page 237

Tests screen (TWM)

On the Tests screen, the administrator can access the configuration of tests.

Related information...

- [Workflow screen \(TWM\)](#), page 231
- [Tests screen element descriptions \(TWM\)](#), page 238
- [Configure a test \(TWM\)](#), page 241

Tests screen element descriptions (TWM)

The Tests screen displays an overview of the configuration of tests.

Elements

Filter	Displays a text box that is used to enter the expression to filter tests.
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Tests table area

Seq.	Displays a text box that can be used to configure the sequence for the test. The Track Workflow Manager (TWM) prioritizes higher sequence numbers.
Code	Displays the code of the test.
Descr.	Displays a short description of the test.
T. of A.	Displays the type of analysis.
Fl. Ty.	Displays the fluid types.
Config.	Displays a check box that is used to identify whether the test is configured.

Analytical / sort test definition area

Code	Displays the code of the test.
Description	Displays a short description of the test.
Type of analysis	Displays the type of analysis.
Fluid types	Displays the fluid types.

Preconditions tab

Use area 'Test not available'	Displays a check box that is used to specify whether to route the tube to the Test not available output area if the test is unavailable on the track.
Upgrade sample priority	Displays a check box that is used to upgrade the sample priority to HIGH if a middleware order with this test is received for the sample.
Pre-analytics wait time after draw time / system entry (min)	Displays a text box that is used to enter additional wait times in minutes for select tests before pre-analytical processing steps.
Aliquot volume (µl)	Displays a text box that is used to enter the volume of sample material in microliters to aspirate from a primary tube to dispense into a secondary tube.
Warm-up time	Displays a check box that is used to specify whether to send a stored sample to a Buffer Module to wait for the configured warm-up period.
Ignore wait before off track tests	Displays a check box that is used to specify whether to ignore the Apply post order wait actions configuration.

Post actions tab

Wait	Displays a drop-down list that is used to select one of the following wait actions: • No wait • Wait unconditional • Wait for resulted • Wait for validated
Wait time (min)	Displays a text box that is used to enter the wait time in minutes that TWM will wait after processing the test.

Wait - incomplete final action area	Displays a drop-down list that is used to select the output area or archive area to which to send the sample that has not yet received the required test status when the wait time expires.
Delay wait until post order	Displays a check box that is used to delay the wait action until after all on-track tests are sampled at the analyzer.
Post order final action	Displays a drop-down list that is used to select the configured final action to use for the test.

Exceptions tab

Condition field	Displays a drop-down list that is used to specify one of the conditions that will apply the exception: • Laboratory production • Laboratory requesting • Ward • Doctor requesting • Doctor attending • Ward admission
Condition value	Displays a text box that is used to enter a user-defined value to trigger the exception.
Action field	Displays a drop-down list that is used to select one of the following configurations: • Sequence number • Pre analytics wait time
Action value	Displays a text box that is used to enter a user-defined value for the action.
Add / Remove	Displays icons that are used to remove existing exceptions and add new exceptions.

Function buttons

Cancel Seq.	Cancels the changes made in the Seq. column.
Save Seq.	Saves the changes made in the Seq. column.
Remove configuration	Removes the selected configuration. NOTE: This function button is available only when a test is selected.

Cancel Cancels the changes.

NOTE: This function button is available only when a test is selected.

Save Saves the changes.

NOTE: This function button is available only when a test is selected.

Related information...

- [Tests screen \(TWM\)](#), page 238

Configure a test (TWM)

User access level Administrator

Perform this procedure to configure a test on the Track Workflow Manager (TWM).

1. On the Main menu screen (TWM), tap **Workflow**.
2. On the Workflow screen, tap **Tests**.
3. Select a test to open the test definition area.
4. Depending on the test type, enter the relevant information:
 - a) To configure an analytical or sort test, define and select the relevant values in the **Preconditions**, **Post actions**, and **Exceptions** tabs.
 - b) To configure a buffer test, define the buffer wait time.
 - c) To configure an error test, select an option from the **Ignore and interrupt wait times** drop-down list.
5. To save the test configuration, tap **Save**.

Related information...

- [Tests screen \(TWM\)](#), page 238

Areas screen (TWM)

On the Areas screen, the administrator can access the configuration of areas.

Related information...

- [Workflow screen \(TWM\)](#), page 231
- [Areas screen element descriptions \(TWM\)](#), page 241
- [Area details screen element descriptions \(TWM\)](#), page 242
- [Copy area configuration screen element descriptions \(TWM\)](#), page 243
- [Assign a test to an area \(TWM\)](#), page 243

Areas screen element descriptions (TWM)

The Areas screen displays an overview of the configuration of areas.

Elements

Filter Displays a text box that is used to enter the expression to filter areas.

Areas table area

Seq. Displays a text box that can be used to configure the sequence for the area. The Track Workflow Manager prioritizes higher sequence numbers.

Name Displays the area name.

Instrument Displays the instrument.

Instrument type Identifies the instrument type.

On track Displays a check box that identifies whether the area is present on the system.

Config Displays a check box that identifies whether the area is configured.

Tests Displays the number of tests configured for the area.

Type of analysis Identifies the type of analysis.

Duplicate Displays an icon that navigates to the Copy area configuration screen.

Edit Displays an icon that navigates to the Area details screen.

Remove config. button Removes the configuration for the selected area.

Function buttons

Cancel seq. This function button is unavailable on this screen.

Save seq. This function button is unavailable on this screen.

Related information...

- [Areas screen \(TWM\)](#), page 241

Area details screen element descriptions (TWM)

On the Area details screen, the administrator can configure an area. The Area details screen can be accessed from the Areas screen by tapping a row or an **Edit** icon. Depending on the instrument associated with the selected area, the available configuration options may vary. Contact an Abbott Laboratories representative or an authorized service representative for more information.

Areas area

Name	Displays the area name.
Instrument	Displays the instrument.
Instrument type	Identifies the instrument type.

Function buttons

Remove configuration	This function button is unavailable on this screen.
Cancel	Cancels the changes.
Save	Saves the changes.

Related information...

- [Areas screen \(TWM\)](#), page 241

Copy area configuration screen element descriptions (TWM)

On the Copy area configuration screen, the administrator can duplicate an area configuration.

Elements

From	Displays the name of the area whose configuration is to be copied.
To	Displays a drop-down list that is used to select the area to which to apply the configuration.

Function buttons

Cancel	Cancels the selections.
Copy	Applies the selections.

Related information...

- [Areas screen \(TWM\)](#), page 241

Assign a test to an area (TWM)

User access level	Administrator
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Perform this procedure to assign a test an area on the Track Workflow Manager (TWM).

NOTE: No more than 3000 tests can be assigned to an area. If this limit is exceeded, the area configuration cannot be saved and a prompt to reduce the number of assigned tests is displayed.

NOTE: Buffer tests are automatically assigned to a buffer area.

1. On the Main menu screen (TWM), tap **Workflow**.
2. On the Workflow screen, tap **Areas**.
3. Select an area to open the Areas area.
4. Open the **Test selection** tab.
5. Select tests by fluid types and use the **Left Arrow** and **Right Arrow** buttons to transfer the selected tests from **Instrument tests** to **Area tests**.
6. To save the test selection, tap **Save**.

Related information...

- [Areas screen \(TWM\)](#), page 241

Batch screen (TWM)

On the Batch screen, the administrator can access the configuration of batch processes.

Related information...

- [Workflow screen \(TWM\)](#), page 231
- [Batch screen element descriptions \(TWM\)](#), page 244

Batch screen element descriptions (TWM)

The Batch screen displays an overview of the configuration of batch processes.

Elements

Filter Displays a text box that is used to enter the expression to filter batches.

Batch processing table area

Name	Displays the batch name.
Tests	Displays the number of tests for the batch processes.
Status	Displays the current running status of the batch process: Gray The batch process is not running. Green The batch process is running.
Add / Remove	Displays icons that are used to remove existing batch processes and add new batch processes.



Batch details area

NOTE: This area is available only when an existing batch is selected or a new batch is being added.

Name	Displays a text box that is used to enter the batch name.
Centrifuge before waiting	Displays a check box that is used to determine whether to centrifuge samples prior to routing to the Waiting storage selection when the batch process is not running.
Waiting storage	Displays a drop-down list that is used to select an output or archive area to which tubes will be routed when the batch process is not running. Samples in output areas must be reloaded manually in the correct input area of the Input/Output Module when the batch process starts.
Expired storage	Displays a drop-down list that is used to select an output area to which tubes will be routed when the tube maximum storage time is exceeded.

All tests and Batch tests table areas

All tests lists all tests that are assigned to an instrument configured for batch download. **Batch tests** are the tests configured for the selected batch process.

Use the **Left Arrow** and **Right Arrow** buttons to transfer selected tests between **All tests** and **Batch tests**.

NOTE: These areas are available only when an existing batch is selected or a new batch is being added.

Code	Displays the name of the test and a check box next to the column header, which selects all tests in the list. Displays a check box for each test row. This check box is used to deselect or select multiple tests at one time.
Fluid type	Displays the fluid type.
Function buttons	
Cancel	Cancels the changes.
Save	Saves the changes.

Related information...

- [Batch screen \(TWM\)](#), page 244

Error output areas screen (TWM)

On the Error output areas screen, the administrator can view the configuration of error output areas.

Related information...

- [Workflow screen \(TWM\)](#), page 231
- [Error output areas screen element descriptions \(TWM\)](#), page 246

Error output areas screen element descriptions (TWM)

The Error output areas screen displays an overview of the configuration of error output areas.

Error output areas table area

Error codes	Identifies the error scenarios for which an error output area is configured as All other errors , Test not available , or as individual message code numbers with short descriptions.
Error output area	Displays the output areas to which sample tubes are routed when the error scenarios are encountered.
Add / Remove	The buttons in this column are unavailable on this screen.

Function buttons

Cancel	This function button is unavailable on this screen.
Save	This function button is unavailable on this screen.

Related information...

- [Error output areas screen \(TWM\)](#), page 246

Master data screen (TWM)

On the Master data screen of the Track Workflow Manager (TWM), the administrator can access the following information:

- Fluid types
- Tube types
- Types of analysis
- Tests
- Instruments
- Aliquots
- Centrifugation



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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...

- [Main menu screen \(TWM\)](#), page 202
- [Fluid types screen \(TWM\)](#), page 247
- [Tube types screen \(TWM\)](#), page 248
- [Types of analysis screen \(TWM\)](#), page 248
- [Tests screen \(TWM\)](#), page 249
- [Instruments screen \(TWM\)](#), page 251
- [Aliquots screen \(TWM\)](#), page 254
- [Centrifugation screen \(TWM\)](#), page 257

Fluid types screen (TWM)

On the Fluid types screen, the administrator can view the fluid types.

Related information...

- [Master data screen \(TWM\)](#), page 246
- [Fluid types screen element descriptions \(TWM\)](#), page 247

Fluid types screen element descriptions (TWM)

The Fluid types screen displays an overview of fluid types.

Fluid types table area

Code	Displays the code of the fluid type.
Description	Displays a short description of the fluid type.
Add / Remove	The buttons in this column are unavailable on this screen.

Function buttons

Cancel	This function button is unavailable on this screen.
Save	This function button is unavailable on this screen.

Related information...

- [Fluid types screen \(TWM\)](#), page 247

Tube types screen (TWM)

On the Tube types screen, the administrator can view information about tube types.

Related information...

- [Master data screen \(TWM\)](#), page 246
- [Tube types screen element descriptions \(TWM\)](#), page 248

Tube types screen element descriptions (TWM)

The Tube types screen displays an overview of tube types.

Tube types area

Tube type identifier	Displays a unique identifier of the tube type based on the vendor, dimensions, form, and color.
Vendor	Identifies the vendor of the tube type.
Dimensions	Displays the dimensions of the tube type.
Size	Identifies whether the tube type is Large or Small .
Cap type	Identifies whether the cap type is Push or Screw .
Cap status	Identifies whether the tube type is Capped or Open .
Fluid type	Displays a drop-down list that is used to select existing fluid types or Unknown Fluid Type .
Cut-off weight (g/10)	Displays a text box that is used to enter the minimum allowed weight of the tube in decigrams.
Add / Remove	Displays icons that are used to remove existing tube types and add new tube types.

Function buttons

Cancel	This function button is unavailable on this screen.
Save	This function button is unavailable on this screen.

Related information...

- [Tube types screen \(TWM\)](#), page 248

Types of analysis screen (TWM)

On the Types of analysis screen, the administrator can view information about analysis types.

Related information...

- [Master data screen \(TWM\)](#), page 246

- [Types of analysis screen element descriptions \(TWM\)](#), page 249

Types of analysis screen element descriptions (TWM)

The Types of analysis screen displays an overview of analysis types.

Types of analysis table area

Type	Displays the name of the analysis.
Description	Displays a short description of the analysis type.
Add / Remove	The buttons in this column are unavailable on this screen.

Function buttons

Cancel	This function button is unavailable on this screen.
Save	This function button is unavailable on this screen.

Related information...

- [Types of analysis screen \(TWM\)](#), page 248

Tests screen (TWM)

On the Tests screen, the administrator can access information about tests.

Related information...

- [Master data screen \(TWM\)](#), page 246
- [Tests screen element descriptions \(TWM\)](#), page 249
- [Create a new test \(TWM\)](#), page 250

Tests screen element descriptions (TWM)

The Tests screen displays an overview of test parameters.

Elements

Filter	Displays a text box that is used to enter the expression to filter tests.
Import button	Enables the selection of an Excel file to import test codes. NOTE: Contact an Abbott Laboratories representative or an authorized service representative for more information.

Tests table area

Code	Displays the name of the test.
Description	Displays a short description of the test.
Test type	Identifies the test as Analytical / sort test , Buffer test , or Error test .
Add / Remove	Displays icons that are used to remove existing tests and add new tests.

Tests details area

NOTE: This area is available only after an existing test is selected or a new test is being added.

Code	Displays a text box that is used to enter or edit the name of the test.
Description	Displays a text box that is used to enter or edit the short description of the test.
Analytical / sort test option	Allows the administrator to view or configure whether the test is for routing samples to analyzers and output areas.
Buffer test option	Allows the administrator to view or configure whether the test is for routing samples to a Buffer Module.
Error test option	Allows the administrator to view or configure whether the test is for routing samples to error output areas.
Types of analysis	Displays a drop-down list that is used to select the type of analysis.
Fluid types	Displays a drop-down list that is used to select the associated fluid type.
Add / Remove	Displays icons that are used to remove existing associated fluid types and add new associated fluid types.

Function buttons

Cancel	Cancels the changes.
Save	Saves the changes.

Related information...

- [Tests screen \(TWM\)](#), page 249

Create a new test (TWM)

User access level	Administrator
--------------------------	---------------

Perform this procedure to create a new test on the Track Workflow Manager (TWM).

NOTE: The total number of test codes must not exceed 10,000.

1. On the Main menu screen (TWM), tap **Master data**.
2. On the Master data screen, tap **Tests**.
3. In the **Add / Remove** column of the **Tests** table area, tap the **Plus** button.
4. In the details of the new test, enter the **Code** and **Description** of the new test
5. Select the test type.
6. Select the **Type of analysis**.

NOTE: This parameter is optional.

7. If the new test is of the type **Analytical / sort test**, select the fluid types.
8. To save the new test, tap **Save**.

Related information...

- [Tests screen \(TWM\)](#), page 249

Instruments screen (TWM)

On the Instruments screen, the administrator can view and edit information about instruments.

Related information...

- [Master data screen \(TWM\)](#), page 246
- [Instruments screen element descriptions \(TWM\)](#), page 251
- [Instrument details screen element descriptions \(TWM\)](#), page 252
- [Assign a test to an instrument \(TWM\)](#), page 254

Instruments screen element descriptions (TWM)

The Instruments screen displays an overview of instruments.

Elements

Filter

Displays a text box that is used to enter the expression to filter instruments.

Instruments table area

Name

Displays the instrument name.

Type

Identifies the instrument type from the following list:

- **Aliquoter**
- **Archive**
- **Buffer**

- **Centrifuge**
- **DTS Analyzer**
- **Decapper**
- **Input**
- **Output**
- **RBM Analyzer**
- **Recapper**
- **Remover**
- **ScrewCapper**

On track	Displays a check box that identifies whether the instrument is on the system.
Batch download	Displays a check box that identifies whether the instrument works in download mode with the middleware.
Areas	Displays the number of areas to which the instrument is assigned.
Type of analysis	Identifies the analysis types.
Tests	Displays the number of tests assigned to the instrument.
Duplicate	This function button is unavailable on this screen.
Edit	Displays an icon that is used to navigate to the Instrument details screen.
Add / Remove	The buttons in this column are unavailable on this screen.

Related information...

- [Instruments screen \(TWM\)](#), page 251

Instrument details screen element descriptions (TWM)

The Instrument details screen displays additional information for a selected instrument.

Instrument definition area

Name	Displays the instrument name.
Type	Identifies the instrument type.
On track	Displays a check box that identifies whether the instrument is on the system.
Usable in instrument groups	Displays a check box that identifies whether the instrument is part of an instrument group.



Batch download	Displays a check box that identifies whether the instrument works in download mode with the middleware.
-----------------------	---

Areas table area

Areas	Displays the areas to which the instrument is assigned.
Move	This function button is unavailable on this screen.
Add / Remove	The buttons in this column are unavailable on this screen.

Test setup area

Elements

Filter	Displays a text box that is used to enter the expression to filter tests.
---------------	---

All tests and Instruments tests areas

All tests lists all analytical or sort tests and **Instruments tests** are the tests assigned to the instrument. Use the **Left Arrow** and **Right Arrow** buttons to transfer selected tests between **All tests** and **Instrument tests**.

Code	Displays the short name of the test and a check box next to the column header, which selects all tests in the list. Displays a check box for each test row. This check box is used to deselect or select multiple tests at one time.
Description	Identifies the test.
Type of analysis	Identifies the analysis type.
Fluid type	Identifies the fluid type.

Function buttons

Cancel	Cancels the changes.
Save	Saves the changes.

Related information...

- [Instruments screen \(TWM\)](#), page 251

Assign a test to an instrument (TWM)

User access level Administrator

Perform this procedure to assign a test to an instrument on the Track Workflow Manager (TWM).

NOTE: No more than 3000 tests can be assigned to an instrument. If this limit is exceeded, the instrument configuration cannot be saved and a prompt to reduce the number of assigned tests is displayed.

NOTE: Buffer tests are automatically assigned to a Buffer Module.

1. On the Main menu screen (TWM), tap **Master data**.
2. On the Master data screen, tap **Instruments**.
3. Select an instrument of the type **DTS Analyzer**, **Output**, or **Buffer** to navigate to the Instrument details screen.
4. In the **Test setup** area, select tests by fluid types and use the **Left Arrow** and **Right Arrow** buttons to transfer the selected tests from **All tests** to **Instrument tests**.
5. To save the test selection, tap **Save**.

Related information...

- [Instruments screen \(TWM\)](#), page 251

Aliquots screen (TWM)

On the Aliquots screen, the administrator can view information about aliquot templates.

Related information...

- [Master data screen \(TWM\)](#), page 246
- [Aliquots screen element descriptions \(TWM\)](#), page 254
- [Test custom sample ID screen element descriptions \(TWM\)](#), page 256

Aliquots screen element descriptions (TWM)

The Aliquots screen displays an overview of the aliquot templates.

Aliquot templates table area

Name	Displays the aliquot template name.
Add / Remove	The buttons in this column are unavailable on this screen.

Aliquot template details area

NOTE: This area is viewable only after an aliquot template is selected.

Template name	Displays the aliquot template name.
Label layout	Identifies the label layout of the aliquot template.
Aliquot sample ID	Identifies the bar code type to be used for the secondary sample tube, Use parent sample ID or Use custom sample ID . If Use custom sample ID is selected, the following additional information is displayed.
Action	Displays one of the following actions for modifying the parent sample ID for the secondary sample bar code: • Add prefix • Add suffix • Insert characters • Replace characters • Delete characters
Position	Displays the number of characters on which the action is performed.
Value	Displays the value for the action.
Add / Remove	The buttons in this column are unavailable on this screen.
Text 1	Displays text to be passed to the Aliquot Module for printing on the secondary sample tube label.
Text 2	Displays text to be passed to the Aliquot Module for printing on the secondary sample tube label.
Text 3	Displays text to be passed to the Aliquot Module for printing on the secondary sample tube label.
Text 4	Displays text to be passed to the Aliquot Module for printing on the secondary sample tube label.
Text 5	Displays text to be passed to the Aliquot Module for printing on the secondary sample tube label.
Text 6	Displays text to be passed to the Aliquot Module for printing on the secondary sample tube label.
Function buttons	
Insert text variables	This function button is unavailable on this screen.

NOTE: This function button is viewable only after an aliquot template is selected.

Test custom sample ID Navigates to the Test custom sample ID screen.

NOTE: This function button is available only if the selected aliquot template is configured to use custom sample ID as the bar code type.

Cancel This function button is unavailable on this screen.

NOTE: This function button is viewable only after an aliquot template is selected.

Save This function button is unavailable on this screen.

NOTE: This function button is viewable only after an aliquot template is selected.

Related information...

- [Aliquots screen \(TWM\)](#), page 254

Test custom sample ID screen element descriptions (TWM)

On the Test custom sample ID screen, the administrator can provide an example parent bar code value and aliquot number value to demonstrate the configured aliquot sample ID actions and values. The Test custom sample ID screen can be accessed from the Aliquots screen by tapping the **Test custom sample ID** button only if the selected aliquot template is configured to use custom sample ID as the bar code type.

Elements

Parent sample ID Displays the example parent sample ID to demonstrate the custom sample ID.

Aliquot number Displays the example aliquot number to demonstrate the custom sample ID.

Demonstration area

Action Displays the configured aliquot sample ID action.

Position Displays the configured aliquot sample ID position.

Value Displays the configured aliquot sample ID value.

Result Displays the custom sample ID.



Function buttons

Start	Demonstrate the custom sample ID.
Close	Closes the Test custom sample ID screen.

Related information...

- [Aliquots screen \(TWM\)](#), page 254

Centrifugation screen (TWM)

On the Centrifugation screen, the administrator can view information about centrifugation profiles.

Related information...

- [Master data screen \(TWM\)](#), page 246
- [Centrifugation screen element descriptions \(TWM\)](#), page 257

Centrifugation screen element descriptions (TWM)

The Centrifugation screen displays an overview of centrifugation profiles.

Centrifugation profiles table area

Profile name	Displays the name of the centrifugation profile.
Description	Provides a short description of the centrifugation profile.
Track default	Displays a check box that identifies the default centrifugation profile.
Add / Remove	The buttons in this column are unavailable on this screen.

Function buttons

Cancel	This function button is unavailable on this screen.
Save	This function button is unavailable on this screen.

Related information...

- [Centrifugation screen \(TWM\)](#), page 257

Admin screen (TWM)

On the Admin screen of the Track Workflow Manager, the administrator can view the following information:

- User, timer, and parameter settings
- Log export

- User changes

Related information...

- [Main menu screen \(TWM\)](#), page 202
- [User screen \(TWM\)](#), page 258
- [Timer screen \(TWM\)](#), page 258
- [Parameter screen \(TWM\)](#), page 259
- [Transfer screen \(TWM\)](#), page 260
- [User changes screen \(TWM\)](#), page 261

User screen (TWM)

On the User screen, the administrator can view information about users.

Related information...

- [Admin screen \(TWM\)](#), page 257
- [User screen element descriptions \(TWM\)](#), page 258

User screen element descriptions (TWM)

The User screen displays information about users.

User details area

NOTE: This area is available only after a user is selected.

Last name	Displays the name of the user.
First name	Displays the first name of the user.
Email	Displays the email address of the user.
Phone	Displays the phone number of the user.
Username	Displays the configured username.
Role	Identifies the access level for the user as Operator or Administrator .

Related information...

- [User screen \(TWM\)](#), page 258

Timer screen (TWM)

On the Timer screen, the administrator can view information about routing and database cleanup.

Related information...

- [Admin screen \(TWM\)](#), page 257
- [Timer screen element descriptions \(TWM\)](#), page 259



Timer screen element descriptions (TWM)

The Timer screen displays configuration information for timer schedules of Track Workflow Manager (TWM) operations.

This information is editable only by the service user access level.

Service tab

Name	Displays the name of the TWM process.
Active	Displays a check box that identifies whether the process is set to run.
Day	Displays the defined time or frequency of the process in days.
Hour	Displays the defined time or frequency of the process in hours.
Minute	Displays the defined time or frequency of the process in minutes.
Second	Displays the defined time or frequency of the process in seconds.

Function buttons

Cancel	This function button is unavailable on this screen.
Save	This function button is unavailable on this screen.

Related information...

- [Timer screen \(TWM\)](#), page 258

Parameter screen (TWM)

On the Parameter screen, the administrator can view and configure the parameters of the system.

Related information...

- [Admin screen \(TWM\)](#), page 257
- [Parameter screen element descriptions \(TWM\)](#), page 259

Parameter screen element descriptions (TWM)

The Parameter screen displays an overview of parameters.

Administrators can configure parameters for **Operation mode** and **Working hours**. The **Service** tab is viewable but not editable.

Admin tab

Description	Displays the name of the parameter.
--------------------	-------------------------------------

Value	Displays the configurable value of the parameter.
Unit	Displays the unit of the parameter, if applicable.

Function buttons

Cancel	Cancels the changes.
Save	Saves the changes.

Related information...

- [Parameter screen \(TWM\)](#), page 259

Transfer screen (TWM)

On the Transfer screen, the administrator can export log files.

Related information...

- [Admin screen \(TWM\)](#), page 257
- [Transfer screen element descriptions \(TWM\)](#), page 260

Transfer screen element descriptions (TWM)

The Transfer screen displays the installed translation and configuration files.

Log files area

Start date	Displays a box that is used to select a search start date. To select the search start date, tap the calendar inside the box. To configure the month and year, tap the Left Arrow or Right Arrow button, and then tap the day.
End date	Displays a box that is used to select a search end date. To select the search end date, tap the calendar inside the box. To configure the month and year, tap the Left Arrow or Right Arrow button, and then tap the day.
Database	Displays a check box that is used to request a database dump.
Download button	Downloads the zipped log files.

NOTE: Downloading a file can result in a browser notification that the download is blocked. Select to keep the download in the browser download manager to retrieve it.

Translation area

File	Displays the file name of the translated Track Workflow Manager user interface and messages.
Date	Displays the date that the translation file was installed.
User	Displays the user who installed the translation file.
Download button	This function button is unavailable on this screen.
Install button	This function button is unavailable on this screen.

Configuration area

Workflow	This check box is unavailable on this screen.
Master data	This check box is unavailable on this screen.
Admin	This check box is unavailable on this screen.
File	Displays the configuration file name.
Date	Displays the date that the configuration file was installed.
User	Displays the user who installed the configuration file.
Download button	This function button is unavailable on this screen.
Install button	This function button is unavailable on this screen.

Related information...

- [Transfer screen \(TWM\)](#), page 260

User changes screen (TWM)

On the User changes screen, the administrator can view information about the previous actions performed by all users of the Track Workflow Manager.

Related information...

- [Admin screen \(TWM\)](#), page 257
- [User changes screen element descriptions \(TWM\)](#), page 261

User changes screen element descriptions (TWM)

The User changes screen displays a summary table of the previous actions performed by all users of the Track Workflow Manager.

Change history area

Start date	Displays a box that is used to select a search start date. To select the search start date, tap the calendar inside the box. To configure the month and year, tap the Left Arrow or Right Arrow button, and then tap the day.
End date	Displays a box that is used to select a search end date. To select the search end date, tap the calendar inside the box. To configure the month and year, tap the Left Arrow or Right Arrow button, and then tap the day.
 button	The Previous Week button modifies the start and end dates to the week prior to the selected values.
 button	The Next Week button modifies the start and end dates to the week after the selected values.
Filter	Displays a text box that is used to enter the expression to filter the change history.

User changes table area

Change date	Identifies the date of the change.
Change user	Identifies the user who made the change.
Menu	Displays the tab or location of user activity.
Value	Displays the associated value of the parameter.
Sub ID	Identifies the parameter that changed within a specific area of the screen.
Sub value	Displays the associated value of the parameter.
Field	Identifies the field in which the change was made.
Old value	Displays the original content prior to the change.
New value	Displays the changed content.

Related information...

- [User changes screen \(TWM\)](#), page 261



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 123
- [Power on the module](#), page 263
- [Power off the module](#), page 264
- [Cycle power to the module](#), page 265
- [Place the module online](#), page 266
- [Place the module offline](#), page 267
- [Pause the module](#), page 267
- [Deactivate pause mode](#), page 268
- [Open and close the front and rear module covers](#), page 268
- [Load samples into FlexRacks](#), page 271
- [Unload samples from FlexRacks](#), page 273
- [Load analyzer-specific racks](#), page 274
- [Unload analyzer-specific racks](#), page 277
- [Shut down the module by using the rear module switch](#), page 280

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 and hold 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 263
- [Main menu screen \(IOM\)](#), page 88
- [Start the GLP systems Track](#), page 124
- [Replace the robot gripper fingers](#), page 323

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 and hold 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 263
- [Shut down the GLP systems Track](#), page 125

Cycle power to the module

Prerequisite

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

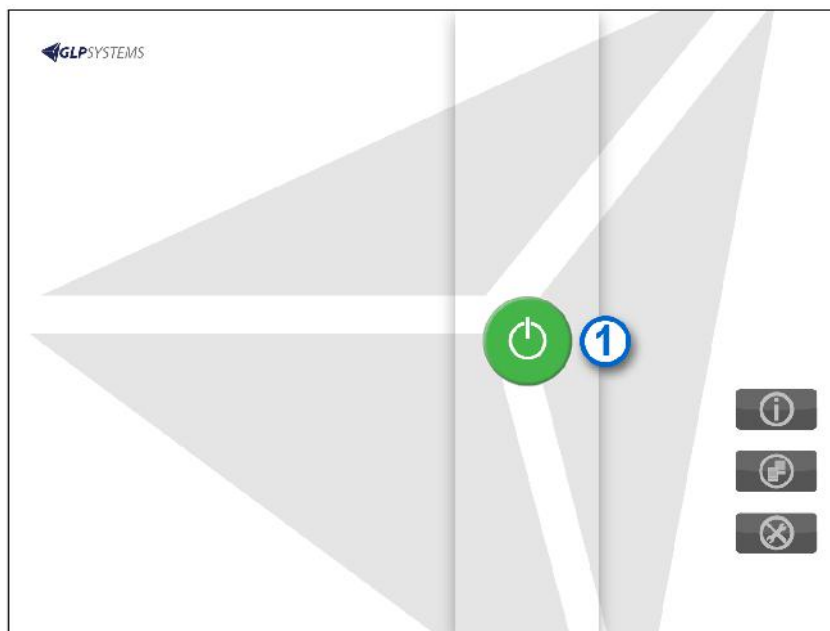
Perform this procedure to cycle power to the module to reestablish communication among the system components or to troubleshoot the module.

1. To power off the module, press and hold 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 and hold 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 35: 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.

NOTE: Drawers configured for manual rack identification will remain open after initialization. To close the drawers, complete the manual rack identification workflow.

Related information...

- [Input/Output Module procedures](#), page 263
- [Delete an area](#), page 96

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 263
- [Delete an area](#), page 96
- [Create an area type](#), page 93
- [Configure a new area](#), page 94
- [Edit properties of an area](#), page 95
- [Open and close the front and rear module covers](#), page 268

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.



CAUTION: Moving parts. The operator may be injured by moving parts inside the module even after placing the module offline. Be aware of moving parts. Do not reach into the paths of moving parts.

1. Press and hold 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 263
- [Delete an area](#), page 96

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 stops. 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 263

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 263

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 inspection of the covers is necessary during maintenance to ensure proper operation.

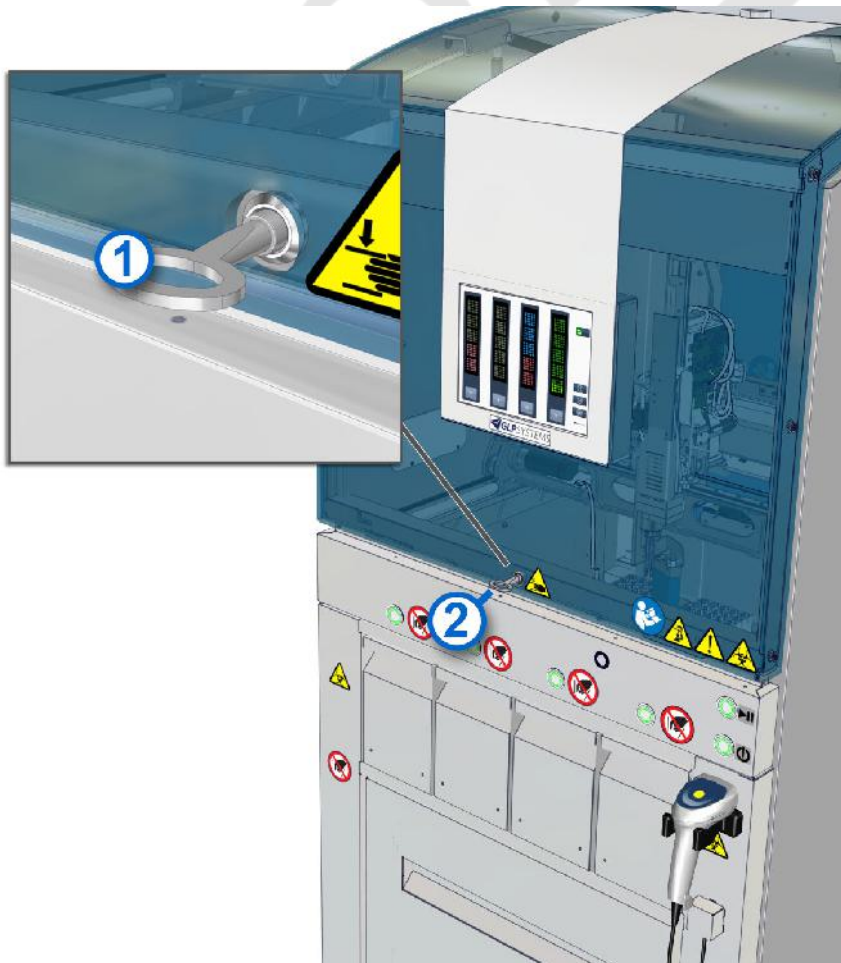


CAUTION: Mind or watch your hands. The front and rear module covers can be opened and closed **only** by a trained operator. Finger pinches can occur between two adjacent modules if module covers are closed by holding their sides. Use caution when opening and closing the front and rear module covers.

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

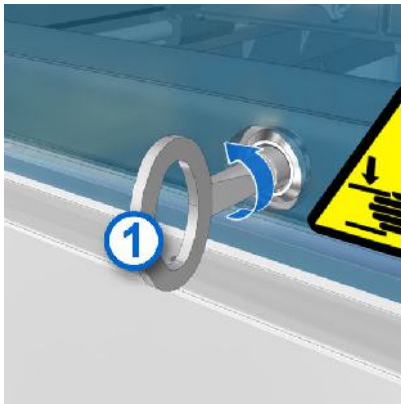
NOTE: Images of the rear module cover and the module flap are not shown.

Figure 36: Front module cover lock



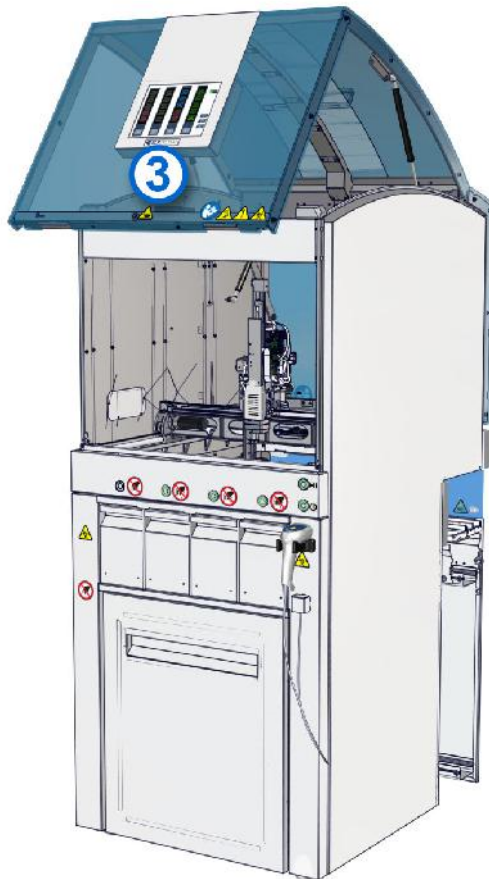
2. While turning the key [1] counterclockwise a quarter turn, begin lifting the front module cover [3] or rear module cover.

Figure 37: Key



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

Figure 38: 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 263
- [Place the module online](#), page 266
- [Track overview](#), page 39
- [Clean the monitor](#), page 318
- [Clean the module covers](#), page 318
- [Clean the robot gripper](#), page 319
- [Clean the AccessPoint](#), page 322
- [Clean the sample barcode reader](#), page 322
- [Replace the robot gripper fingers](#), page 323

Load samples into FlexRacks

Prerequisite Become familiar with technical data for sample tubes and sample barcode 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.



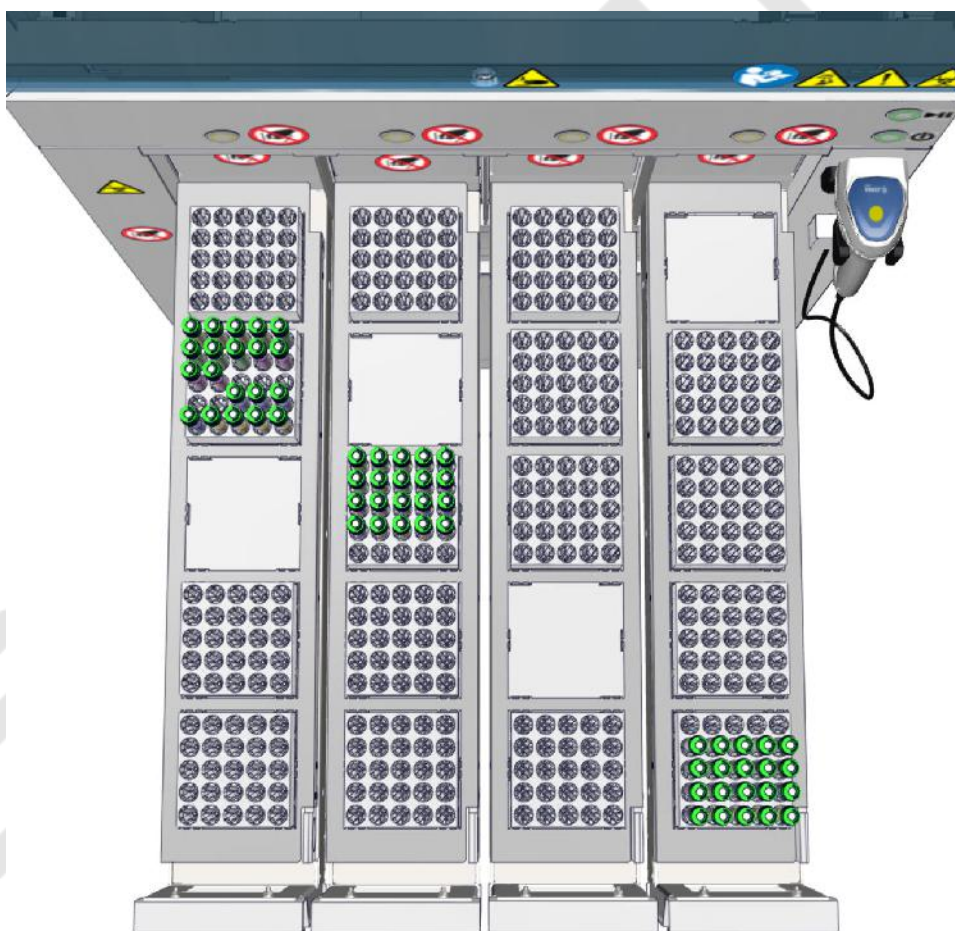
CAUTION: Risk of cross contamination. The placement of 16 mm x 100 mm sample tubes next to each other in FlexRacks can cause robot gripper errors. These errors can cause cross contamination of sample matter, resulting in delayed or incorrect results. For any affected samples, the results should be assessed 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 39: Sample tubes in FlexRacks in the drawers



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

Related information...

- [Input/Output Module procedures](#), page 263
- [Sample tube technical data](#), page 116
- [Sample and rack barcode label technical data](#), page 113
- [Replace a FlexRack](#), page 325

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 drawer** 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 drawer** button on the touchscreen user interface.

Related information...

- [Input/Output Module procedures](#), page 263
- [Replace a FlexRack](#), page 325

Load analyzer-specific racks

Prerequisite	Become familiar with technical data for sample tubes and sample barcode 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 drawer** button  on the touchscreen user interface.



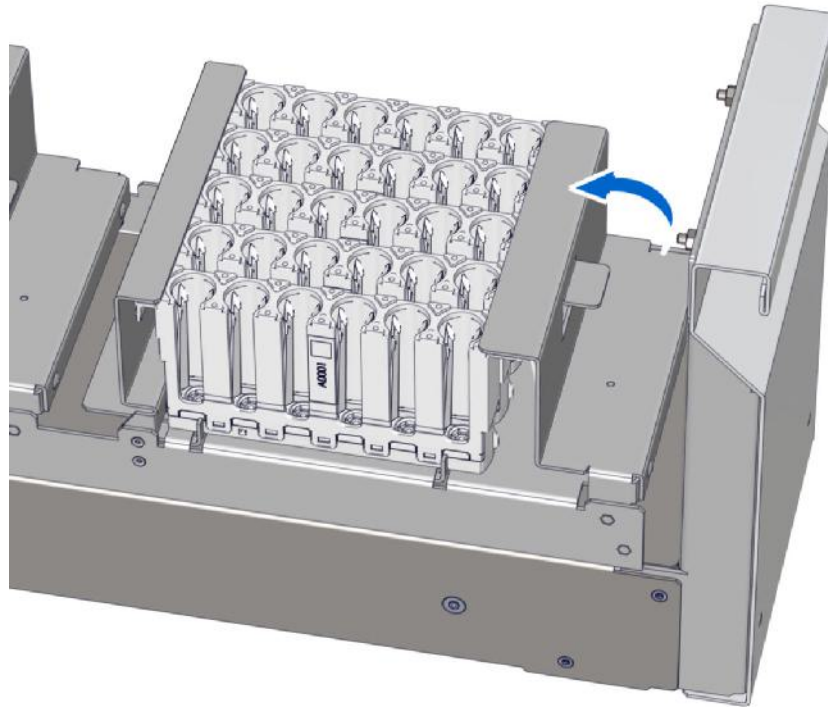
CAUTION: A minimum clearance between the module and the operator is required to avoid injury when opening the drawer.

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 40: Locking empty analyzer-specific racks

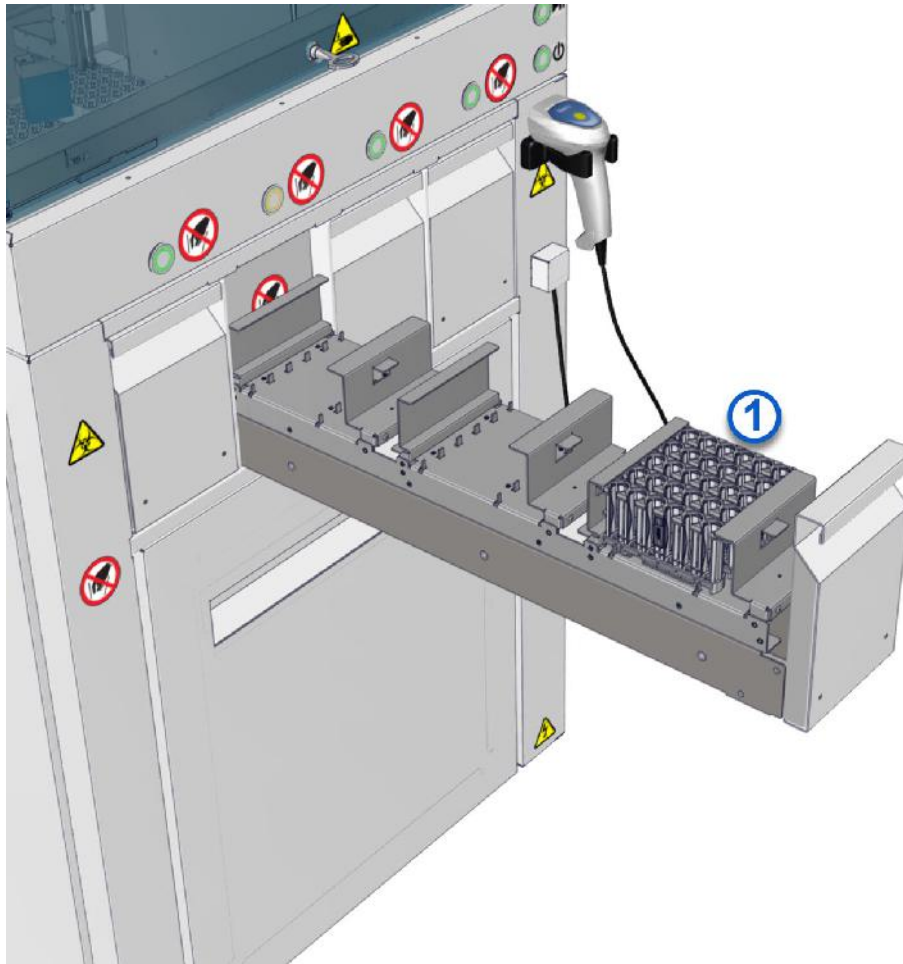


4. If loading an input rack, ensure that sample tubes are loaded from right to left. Loading the samples tubes from the opposite direction creates a risk of samples not being detected.

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, ensure that all sample tubes are removed from all positions and perform one of the following steps:
 - Load empty analyzer-specific racks into all output positions in the RackPort.
 - Leave all rack positions empty.

Figure 41: 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 drawer** button on the touchscreen user interface.

Related information...

- [Input/Output Module procedures](#), page 263
- [Sample tube technical data](#), page 116
- [Sample and rack barcode label technical data](#), page 113

Unload analyzer-specific racks

Prerequisite Become familiar with technical data for sample tubes and sample barcode 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 drawer** button  on the touchscreen user interface.

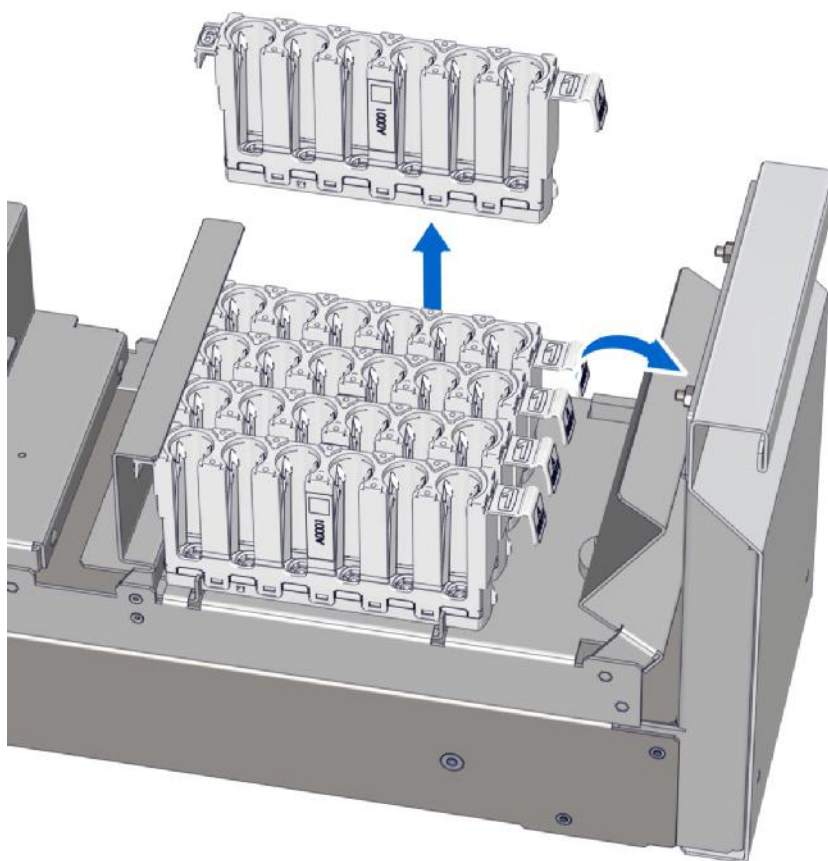


CAUTION: A minimum clearance between the module and the operator is required to avoid injury when opening the drawer.

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.

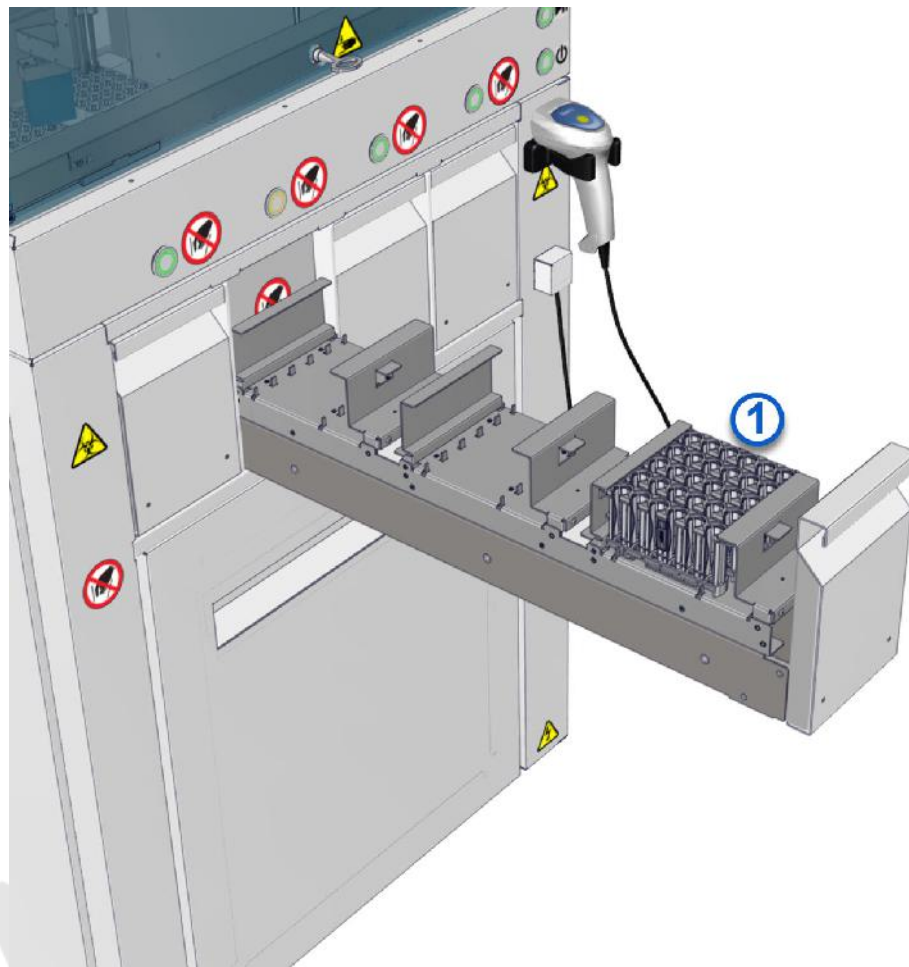
2. Unlock the analyzer-specific rack in the RackPort.

Figure 42: 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 43: 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 drawer** button on the touchscreen user interface.

Related information...

- [Input/Output Module procedures](#), page 263
- [Sample tube technical data](#), page 116
- [Sample and rack barcode label technical data](#), page 113

Shut down the module by using the rear module switch

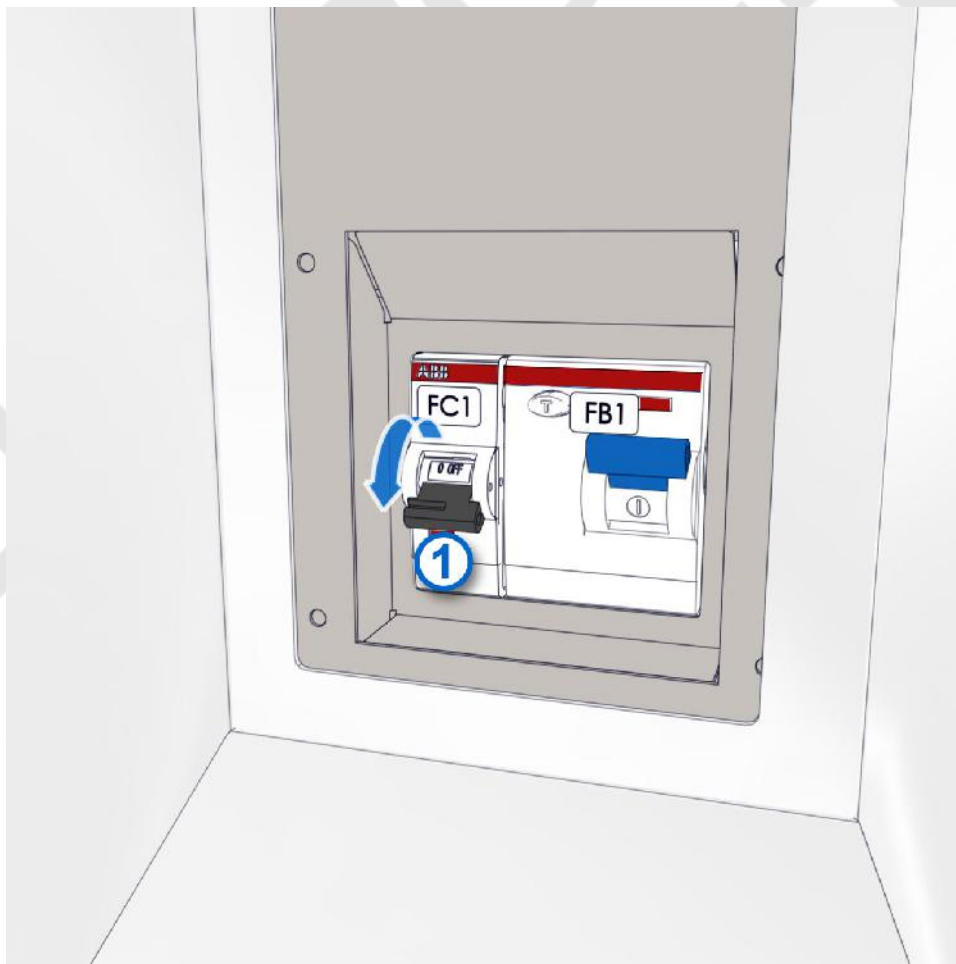
Perform this procedure to power off the module by using the rear module switch.



CAUTION: Possibility of electric shock. Activities or areas on the module may expose the operator to electrical shock if procedural controls or engineering controls are not observed.

1. Locate the rear module switches in the track side casing cutout on the rear of the module.
2. Move the leftmost switch [1] to the Off position to turn off the power.

Figure 44: Rear module switches



Related information...

- [Input/Output Module procedures](#), page 263

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6. CALIBRATION PROCEDURES

Introduction

The GLP systems Track does not require calibration.

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7. OPERATIONAL PRECAUTIONS AND LIMITATIONS

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 286
- [Requirements for handling the specimens](#), page 287
- [General safety information](#), page 10

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

NOTE: Some modules have additional components. For more information, refer to the appropriate manual.

Related information...

- [Operational precautions and limitations](#), page 285
- [Input/Output Module design and function](#), page 51
- [Control systems](#), page 59

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 285

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8. HAZARDS

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 290
- [Safety icons](#), page 291
- [Biological hazards](#), page 293
- [Physical hazards](#), page 295
- [Basic safety](#), page 296
- [CAR safety](#), page 299
- [Laser safety](#), page 300
- [Spill cleanup](#), page 301
- [Requirements for decontamination](#), page 302
- [Input/Output Module safety](#), page 303
- [General safety information](#), page 10

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.

Only spare parts and consumables approved by the manufacturer must be used. Any other use shall be deemed improper use. The manufacturer accepts no liability for improper use.

Related information...

- [Hazards](#), page 289

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 each type of potential hazard.

Table 22: 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 the risk of 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: Latex This product contains dry natural rubber.
	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.

Continued on next page...

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Icon	Description
	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.
	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.

Related information...

- [Hazards](#), page 289

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 289
- [Precautions](#), page 293
- [Sensitizers](#), page 294

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 293

Sensitizers

Some products contain low levels of ingredients that are reported to be sensitizers. Sensitizers can stimulate allergic reactions in some people. The allergic reactions may occur with the first exposure or only after repeated exposures. Dry natural rubber (latex) is present in certain components of this product and may cause reactions in people who are sensitive.

Related information...

- [Biological hazards](#), page 293

Physical hazards

Use safe practices to avoid injury when any exposure to potential physical hazards occurs.

Related information...

- [Hazards](#), page 289
- [Tripping hazards](#), page 295

Tripping hazards

The GLP systems Track is equipped with power cords and several computer cables. To avoid a tripping hazard, ensure that the cords and cables in high-traffic areas are routed safely.

Related information...

- [Physical hazards](#), page 295

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.
- Frequently observe the functionality of the opening mechanism. Regular inspection of the covers is necessary during maintenance to ensure proper operation.

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, go to corelaboratory.abbott.com registration-ous (select Resources > Other Reference Documents > China RoHS Hazardous Substance Tables).

Related information...

- [Hazards](#), page 289
- [Sample tube technical data](#), page 116
- [Spill cleanup](#), page 301

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 289
- [CAR disposal](#), page 316

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.

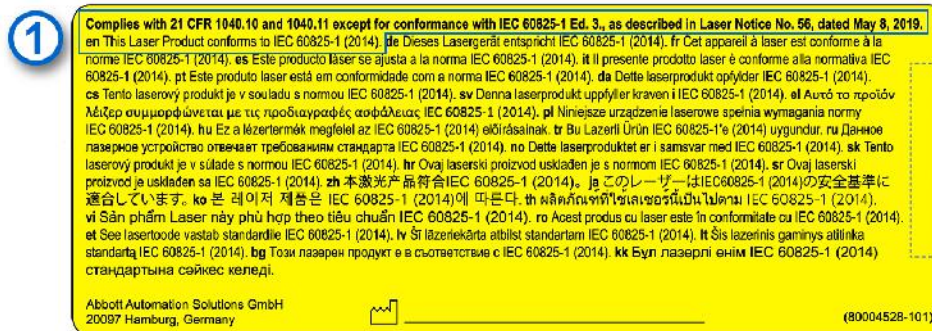
Some modules contain embedded Class 2 laser barcode readers. Refer to the supplemental and interface manuals for module-specific information about Class 2 lasers.

Although momentary exposure to a Class 2 laser (1 mW maximum power, 650 nm wavelength with a pulse duration of 91 µs) 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 barcode reader is not serviceable and should be replaced **only** by an Abbott Laboratories service representative or an authorized service representative.

Figure 45: Manufacturer laser certification label for the Input/Output Module (IOM)



Legend:

1. Manufacturer laser certification label: Located near the ratings label on the IOM. This label contains the following text:

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 289

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 289
- [Basic safety](#), page 296

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 289

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.
- Frequently observe the functionality of the opening mechanism. Regular inspection of the covers is necessary during maintenance to ensure proper operation.



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 289
- [Sample tube technical data](#), page 116

9. SERVICE, MAINTENANCE, AND DIAGNOSTICS

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 must be used.

Related information...

- [Maintenance](#), page 306

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. The laboratory has a responsibility to develop and manage LAS maintenance checklists that meet laboratory needs and requirements.



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 305
- [Component replacement](#), page 306
- [Track maintenance](#), page 307
- [CAR maintenance](#), page 309
- [Input/Output Module maintenance](#), page 316

Component replacement

Some system components may need to be replaced because of normal wear from daily system operation.

The laboratory has a responsibility to maintain an adequate supply of replacement parts. To order replacement parts, contact an Abbott Laboratories representative or an authorized service representative.

When replacing components, comply with the following general safety precautions:

- Dispose of replaced components and materials that are used during component replacement (for example, lint-free cloths) according to local, state, and national regulations.
- If drips or leaks occur, clean up the liquid and decontaminate according to local, state, and national regulations.

Related information...

- [Maintenance](#), page 306

Track maintenance

A daily visual inspection of the track is recommended. Sample matter found on the track may indicate mechanical malfunctions.

Maintenance 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.

The following checks are required on the track to maintain optimal system performance.

Table 23: Track maintenance checks

Check	Activity	Interval
Inspect the cross switch controllers for dust.	Perform Clean the lane elements (page 308) 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 132) 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 423).	Daily
Inspect the lane elements for dust.	Perform Clean the lane elements (page 308) or Clean the guiding slot (page 309) if necessary.	Weekly

Related information...

- [Maintenance](#), page 306
- [Weekly maintenance procedure](#), page 307
- [As-needed maintenance procedures](#), page 308

Weekly maintenance procedure

A weekly maintenance procedure is required on the track.

Related information...

- [Track maintenance](#), page 307
- [Clean the track hoods](#), page 308

Clean the track hoods

Prerequisite Ensure the track hoods are closed and locked.

Required materials

- Antistatic plastic cleaner
- Lint-free cloth

Perform this weekly procedure to clean the track hoods.

1. Dampen a lint-free cloth with an antistatic plastic cleaner.
2. Wipe the entire surface area of the track hoods.
3. Let the track hoods air-dry to allow an antistatic film to form.

Related information...

- [Weekly maintenance procedure](#), page 307
- [Open and close the track hoods](#), page 132

As-needed maintenance procedures

As-needed maintenance procedures are required on the track.

Related information...

- [Track maintenance](#), page 307
- [Clean the lane elements](#), page 308
- [Clean the guiding slot](#), page 309

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 maintenance procedures](#), page 308
- [Open and close the track hoods](#), page 132

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 maintenance procedures](#), page 308
- [Open and close the track hoods](#), page 132

CAR maintenance

A daily visual inspection of the CARs is recommended.

Maintenance 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.

The following checks are required on the CARs to maintain optimal system performance.

Table 24: CAR maintenance checks

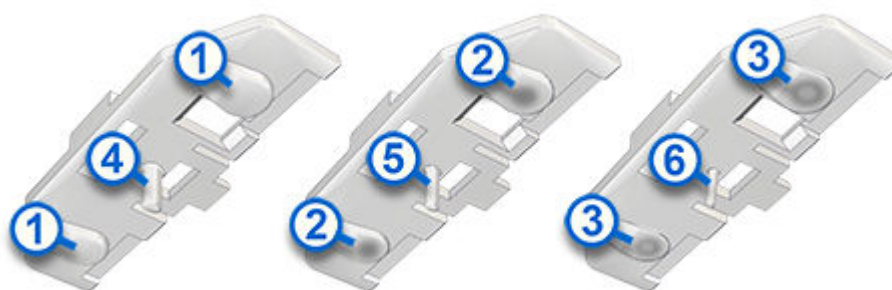
Check	Activity	Interval
Verify that there are no observed problems.	Resolve any observed problems as needed. See CAR observed problems (page 425).	Daily
Verify that the guiding pin and front underseal are not worn.	Perform Replace the front underseal of a CAR (page 315) if necessary.	Weekly
Verify that the sliders are not worn.	Perform Replace the front underseal of a CAR (page 315) if necessary.	Weekly
Inspect the drive wheel for dust.	Perform Clean the drive wheel and the wheel arch (page 313) if necessary.	Weekly
Inspect the drive wheel for malfunctions.	Contact an Abbott Laboratories representative or an authorized service representative if necessary.	Weekly

Continued on next page...

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Check	Activity	Interval
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 46: Slider wear on the front underseal of the CAR



Legend:

1. Slider is intact.
2. Slider is still in working condition.
3. Slider is worn and permanent magnet is visible.
4. Guiding pin is intact.
5. Guiding pin is still in working condition.
6. Guiding pin is worn.

Related information...

- [Maintenance](#), page 306
- [Weekly maintenance procedure](#), page 310
- [Monthly maintenance procedure](#), page 311
- [Quarterly maintenance procedure](#), page 312
- [As-needed maintenance procedures](#), page 312
- [CAR design and function](#), page 44

Weekly maintenance procedure

A weekly maintenance procedure is required on the CARs.

Related information...

- [CAR maintenance](#), page 309
- [Clean the sensors](#), page 311

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 maintenance procedure](#), page 310
- [Open and close the track hoods](#), page 132

Monthly maintenance procedure

A monthly maintenance procedure is required on the CARs.

Related information...

- [CAR maintenance](#), page 309
- [Clean the housing](#), page 311

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 maintenance procedure](#), page 311
- [Open and close the track hoods](#), page 132

Quarterly maintenance procedure

A quarterly maintenance procedure is required on the CARs.

Related information...

- [CAR maintenance](#), page 309
- [Clean the charging contacts](#), page 312

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.
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 maintenance procedure](#), page 312
- [Open and close the track hoods](#), page 132

As-needed maintenance procedures

As-needed maintenance procedures are required on the CARs.

Related information...

- [CAR maintenance](#), page 309
- [Clean the sample holder](#), page 312
- [Clean the drive wheel and the wheel arch](#), page 313
- [CAR replacement](#), page 313
- [CAR disposal](#), page 316

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 maintenance procedures](#), page 312
- [CAR design and function](#), page 44
- [Open and close the track hoods](#), page 132

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 maintenance procedures](#), page 312
- [CAR design and function](#), page 44
- [Open and close the track hoods](#), page 132

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 312
- [Remove a CAR without a sample](#), page 314
- [Remove a CAR with a sample](#), page 314

- [Replace the front underseal of a CAR](#), page 315

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 313
- [Open and close the track hoods](#), page 132

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 313
- [Open and close the track hoods](#), page 132
- [Remove a sample \(TSM\)](#), page 172

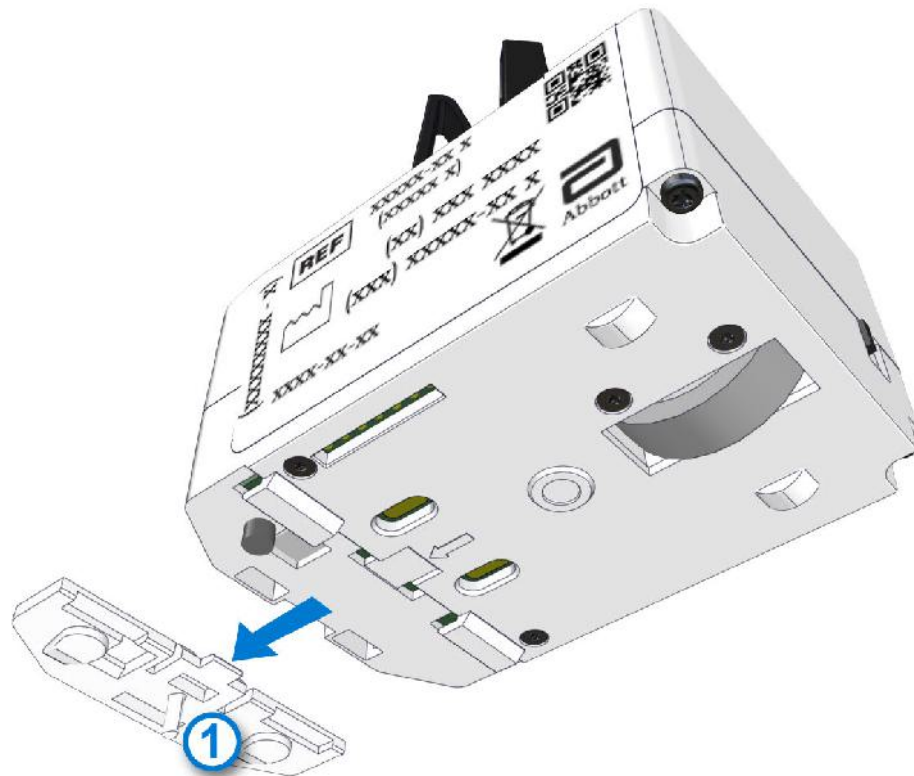
Replace the front underseal of a CAR

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 47: 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 313
- [Open and close the track hoods](#), page 132

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 312
- [CAR safety](#), page 299

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.



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 inspection of the covers is necessary during maintenance to ensure proper operation.

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.

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

Table 25: Input/Output Module maintenance checks

Check	Activity	Interval
Inspect the module for dust.	Carefully remove any dust as needed. If necessary, perform the following procedures: • Clean the monitor (page 318) • Clean the sample barcode reader (page 322) • Clean the handheld barcode reader (page 323) • Clean the AccessPoint (page 322) • Clean the robot gripper (page 319) • Clean the RackPorts (page 319) • Clean the drawers (page 321)	Daily
Verify that there are no observed problems.	Resolve any observed problems as needed. See Input/Output Module observed problems (page 433) and Track Sample Manager observed problems (page 430).	Daily
Inspect the AccessPoints for contamination.	Perform Clean the AccessPoint (page 322) if necessary.	Daily
Verify that the robot gripper fingers are not worn, damaged, or dirty.	Perform Clean the robot gripper (page 319) or Replace the robot gripper fingers (page 323) if necessary.	Daily
Verify that the FlexRacks are clean and undamaged.	Perform Clean the FlexRacks (page 320) or Replace a FlexRack (page 325) 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 268) to close the module covers if necessary.	Daily
Verify that the module covers remain in position when opened.	Contact an Abbott Laboratories representative or an authorized service representative if necessary.	Daily

Related information...

- [Maintenance](#), page 306
- [Weekly maintenance procedures](#), page 317
- [As-needed maintenance procedures](#), page 318

Weekly maintenance procedures

Weekly maintenance procedures are required on the Input/Output Module.

Related information...

- [Input/Output Module maintenance](#), page 316
- [Clean the monitor](#), page 318
- [Clean the module covers](#), page 318

Clean the monitor

Prerequisite Ensure the module covers are closed and locked.

Required materials

- Laboratory-grade surface disinfectant
- Lint-free cloth

Required module status Off

Perform this weekly procedure to clean the monitor.

1. Dampen a lint-free cloth with a surface disinfectant.
2. Carefully wipe the entire surface area of the monitor to remove any dust.
3. Wait until the monitor is dry to power on the module.

Related information...

- [Weekly maintenance procedures](#), page 317
- [Open and close the front and rear module covers](#), page 268

Clean the module covers

Prerequisite Ensure the module covers are closed and locked.

Required materials

- Antistatic plastic cleaner
- Lint-free cloth

Required module status Offline

Perform this weekly procedure to clean the module covers.

1. Dampen a lint-free cloth with an antistatic plastic cleaner.
2. Wipe the entire surface area of the module cover.
3. Let the module cover air-dry to allow an antistatic film to form.

Related information...

- [Weekly maintenance procedures](#), page 317
- [Open and close the front and rear module covers](#), page 268

As-needed maintenance procedures

As-needed maintenance procedures are required on the Input/Output Module.

Related information...

- [Input/Output Module maintenance](#), page 316
- [Clean the robot gripper](#), page 319
- [Clean the RackPorts](#), page 319
- [Clean the FlexRacks](#), page 320
- [Clean the drawers](#), page 321
- [Clean the AccessPoint](#), page 322
- [Clean the sample barcode reader](#), page 322
- [Clean the handheld barcode reader](#), page 323
- [Replace the robot gripper fingers](#), page 323
- [Replace a FlexRack](#), page 325

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 maintenance procedures](#), page 318
- [Open and close the front and rear module covers](#), page 268

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 drawer** 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 drawer** button on the touchscreen user interface.
11. Repeat steps 1 (page 319) through 10 (page 320) for each drawer.

Related information...

- [As-needed maintenance procedures](#), page 318

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 drawer** 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 drawer** button on the touchscreen user interface.
9. Repeat steps 1 (page 320) through 8 (page 321) for each drawer.

Related information...

- [As-needed maintenance procedures](#), page 318

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 drawer** 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 drawer** button on the touchscreen user interface.
10. Repeat steps 1 (page 321) through 9 (page 321) for each drawer.

Related information...

- [As-needed maintenance procedures](#), page 318

Clean the AccessPoint

Required materials

- Laboratory-grade surface disinfectant
- Lint-free cloth

Required module status

Offline

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

1. Open the module cover.
2. Dampen a lint-free cloth with a surface disinfectant.
3. Carefully wipe the AccessPoint to remove any dust.
4. Repeat steps 2 (page 322) and 3 (page 322) if the module has more than one AccessPoint.
5. Close the module cover.

Related information...

- [As-needed maintenance procedures](#), page 318
- [Open and close the front and rear module covers](#), page 268

Clean the sample barcode reader

Required materials

- Gentle, antistatic glass cleaner
- Lint-free cloth

Required module status

Offline

Perform this as-needed procedure to clean the sample barcode reader at the lower end of the robot.

1. Open the module cover.
2. Dampen a lint-free cloth with a gentle, antistatic glass cleaner.
3. Carefully wipe the sample barcode reader to remove any dust.
4. Ensure that the orientation of the sample barcode reader is not changed so that no errors occur when barcodes are read.
5. Close the module cover.

Related information...

- [As-needed maintenance procedures](#), page 318

- [Open and close the front and rear module covers](#), page 268

Clean the handheld barcode reader

Required materials

- One of the following approved cleaners:
 - 70% isopropyl alcohol
 - 0.5% sodium hypochlorite solution
 - 3% hydrogen peroxide solution
- Lint-free cloth
- Lens tissue
- Soft, nonabrasive cloth

Required module status

Offline

Perform this as-needed procedure to clean the handheld barcode reader.

1. Dampen a lint-free cloth with one of the approved cleaners.
2. Wipe the entire surface area of the handheld barcode reader except the scan window.

IMPORTANT: Do not apply liquid directly to the handheld barcode reader and ensure that liquid does not pool around any areas.

3. Dampen a lens tissue with one of the approved cleaners.
4. Carefully wipe the surface area of the scan window.

IMPORTANT: Do not spray liquid directly on the scan window.

5. Dry the scan window immediately with a soft, non-abrasive cloth to prevent streaking.
6. Let the handheld barcode reader air-dry before use.

Related information...

- [As-needed maintenance procedures](#), page 318

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 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 48: 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 318
- [Open and close the front and rear module covers](#), page 268
- [Power on the module](#), page 263

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 drawer** button  on the touchscreen user interface.

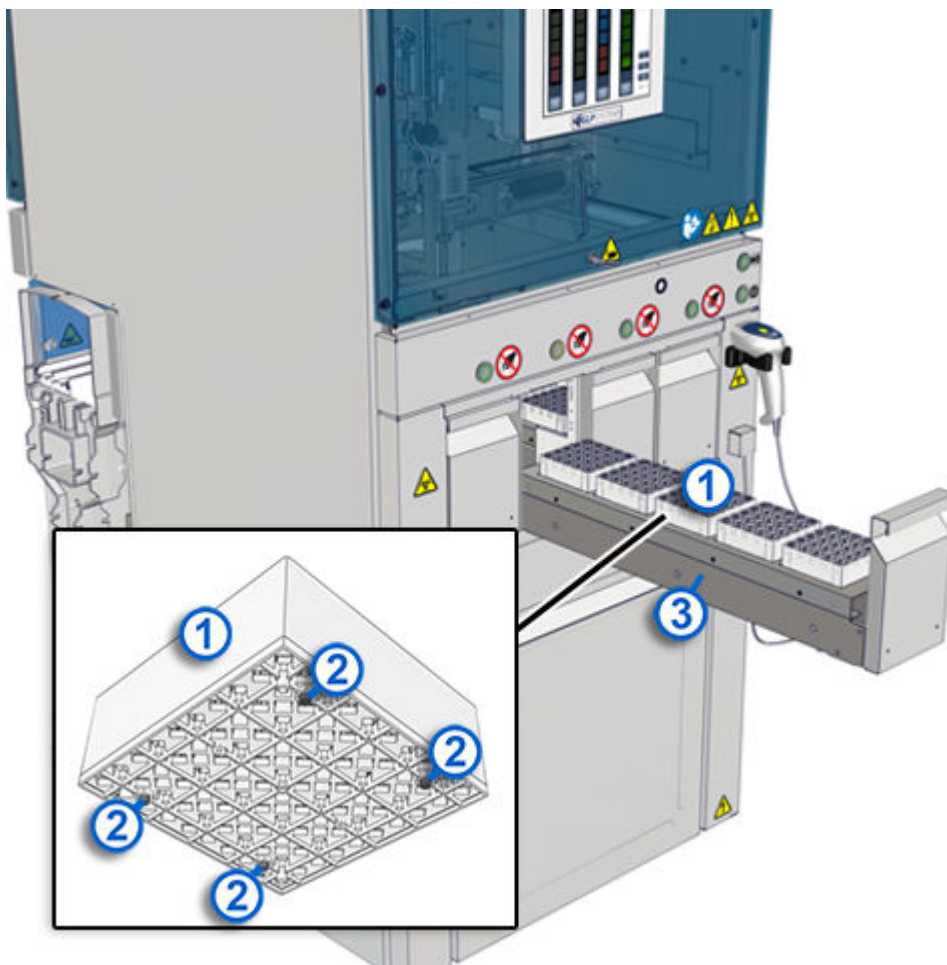


CAUTION: A minimum clearance between the module and the operator is required to avoid injury when opening the drawer.

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 49: 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 drawer** button on the touchscreen user interface.

Related information...

- [As-needed maintenance procedures](#), page 318
- [Load samples into FlexRacks](#), page 271
- [Unload samples from FlexRacks](#), page 273

10. TROUBLESHOOTING

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.

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



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...

- [Message codes](#), page 328
- [Observed problems](#), page 423
- [Start the GLP systems Track](#), page 124

Message codes

Message codes are displayed on the Track Sample Manager, Track Workflow Manager, and Input/Output Module user interfaces when errors occur. The TSM software itself does not generate error codes.

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.

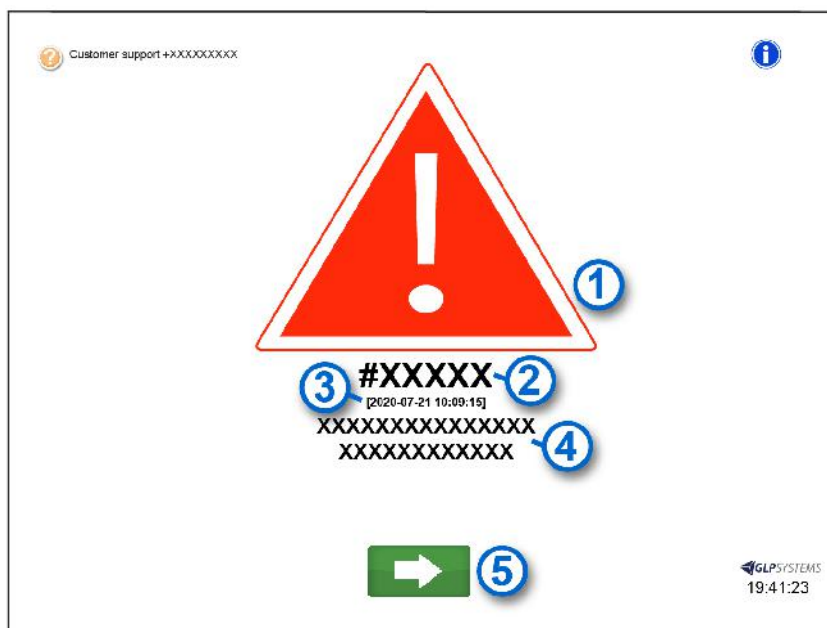
Related information...

- [Troubleshooting](#), page 327
- [Message code screen \(IOM\)](#), page 328
- [Message codes \(0-9999\)](#), page 329
- [Message codes \(10000-19999\)](#), page 332
- [Message codes \(20000-29999\)](#), page 333
- [Message codes \(30000-39999\)](#), page 357
- [Message codes \(70000-79999\)](#), page 358
- [Message codes \(80000-89999\)](#), page 389

Message code screen (IOM)

The Message code screen (IOM) displays the following screen elements.

Figure 50: 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 328
- [Acknowledge a message code](#), page 329

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 328

Message codes (0-9999)

This section includes message codes from 0 through 9999.

Related information...

- [Message codes](#), page 328

Message code: 100

System error.

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

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.

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.

Message code: 107

Unknown message type received.

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

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.

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.

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.

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.

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.

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.

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.

Message codes (10000-19999)

This section includes message codes from 10000 through 19999.

Related information...

- [Message codes](#), page 328

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.

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.

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.

Message codes (20000-29999)

This section includes message codes from 20000 through 29999.

Related information...

- [Message codes](#), page 328

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.

Message code: 20200

AccessPoint connection problem.

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

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.

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.

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.

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.

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.

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.

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.

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.

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.

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

Message code: 20900

Area configuration error.

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

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.

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.

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.

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.

Message code: 20906

Invalid grip position specified.

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

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.

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.

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.

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.

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.

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.

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.

Message code: 21005

Robot hardware error.

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

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.

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.

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. - Confirm remaining sample(s) at position has been removed.

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.

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.

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.

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.

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.

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.

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.

Message code: 21022

No cap found. Please check gripper for contamination.

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

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.

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.

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.

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.

Message code: 21060

Barcode reading error.

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

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.

Message code: 23001

No dialog options found.

Details	Solutions
Could not find dialog options for dialog (1). 1 = Dialog ID number	Please select one of the offered solutions below. Error cannot be repaired. Stop module and call service.

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.

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.

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.

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.

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.

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.

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.

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.

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. - Disable the component.

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.

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.

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.

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.

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.

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.

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.

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.

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.

Message code: 25106

Light barrier dark value too high.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. • Disable the component.

Message code: 25107

Light barrier bright value too low.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. • Disable the component.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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: - Locate the sample IDs of the samples that are present at the local queue of the specified AccessPoint. - 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. 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: - Cancel the current orders on the host laboratory information system for the specified sample ID. 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. - Follow the recovery steps on the module touchscreen user interface to release the sample to an error output area. - Dispose of the sample in accordance with local, state, and national regulations.

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.

Message code: 28132

Incompatible grip heights

Sample (1) / (0) could not be taken from CAR due to invalid grip height.

0 = Sample barcode

1 = TSM sample number

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

Message code: 28133

Incompatible sample properties.

Sample (1)/(0) cannot be processed at "(2)" due to incompatible sample properties.

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.

Message codes (30000-39999)

This section includes message codes from 30000 through 39999.

Related information...

- [Message codes](#), page 328
- [Track Sample Manager observed problems](#), page 430

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.

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.

Message codes (70000-79999)

This section includes message codes from 70000 through 79999.

Related information...

- [Message codes](#), page 328

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.

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.

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.

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.

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.

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.

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.

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.

Message code: 70008

Controller connected

Controller "(0)" connected.

0 = Controller name

Probable cause	Corrective action
An error has occurred.	Informational message.

Message code: 70009

Routing Engine connected

Routing Engine connected.

Probable cause	Corrective action
An error has occurred.	Informational message.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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. 2. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

Message code: 70127

Generic properties invalid.

Generic properties of controller (0) are missing or invalid: (1)

0 = Module controller

1 = Module generic property

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

Message code: 71000

Tests passed

All checks for uploaded track passed successfully.

Probable cause	Corrective action
An error has occurred.	Informational message.

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.

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.

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.

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.

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.

Message code: 71006

Module removed

Module "(0)" removed.

0 = Controller name

Probable cause	Corrective action
An error has occurred.	Informational message.

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.

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.

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.

Message code: 71010

Segment controller removed

Segment "(0)" removed.

0 = Controller ID

Probable cause	Corrective action
An error has occurred.	Informational message.

Message code: 71011

Unknown product codes

Product codes not supported: (0).

0 = Product code

Probable cause	Corrective action
An error has occurred.	Informational message.

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.

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.

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.

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.

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.

Message code: 71017

Module changed

Product code change for module "(0)".

0 = Controller name

Probable cause	Corrective action
An error has occurred.	Informational message.

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.

Message code: 71019

Value for field is too large

The number of characters for field '(0)' is too large. Current number: (1), Maximum numbers allowed: (2)

0 = Field

1 = Current field length

2 = Maximum field length

Probable cause	Corrective action
An error has occurred.	Informational message.

Message code: 71020

Temperature unit mismatch for archive.

Temperature unit mismatch for archive '(0)' on initialization.

0 = Controller name

Probable cause	Corrective action
An error has occurred.	Informational message.

Message codes (80000-89999)

This section includes message codes from 80000 through 89999.

Related information...

- [Message codes](#), page 328

Message code: 80000

Generic 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.

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.

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.

Message code: 80003

Consumable supply error

Analysis ended with warning: Consumable 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.

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.

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.

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 necessary, rerun the test not completed by the analyzer on the middleware. 3. If the error is not resolved, contact an Abbott Laboratories representative or an authorized service representative.

Message code: 80007

Already registered

Analysis ended with warning: Order 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.

Message code: 81004

Centrifugation not possible

Sample (0) with (barcode "(1)") cannot be centrifuged. 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.

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.

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.

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.

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. 2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.

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.

Message code: 81011

Unknown target areas

TSM received the following unknown areas for sample (1) with barcode "(2)" from the RE: (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.

Message code: 81012

Invalid sample number

TSM received a message from the RE 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.

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.

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.

Message code: 81015

Route update not possible

The status of sample (1) with barcode "(2)" does not allow the route update number (0); TSM ignored the route update number from the RE.

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.

Message code: 81016

No route message

The RE 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.

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.

Message code: 81018

Decapping not possible

Sample (0) with barcode "(1)" cannot be decapped.

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.

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.

Message code: 81020

Aliquoting not possible

Parent sample (0) with barcode "(1)" cannot be aliquoted because the preconditions were not met (cap status, 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.

Message code: 81021

Tube type recognition failed

Module "(0)" failed to recognize the tube type of 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.

Message code: 81022

Sample position 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.

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.

Message code: 81024

Recapping not possible

Sample (0) with barcode "(1)" cannot be recapped.

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.

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.

Message code: 81026

Cap removal not possible

Cap of sample (0) with (barcode "(1)") cannot be removed.

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.

Message code: 81027

Overlapping "processingGroup"

Target plan update failed. Reason: Update would cause a partial abortion of processing group "(0)". First step of target plan update belongs to processing group "(1)".

0 = Processing group

1 = Processing group

Probable cause	Corrective action
An error has occurred.	An informational message was sent to the Track Workflow Manager.

Message code: 81028

Discipline error

Failed to assign discipline (0) to 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.

Message code: 81029

Analysis with suspect 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.

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.

Message code: 81031

Failure creating the aliquot label

Aliquoter "(0)" reported labeling error for aliquot barcode "(1)" number (2) and parent sample (3) barcode "(4)".

0 = Aliquot module

1 = Aliquot barcode

2 = Aliquot number

3 = TSM sample ID

4 = 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.

Message code: 81032

Failure creating the aliquot

Aliquoter "(0)" reported creation error for aliquot barcode "(1)" number (2) and parent sample (3) barcode "(4)".

0 = Aliquot module

1 = Aliquot bar code

2 = Aliquot number

3 = TSM sample number

4 = 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.

Message code: 81033

Failure creating the aliquot, unsupported tube type

Aliquoter "(0)" reported unsupported tube type (1) for parent sample (2) barcode "(3)".

0 = Aliquot module

1 = Tube type

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.

Message code: 81034

Failure to aliquot parent sample

Aliquoter "(0)" reported error for parent sample (1) barcode "(2)".

0 = Aliquot module

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.

Message code: 81035

Possible sample mix-up.

Possible sample mix-up detected: Module "(1)" reported barcode "(0)" for sample number (2), expected barcode is "(3)" for sample number (0).

- 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.

Message code: 81036

Invalid targets due discipline.

The sample discipline (0) does not allow to target any area in route.

- 0 = Discipline

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

Message code: 82002

Insufficient information from HOST

RE 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.

Message code: 82003

Duplicate sample

RE 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.

Message code: 82004

Unknown tube type

RE 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.

Message code: 82005

RE: Cannot create next route step

RE 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.

Message code: 82006

Wrong material or tube type

RE 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.

Message code: 82007

QC handling error

The Track Workflow Manager was unable to identify the barcode "(1)" of sample (0) for quality control purposes.

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.

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.

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.

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.

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.

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.

Message code: 83003

LIS message, test is a batch test

Batch tests cannot be enabled on instrument (1): (0).

0 = Test codes

1 = Instrument

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

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

Message code: 83126

Precondition of tube type

Precondition of tube type (1) in area (0).

0 = Area name

1 = Tube type

Probable cause	Corrective action
A route has been generated.	Track Workflow Manager informational message. No corrective action is required.

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.

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.

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.

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.

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.

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.

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.

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.

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.

Message code: 83138

All open tests are batch tests

All open tests are batch tests: (0)

0 = Test codes

Probable cause	Corrective action
An informational message is displayed.	Contact an Abbott Laboratories representative or an authorized service representative.

Message code: 83139

Restoring sample from waiting storage

Restoring sample before expiration of waiting storage: (0)

0 = Sample ID

Probable cause	Corrective action
An informational message is displayed.	Track Workflow Manager informational message. No corrective action is required.

Message code: 83140

Some tests have not been downloaded

Some tests with fluid type '{0}' have not been downloaded to instruments configured as 'Batch Download': (1)

0 = Fluid type

1 = Test codes

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

Message code: 83141

Aliquot creation failed

The aliquot creation failed. The processing of the parent sample (0) at workflow area (1) with aliquot group (2) would have lead to a duplicate aliquot barcode (3). Conflicting parent sample (4).

0 = Sample ID

1 = Area name

2 = Aliquot group name

3 = Sample ID

4 = Sample ID

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

Message code: 83142

Tube type not allowed in areas

Tube type conflict. Best sample route: "(0)", Sample value: (1), Conflict(area/value): (2)

0 = Sample route

1 = Tube type

2 = Area name / tube type

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

Message code: 83143

All next tests disabled - Wait expired

All next tests are disabled and buffer wait time has expired.

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.

Message code: 83144

All next tests disabled - Centrifuge

All next tests are disabled and need same centrifugation. Sending to (0). Tests: (1)

0 = Area name

1 = Test codes

Probable cause	Corrective action
An informational message is displayed.	- 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.

Message code: 83145

All next tests disabled - Buffer

All next tests are disabled. Sending to buffer. Tests: (0)

0 = Test codes

Probable cause	Corrective action
An informational message is displayed.	- 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.

Message code: 83146

Tests with highest seq. disabled - Wait expired

All next tests with highest sequence number are disabled and buffer wait time has expired.

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.

Message code: 83147

Tests with highest seq. disabled - Buffer

All next tests with highest sequence number are disabled. Sending to buffer. Tests: (0)

0 = Test codes

Probable cause	Corrective action
An informational message is displayed.	- 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.

Message code: 83148

Cap status mismatch

Cap status conflict. Best sample route: "(0)", Sample value: (1), Conflict (area/test/value): (2)

0 = Sample route

1 = Cap status

2 = Area name / test codes / cap status

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

Message code: 83149

Post area add-on wait time

Post area add-on wait time configured for area / test: "(0)"

0 = Test codes

Probable cause	Corrective action
An informational message is displayed.	Track Workflow Manager informational message. No corrective action is required.

Message code: 83150

Post order add-on wait time

Post order add-on wait time configured for fluid type: "(0)"

0 = Fluid type

Probable cause	Corrective action
An informational message is displayed.	Track Workflow Manager informational message. No corrective action is required.

Message code: 83151

Instrument qualifier conflict

Same is set for instrument (0), different is required because of sample warning (1) for ordered test codes: (2)

0 = Controller name

1 = TSM sample warning number

2 = Test codes

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

Message code: 83152

Instrument qualifier conflict

Same is set for instrument (0), different is required because of tests not downloaded: (1)

0 = Controller name

1 = Test codes

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

Message code: 83153

Too many tests assigned to sample

Maximum number of ordered tests for one sample ID exceeded: (0)

0 = Maximum number of tests allowed per sample

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

Message code: 83154

All next tests disabled - Aliquoter

All next tests are disabled. Wait expired. Sending to aliquoter for mandatory aliquotation.

Probable cause	Corrective action
An informational message is displayed.	- 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.

Message code: 83155

All next tests disabled - Impossible aliquotation

All next tests are disabled. Wait expired. Mandatory aliquotation not possible. Sending to error output.

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.

Message code: 83156

All next tests disabled - Long wait storage

All next tests are disabled. Wait expired. Sending to long wait final action.

Probable cause	Corrective action
An informational message is displayed.	- 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.

Message code: 83157

Outside working hours - Centrifuge

Outside working hours centrifugation, Sending to (0).

0 = Area name

Probable cause	Corrective action
An informational message is displayed.	Track Workflow Manager informational message. No corrective action is required.

Message code: 83158

Outside working hours - Long wait storage

Outside working hours. Sending to long wait final action.

Probable cause	Corrective action
An informational message is displayed.	Track Workflow Manager informational message. No corrective action is required.

Message code: 83159

Tests w. highest seq. disabled-Long wait storage

All next tests with highest sequence number are disabled. Wait expired. Sending to long wait final action.

Probable cause	Corrective action
An informational message is displayed.	• 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.

Message code: 83160

Marked as removed

Marked as removed by user (0)

0 = User

Probable cause	Corrective action
An informational message is displayed.	Track Workflow Manager informational message. No corrective action is required.

Message code: 83161

Barcode applies to multiple aliquots

Aliquot barcode (0) applies to multiple aliquots of parent barcode (1)

0 = Aliquot sample ID

1 = Parent sample ID

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

Message code: 83162

Aliquot tubes mismatch

Aliquot tubes mismatch for parent barcode (0). Conflicts area / aliquot group: (1)

0 = Parent sample ID

1 = Area or aliquot group

Probable cause	Corrective action
An informational message is displayed.	Track Workflow Manager informational message. No corrective action is required.

Message code: 83163

Aliquot templates mismatch

Aliquot templates mismatch for parent barcode (0). Conflicts area / aliquot group: (1)

0 = Parent sample ID

1 = Area or aliquot group

Probable cause	Corrective action
An informational message is displayed.	Track Workflow Manager informational message. No corrective action is required.

Message code: 83164

Number of tubes for on-track aliquot exceeded

Number of aliquot tubes for on-track aliquot with parent barcode (0) exceeded. Invalid configuration on area / aliquot group: (1)

0 = Parent sample ID

1 = Area or aliquot group

Probable cause	Corrective action
An informational message is displayed.	Track Workflow Manager informational message. No corrective action is required.

Message code: 83165

Sample(s) expired.

Sample(s) already expired in archive (0).

0 = Sample ID

Probable cause	Corrective action
A test was ordered for a sample that has already exceeded the configured storage time limit.	The sample is potentially expired and is restored to error output area. Confirm sample integrity before processing.

Message code: 83166

Sample priority upgraded by test.

Priority of sample '(0)' was upgraded because of high priority test '(1)'.

0 = Sample ID

1 = Test codes

Probable cause	Corrective action
An informational message is displayed.	Track Workflow Manager informational message. No corrective action is required.

Message code: 83167

Centrifugation profiles mismatch aliquot.

Centrifugation profile conflict for aliquot. Best sample route: "(0)", Sample value: (1), Conflict (area/test/value): (2)

0 = Sample route

1 = Centrifugation profile

2 = Area name / test codes / centrifugation profile

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

Message code: 83168

Tube type SCREW required for aliquot centrifugation.

Aliquot creation failed: Aliquot tube type must be SCREW to centrifuge aliquot.

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

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.

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.

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.

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.

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.

Related information...

- [Troubleshooting](#), page 327
- [Track observed problems](#), page 423
- [CAR observed problems](#), page 425
- [Track Sample Manager observed problems](#), page 430
- [Track Workflow Manager observed problems](#), page 433
- [Input/Output Module observed problems](#), page 433

Track observed problems

Track observed problems include problems that occur with the track.

Related information...

- [Observed problems](#), page 423
- [Errors at AccessPoint](#), page 423
- [Errors at charge lane](#), page 423
- [Errors at cross switch controllers](#), page 424
- [Operator manually loads or unloads CAR](#), page 424
- [Sample in CAR was exchanged](#), page 424
- [Sample is missing](#), page 424

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 423

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 423

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 423

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 423

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 423

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 423

CAR observed problems

CAR observed problems include problems that occur with the CARs.

Related information...

- [Observed problems](#), page 423
- [CAR always moves at a constant speed](#), page 425
- [CAR does not exit the charge lane](#), page 426
- [CAR does not maintain distance with the CAR ahead of it or pushes it forward](#), page 426
- [CAR is caught on the charge lane charging pin or lane element transition](#), page 426
- [CAR LEDs blink in an uncontrolled manner \(such as red and yellow\) while moving](#), page 426
- [CAR lurches from side to side and is not stopped at the AccessPoint](#), page 427
- [CAR movement is jerky or noisy](#), page 427
- [CAR position is skewed on the track](#), page 427
- [CARs are present in the charge lane but cannot move](#), page 427
- [CARs come into contact with the charge lane](#), page 428
- [CARs do not move](#), page 428
- [CARs move too slowly](#), page 428
- [New CAR does not move](#), page 429
- [Rechargeable lithium battery is not charged](#), page 429
- [Rechargeable lithium battery is overheating](#), page 429
- [Sample tube is slanted in the sample holder](#), page 430

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 311). – Clean the housing (page 311). – Clean the charging contacts (page 312). – Clean the sample holder (page 312). – Clean the drive wheel and the wheel arch (page 313). • If necessary, replace the CAR. Perform one of the following procedures: – Remove a CAR with a sample (page 314). – Remove a CAR without a sample (page 314). • Contact an Abbott Laboratories representative or an authorized service representative.

Related information...

- [CAR observed problems](#), page 425

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 425

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.	1. 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. 2. Contact an Abbott Laboratories representative or an authorized service representative if necessary.

Related information...

- [CAR observed problems](#), page 425

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 Replace the front underseal of a CAR (page 315). • 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 425

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 425

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 315).

Related information...

- [CAR observed problems](#), page 425

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 311). – Clean the housing (page 311). – Clean the charging contacts (page 312). – Clean the sample holder (page 312). – Clean the drive wheel and the wheel arch (page 313). • Contact an Abbott Laboratories representative or an authorized service representative if necessary.

Related information...

- [CAR observed problems](#), page 425

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 315).

Related information...

- [CAR observed problems](#), page 425

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 425

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 315).

Related information...

- [CAR observed problems](#), page 425

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 314). • Remove a CAR without a sample (page 314).
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 315).
A track element is disconnected.	Contact an Abbott Laboratories representative or an authorized service representative.

Related information...

- [CAR observed problems](#), page 425

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 425

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 425

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 425

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 425

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 425

Track Sample Manager observed problems

Track Sample Manager (TSM) observed problems include problems that occur with TSM.

Related information...

- [Observed problems](#), page 423
- [CARs are circling the track](#), page 430
- [CARs do not reach a specific target; not all CARs reach targets](#), page 431
- [Too many samples are present in the error area of the output module](#), page 431
- [Traffic jam occurs on the track](#), page 432
- [Waiting queues are not full; waiting queues are empty but CARs are required](#), page 432
- [Message codes \(30000-39999\)](#), page 357

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 164). 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 146). 2. Transition the module status to Online.
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 146). 2. Ensure that the output drawers are emptied.

Related information...

- [Track Sample Manager observed problems, page 430](#)

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 165).

Related information...

- [Track Sample Manager observed problems, page 430](#)

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 165).
An error occurred when the barcode was read.	1. Ensure that the correct barcode 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.	1. Ensure that the module or analyzer on which the samples are to be processed is not in an error state. 2. Review any errors on the track. 3. Verify that there are no traffic jams on the track. 4. Contact an Abbott Laboratories representative or an authorized service representative if necessary.
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 430](#)

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 177).
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 165). 3. Contact an Abbott Laboratories representative or an authorized service representative if necessary.

Related information...

- [Track Sample Manager observed problems](#), page 430

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 177).
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 177).
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 165).

Continued on next page...

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Probable cause	Corrective action
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 175).

Related information...

- [Track Sample Manager observed problems](#), page 430

Track Workflow Manager observed problems

Track Workflow Manager (TWM) observed problems include problems that occur with TWM.

Related information...

- [Observed problems](#), page 423
- [The user interface fails to load or freezes](#), page 433

The user interface fails to load or freezes

Probable cause	Corrective action
The Track Workflow Manager (TWM) configuration has a large amount of data, such as an excess of 3000 tests assigned to an area or instrument workflow.	Contact an Abbott Laboratories representative or an authorized service representative if necessary.

Related information...

- [Track Workflow Manager observed problems](#), page 433

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 423
- [Barcode is not read](#), page 434
- [CAR does not move into the module](#), page 434
- [CAR moves through the AccessPoint without stopping](#), page 435
- [CAR stops at the AccessPoint and then will not move](#), page 435

- [Drawer is not fully open or fully closed](#), page 435
- [Handheld barcode reader beeps and emits a red light](#), page 436
- [Handheld barcode reader does not respond](#), page 436
- [Handheld barcode reader is not recognized or scanned data is not transmitted correctly](#), page 436
- [Manual rack identification workflow cannot finish](#), page 437
- [Module cover does not remain in position when opened](#), page 437
- [Power to the module is interrupted](#), page 438
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- [Sample tube is jammed in the robot gripper](#), page 440
- [Sample tube is tilted in the FlexRack](#), page 440
- [Touchscreen user interface and push buttons do not respond](#), page 441
- [Touchscreen user interface does not respond](#), page 441

Barcode is not read

Probable cause	Corrective action
The barcode reader is dirty or defective.	1. Clean the barcode reader. Perform Clean the sample barcode reader (page 322) or Clean the handheld barcode reader (page 323). 2. Contact an Abbott Laboratories representative or an authorized service representative if necessary.
The barcode is illegible.	1. Relabel the sample tube or rack. 2. For a sample tube, reintroduce the sample tube to the module.
The barcode symbology is not supported.	1. Relabel the sample tube or rack. Ensure that the barcode uses one of the supported symbologies. 2. Reintroduce the sample tube to the module or rescan the rack ID. 3. Contact an Abbott Laboratories representative or an authorized service representative if necessary.

Related information...

- [Input/Output Module observed problems](#), page 433

CAR does not move into 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.

Continued on next page...

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Probable cause	Corrective action
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 433

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 433

CAR stops at the AccessPoint and then will not move

Probable cause	Corrective action
An error occurred at the AccessPoint.	1. Cycle power to the module (page 265). 2. If the CAR does not move, perform Cycle power to an empty CAR (page 140). 3. Contact an Abbott Laboratories representative or an authorized service representative if necessary.

Related information...

- Input/Output Module observed problems, page 433

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. 3. If necessary, perform Cycle power to the module (page 265). 4. Contact an Abbott Laboratories representative or an authorized service representative if necessary.

Related information...

- [Input/Output Module observed problems, page 433](#)

Handheld barcode reader beeps and emits a red light

Probable cause	Corrective action
The handheld barcode reader has not completed initialization.	1. Wait several seconds. 2. Rescan the barcode. 3. Contact an Abbott Laboratories representative or an authorized service representative if necessary.
A hardware error occurred.	1. Cycle power to the module (page 265). 2. Contact an Abbott Laboratories representative or an authorized service representative if necessary.

Related information...

- [Input/Output Module observed problems, page 433](#)

Handheld barcode reader does not respond

Probable cause	Corrective action
A hardware error occurred.	1. Verify that the cable from the module to the handheld barcode reader is plugged in. 2. If necessary, perform Cycle power to the module (page 265). 3. Contact an Abbott Laboratories representative or an authorized service representative if necessary.

Related information...

- [Input/Output Module observed problems, page 433](#)

Handheld barcode reader is not recognized or scanned data is not transmitted correctly

Probable cause	Corrective action
A supported handheld barcode reader is not installed or connected.	1. Verify that the cable from the module to the handheld barcode reader is plugged in. 2. If necessary, perform Cycle power to the module (page 265). 3. Contact an Abbott Laboratories representative or an authorized service representative if necessary.

Related information...

- [Input/Output Module observed problems, page 433](#)

Manual rack identification workflow cannot finish

Probable cause	Corrective action
Invalid or incomplete rack ID values have been scanned or typed.	1. On the touchscreen user interface, ensure that every rack ID has a unique and valid entry. 2. If necessary, tap Cancel to exit the manual rack identification workflow. The drawer remains open. 3. To restart the workflow, press the drawer push button or tap the Open/Close drawer button on the touchscreen user interface. 4. Contact an Abbott Laboratories representative or an authorized service representative if necessary.

Related information...

- [Input/Output Module observed problems, page 433](#)

Module cover does not remain in position when opened

Probable cause	Corrective action
A hardware error occurred.	Contact an Abbott Laboratories representative or an authorized service representative.

Related information...

- [Input/Output Module observed problems, page 433](#)

Power to the module is interrupted

Probable cause	Corrective action
The power source to the module is interrupted.	1. Open the module cover. Perform Open and close the front and rear module covers (page 268). 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. 4. Place the samples in the correct input area of the Input/Output Module. 5. Clean any spills if necessary. 6. Close the module cover. Perform Open and close the front and rear module covers (page 268). 7. Place the module online (page 266).

Related information...

- [Input/Output Module observed problems](#), page 433

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 265). 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 268). 5. Tap the notification on the touchscreen user interface to acknowledge it.
The module entered pause mode due to the robot gripper being in motion when a drawer was opening or closing.	1. Deactivate pause mode (page 268). 2. Contact an Abbott Laboratories representative or an authorized service representative if necessary.

Related information...

- [Input/Output Module observed problems](#), page 433

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 323). • 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 433

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 51). 2. Inspect the robot gripper fingers for damage and dirt. 3. If necessary, perform Clean the robot gripper (page 319). 4. If necessary, perform Replace the robot gripper fingers (page 323). 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 433

Sample tube is tilted in the FlexRack

Probable cause	Corrective action
The FlexRack is damaged.	Replace the FlexRack. Perform Replace a FlexRack (page 325).

Related information...

- [Input/Output Module observed problems](#), page 433

Touchscreen user interface and push buttons do not respond

Probable cause	Corrective action
A hardware or software error occurred.	1. Shut down the module by using the rear module switch (page 280). 2. If necessary, Perform an emergency shutdown (page 126). 3. Contact an Abbott Laboratories representative or an authorized service representative.

Related information...

- [Input/Output Module observed problems](#), page 433

Touchscreen user interface does not respond

Probable cause	Corrective action
A software error occurred.	1. Cycle power to the module (page 265). 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 433

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A. LIST NUMBERS

Introduction

List numbers are unique identifiers that are used to order products. The list numbers are provided only for guidance and are subject to change. For the most current list numbers, contact an Abbott Laboratories representative.

Related information...

- [Consumable list numbers](#), page 444
- [Independent tool list numbers](#), page 445
- [Component replacement list numbers](#), page 446

Consumable list numbers

Consumables are replenishable items that are needed for sample processing on the GLP systems Track. To order the following consumables, contact an Abbott Laboratories representative.

Refer to the supplemental and interface manuals for module-specific consumables.

Table 26: GLP systems Track consumable list numbers

Item	Quantity	List number
CAR	12 per box	04Z95

Related information...

- [List numbers](#), page 443

Independent tool list numbers

Independent tools are optional items that are used to perform as-needed maintenance. The tools are intended to be used by laboratory operators for compliance, maintenance, and troubleshooting.

Refer to the supplemental and interface manuals for module-specific independent tools.

Related information...

- [List numbers](#), page 443

Component replacement list numbers

The operator can replace components during a component replacement procedure.

Refer to the supplemental and interface manuals for module-specific components.

Table 27: Input/Output Module component replacement list numbers

Item	Quantity	List number
FlexRacks	24 racks per box	04Z98
Robot gripper finger kit	1	06S66

Related information...

- [List numbers](#), page 443

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.
barcode 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 Clinical and Laboratory Standards Institute (page 447).
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 447).
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 448).
LIS	See laboratory information system (page 448).
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 username 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.
operator	A user of the laboratory automation system. All operators must be trained before operating the system. Operators may be referred to as users, trained operators, and trained personnel.

password	A string of alphanumeric characters that an operator enters when the operator logs on to the system. A password is used with a username 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 449).
TWM	See Track Workflow Manager (page 449).
username	A string of alphanumeric characters that an operator enters when the operator logs on to the system. The username 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.

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