

QIAasprint® Connect User Manual

For Research Use Only. Not for use in diagnostic procedures.



9001234



QIAGEN, GmbH, QIAGEN Strasse 1, 40724 Hilden, GERMANY

R1

Table of Contents

1. Introduction	5
1.1. About this user manual	5
1.2. General information	6
1.2.1. Technical assistance	6
1.2.2. Policy statement	6
1.3. Intended use of the QIAsprint Connect	6
1.4. Requirements for QIAsprint Connect	6
2. Safety Information	7
2.1. Proper use	7
2.2. Electrical safety	8
2.3. Operating conditions	10
2.4. Biological safety	11
2.5. Chemicals	11
2.6. Waste disposal	12
2.7. Mechanical hazards	12
2.8. Heat hazards	12
2.9. Radiation safety	13
2.10. Maintenance safety	13
2.11. Symbols on the QIAsprint Connect	14
3. General Description	16
3.1. QIAsprint Connect principle	16
3.2. External features of the QIAsprint Connect	18
3.2.1. Touchscreen	19
3.2.2. Hood	20
3.2.3. Power button	21
3.2.4. USB ports	21
3.2.5. Type plate	22
3.2.6. RJ-45 ethernet port	22
3.2.7. Power cord socket	22
3.2.8. Ventilation openings	22
3.3. Internal features of the QIAsprint Connect	23
3.3.1. Processing unit	24
3.3.2. Slider	24
3.3.3. Heater-cooler and thermal adaptors	25
3.3.4. Robotic handling system	25
3.3.5. Hood lock	26
3.3.6. UV box	26
3.3.7. Internal barcode reader	26
3.3.8. Internal illumination	27
3.4. Disposables	28
3.4.1. QIAsprint Prep Plate	28
3.4.2. QIAsprint Prep Cover assembly	29
3.4.3. QIAsprint Elution Plate and lid	30
4. Installation Procedures	31
4.1. System delivery and installation	31
4.2. Site requirements	31
4.3. Power requirements	32
4.4. Grounding requirements	33
4.5. QIAsprint Connect Manager Software requirements	33

4.6. Unpacking the QIAasprint Connect	34
4.7. Powering on the QIAasprint Connect and first steps	38
4.8. Installation of the external barcode scanner (optional)	40
4.9. Installation of the Wi-Fi adaptor (optional)	40
4.10. Packaging and transportation of the QIAasprint Connect	40
5. Operating Procedures	41
5.1. Use of the QIAasprint Connect instrument software	43
5.1.1. Initial log in and configuration	43
5.1.2. The on-screen keyboard	45
5.1.3. User management	46
5.1.4. Status bar	48
5.1.5. The Home menu	48
5.1.6. Protocols menu	49
5.1.7. Tools and Data menu	51
5.1.8. The Configuration menu	53
5.2. Setting up a protocol run	59
5.2.1. Set up a protocol run	59
5.2.2. Enter run details	60
5.2.3. Loading the instrument and executing a run	61
5.2.4. Load check	61
5.2.5. End of protocol run	63
5.3. Saving a run report	64
5.4. Export a support package	65
5.5. Canceling the protocol run setup	65
5.6. Aborting a protocol run	66
5.7. Pausing a protocol run	67
5.8. Manual interaction during a protocol run	67
5.9. Exporting and importing protocols	68
5.9.1. Exporting protocols from the instrument to USB drive	68
5.9.2. Importing protocols from USB drive to the instrument	69
5.9.3. Adding or updating QIAGEN protocols	70
5.9.4. Opening protocols in the QIAasprint Connect Manager Software	70
5.10. UV decontamination	71
5.11. Magnet head installation and exchange	73
5.12. Thermal adaptor placement	74
5.13. Magnet head guard	75
5.14. Software update	76
5.15. Language file update	77
6. The QIAasprint Connect Protocol Editor	78
6.1. Protocol Info screen	78
6.2. Steps and plates	80
6.2.1. Terminology	80
6.2.2. Defining Prep Covers	80
6.2.3. Defining the consumables	81
6.2.4. Defining the steps	83
6.2.5. Defining operations	85
6.2.6. Rearranging plates	89
6.2.7. Rearranging steps	90
6.2.8. Disabling and enabling steps	90
6.2.9. Duplicating plates and steps	90
6.2.10. Manual instruction steps	91
6.3. Two-batch protocol run (run twice)	92

7. Maintenance Procedures	93
7.1. Cleaning agents	93
7.1.1. Disinfection	94
7.2. Regular maintenance	95
7.2.1. Instrument cleaning and decontamination	96
7.2.2. Cleaning and decontamination of accessories	96
7.3. Irregular maintenance	96
7.3.1. Instrument housing	97
7.3.2. Magnet head	97
7.3.3. UV box	97
7.4. Instrument reboot	97
7.5. Servicing	97
8. Troubleshooting	98
8.1. Support package and screenshots	98
8.2. General troubleshooting measures	99
8.3. Help with specific error cases	101
8.4. Recovering a run	101
9. Technical Specifications	102
9.1. Environmental conditions – operating conditions	102
9.2. Environmental conditions – transport conditions	102
9.3. Environmental conditions – storage conditions	102
9.4. Mechanical data and hardware features	102
10. Glossary	103
Appendix A – Technical Data	105
Waste Electrical and Electronic Equipment (WEEE)	105
California Proposition 65 Warning	105
FCC Declaration (US) and Compliance with ICES (Canada)	105
Liability Clause	106
Appendix B – Ordering Information	107
Ordering information	107
Document Revision History	108

1. Introduction

Thank you for choosing QIASprint Connect. We are confident it will become an integral part of your research laboratory. Before using QIASprint Connect, read this user manual carefully and pay attention to the safety information. The instructions and safety information in the user manual must be followed to ensure safe operation of the instrument and to maintain the instrument in a safe condition.

1.1. About this user manual

This user manual provides information about QIASprint Connect in the following sections:

- Introduction – information about the intended use and requirements of QIASprint Connect
- Safety Information – information on any hazards related to QIASprint Connect and instructions for safe operation
- General Description – overview of the features of QIASprint Connect
- Installation Procedures – instructions for setting up the instrument before first use
- Operating Procedures – instructions for performing protocol runs
- The QIASprint Connect Protocol Editor – instructions for creating and editing protocols on the instrument or a PC
- Maintenance Procedures – information about cleaning and maintenance
- Troubleshooting – instructions for resolving problems during operation
- Technical Specifications – operating, transport, and storage conditions
- Glossary – alphabetical list of terms used in this user manual
- Appendices

The appendices contain the following information:

- Appendix A – Technical Data
- Waste Electrical and Electronic Equipment (WEEE)
- California Proposition 65 Warning
- FCC Declaration (US) and Compliance with ICES (Canada)
- Liability Clause
- Ordering information
- Document Revision History

1.2. General information

1.2.1. Technical assistance

At QIAGEN®, we pride ourselves on the quality and availability of our technical support. Our Technical Services Departments are staffed by experienced scientists with extensive practical and theoretical expertise in molecular biology and the use of QIAGEN products. If you have any questions or experience any difficulties regarding the QIA Sprint Connect or QIAGEN products in general, do not hesitate to contact us.

QIAGEN customers are a major source of information regarding advanced or specialized uses of our products. This information is helpful to other scientists as well as to the researchers at QIAGEN. We therefore encourage you to contact us if you have any suggestions about product performance or new applications and techniques.

For technical assistance and more information, please see our Technical Support Center at support.qiagen.com or call one of the QIAGEN Technical Service Departments or local distributors.

1.2.2. Policy statement

It is the policy of QIAGEN to improve products as new techniques and components become available. QIAGEN reserves the right to change specifications at any time. In an effort to produce useful and appropriate documentation, we appreciate your comments on this user manual. Please contact QIAGEN Technical Services.

1.3. Intended use of the QIA Sprint Connect

The QIA Sprint Connect instrument is designed to perform automated isolation and purification of nucleic acids. The instrument is intended for use by professional operators, such as technicians, trained in molecular biological techniques and the operation of the QIA Sprint Connect instrument. The instrument is intended for research use only and not for use in diagnostic procedures.

1.4. Requirements for QIA Sprint Connect

The table below covers the general level of competence and training necessary for transportation, installation, use, maintenance, and servicing of the QIA Sprint Connect.

Task	Personnel	Training and experience
Delivery	No special requirements	No special requirements
Installation	Laboratory technicians or equivalent	Appropriately trained and experienced personnel familiar with the use of computers and automation in general
Routine use (running protocols)	Laboratory technicians or equivalent	Professional users, such as technicians or physicians, trained in molecular biology techniques
Routine maintenance	Laboratory technicians or equivalent	Professional users, such as technicians or physicians, trained in molecular biology techniques
Servicing and annual maintenance	QIAGEN Field Service specialists only	Specialists trained, certified, and authorized by QIAGEN

2. Safety Information

Before using the QIASprint Connect, it is essential that you read this user manual carefully and pay attention to the safety information. The instructions and safety information in the user manual must be followed to ensure safe operation of the instrument and to maintain safe operation of the instrument.

Possible hazards that may harm the user or damage the instrument are described throughout this manual. If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

The following types of safety information appear throughout the *QIASprint Connect User Manual*.

WARNING



The term **WARNING** is used to inform you about situations that could result in personal injury to you or others.

Details about these circumstances are given in a box like this one.

CAUTION



The term **CAUTION** is used to inform you about situations that could result in **damage to an instrument** or other equipment.

Details about these circumstances are given in a box like this one.

The guidance provided in this manual is intended to supplement, not supersede, the normal safety requirements prevailing in the user's country.

2.1. Proper use

Perform the maintenance as described in Section 7. QIAGEN charges for repairs that are required due to incorrect maintenance.

If an emergency occurs, power off the QIASprint Connect at the power switch located in front of the instrument and unplug the power cord from the power outlet.

WARNING/ CAUTION



Risk of personal injury and material damage

Improper use of the QIASprint Connect may cause personal injuries or damage to the instrument. The QIASprint Connect must only be operated by qualified personnel who have been appropriately trained. Servicing of the QIASprint Connect instrument must only be performed by a QIAGEN Field Service Specialist.

WARNING



Risk of personal injury

The QIASprint Connect is too heavy to be lifted by one person. To avoid personal injury or damage to the instrument, do not lift the instrument alone. Use the handle attached to the box to lift the QIASprint Connect. After the QIASprint Connect has been unpacked, two people must lift the instrument. Lift the instrument by placing your hands underneath the bottom of the instrument.

WARNING



Risk of personal injury and material damage

Do not attempt to move the QIASprint Connect during operation.

CAUTION**Damage to the instrument**

Avoid spilling water or chemicals onto the QIA sprint Connect. Instrument damage caused by water or chemical spillage will void your warranty.

WARNING**Risk of fire or explosion**

When using ethanol or ethanol-based liquids on the QIA sprint Connect, handle such liquids carefully and in accordance with the required safety regulations. If liquid has been spilled, wipe it off and leave the QIA sprint Connect hood open to allow flammable vapors to disperse.

WARNING**Risk of explosion**

The QIA sprint Connect is intended for use with reagents and substances supplied with QIAGEN kits as outlined in respective instructions for use. Use of other reagents and substances may lead to fire or explosion.

WARNING**Risk of overheating**

To ensure proper ventilation, maintain a minimum clearance of 10 cm at the sides and rear of the QIA sprint Connect.

Slits and openings that ensure the ventilation of the instrument must not be covered.

If hazardous material is spilled on or inside the QIA sprint Connect, the user is responsible for carrying out appropriate decontamination.

Note: Do not place items on top of the QIA sprint Connect.

CAUTION**Damage to the instrument**

Ensure that the QIA sprint Connect is switched off before you manually move the mechanical components of the instrument.

CAUTION**Damage to the instrument**

Do not lean against the instrument or touchscreen.

2.2. Electrical safety

Note: If operation of the instrument is interrupted in any way (e.g., due to interruption of the power supply or a mechanical error), first switch off the QIA sprint Connect instrument, then disconnect the electrical cord from the power supply before attempting troubleshooting or service activity.

WARNING**Electrical hazard**

Any interruption of the protective conductor (earth/ground lead) inside or outside the instrument or disconnection of the protective conductor terminal is likely to make the instrument dangerous.

Intentional interruption is prohibited.

Lethal voltages inside the instrument

When the instrument is connected to line power, terminals may be live and opening covers or removing parts is likely to expose live parts.

WARNING**Damage to electronics**

Before powering ON the instrument, make sure that the correct supply voltage is used.

Use of incorrect supply voltage may damage the electronics.

To check the recommended supply voltage, refer to the specifications indicated in the type plate of the instrument.

WARNING**Risk of electric shock**

Do not open any panels on QIASprint Connect.

Risk of personal injury and material damage

Only perform maintenance that is specifically described in this user manual. Any other maintenance or repair may only be carried out by an authorized Field Service Specialist.

To ensure satisfactory and safe operation of the QIASprint Connect, follow these guidelines:

- The line power cord must be connected to a line power outlet that has a protective conductor (earth/ground).
- Place the instrument in a location so that the power cord is accessible and can be readily connected/disconnected.
- Use only the power cord delivered by QIAGEN.
- Do not adjust or replace internal parts of the instrument.
- Do not operate the instrument with any covers or parts removed.
- If liquid has spilled inside the instrument, switch off the instrument, and if the spill has not been completely contained on the workdeck, disconnect it from the power outlet, and contact QIAGEN Technical Services for advice before attempting any troubleshooting.

If the instrument becomes electrically unsafe, prevent other personnel from operating it and contact QIAGEN Technical Services.

The instrument may be electrically unsafe when:

- It or the line power cord appears to be damaged.
- It has been stored in unfavorable conditions for a prolonged period.
- It has been subjected to severe transport stresses.
- Liquids have come into direct contact with electrical components of the QIASprint Connect.
- The power cord has been exchanged with a power cord that was not intended to be used with the QIASprint Connect.

WARNING**Electrical hazard**

Do not touch the QIASprint Connect with wet hands.

WARNING**Electrical hazard**

Never install a fuse different from that specified in the user manual.

2.3. Operating conditions

Parameters such as temperature range and humidity range are described in Section 9.

This section describes how to operate the QIAAsprint Connect instrument.

Before proceeding, it is recommended that you familiarize yourself with the features of the instrument as described in Sections 3.2–3.4.

The hood of the QIAAsprint Connect must remain closed and locks automatically during operation of the instrument. Open the hood only when instructed to do so by the user manual or instrument software.

The plate handler and processing system of the QIAAsprint Connect move during operation of the instrument. Never open the QIAAsprint Connect hood while the instrument is operating.

WARNING



Explosive atmosphere

The QIAAsprint Connect is not designed for use in an explosive atmosphere.

WARNING



Risk of overheating

To ensure proper ventilation, maintain a minimum clearance of 10 cm at the sides and rear of the QIAAsprint Connect.

Slits and openings that ensure the ventilation of the instrument must not be covered.

WARNING



Risk of explosion

The QIAAsprint Connect is intended for use with reagents and substances supplied with QIAGEN kits as outlined in respective Information for use. Use of other reagents and substances may lead to fire or explosion.

CAUTION



Damage to the instrument

Direct sunlight may bleach parts of the instrument and cause damage to plastic parts. The QIAAsprint Connect must be located out of direct sunlight.

CAUTION



Damage to the instrument

Do not use the QIAAsprint Connect in the vicinity of sources of strong electromagnetic radiation (for example, unshielded, deliberately operated high-frequency sources or mobile radio devices), because these can interfere with the proper operation.

2.4. Biological safety

Specimens and reagents containing materials from humans should be treated as potentially infectious. Use safe laboratory procedures as outlined in publications such as Biosafety in Microbiological and Biomedical Laboratories, HHS (www.cdc.gov/labs/BMBL.html). You should be aware of the health hazard presented by such agents and should use, store, and dispose of such samples according to the required safety regulations.

WARNING



Samples containing infectious agents

Some samples used with QIASprint Connect may contain infectious agents. Handle such samples with the greatest of care and in accordance with the required safety regulations.

Always wear safety glasses, gloves, and a lab coat.

The responsible body (for example, a laboratory manager) must take the necessary precautions to ensure that the surrounding workplace is safe, and that the instrument operators are suitably trained and not exposed to hazardous levels of infectious agents as defined in the applicable Safety Data Sheets (SDSs) or the OSHA,* ACGIH,[†] or COSHH[‡] documents.

Venting for fumes and disposal of waste must be in accordance with all national, state, and local health and safety regulations and laws.

* OSHA — Occupational Safety and Health Organization (United States of America)

[†] ACGIH — American Conference of Government Industrial Hygienists (United States of America)

[‡] COSHH — Control of Substances Hazardous to Health (United Kingdom)

2.5. Chemicals

WARNING



Hazardous chemicals

Some chemicals used with QIASprint Connect may be hazardous or may become hazardous after completion of purification.

Always wear safety glasses, gloves, and a lab coat.

The responsible body (e.g., a laboratory manager) must take the necessary precautions to ensure that the surrounding workplace is safe, and that the instrument operators are suitably trained and not exposed to hazardous levels of infectious agents as defined in the applicable Safety Data Sheets (SDSs) or the OSHA,* ACGIH,[†] or COSHH[‡] documents.

Venting for fumes and disposal of waste must be in accordance with all national, state, and local health and safety regulations and laws.

* OSHA — Occupational Safety and Health Organization (United States of America)

[†] ACGIH — American Conference of Government Industrial Hygienists (United States of America)

[‡] COSHH — Control of Substances Hazardous to Health (United Kingdom)

WARNING



Toxic fumes

Do not use bleach to clean or disinfect the QIASprint Connect or the labware, as bleach in contact with salts from the buffers can produce toxic fumes.

Note: If you work with volatile solvents, toxic substances, etc., you must provide an efficient laboratory ventilation system to remove vapors that may be produced.

2.6. Waste disposal

Used consumables, such as Prep Plates, Prep Covers, and elution plates, may contain hazardous chemicals or infectious agents from the purification process. Such waste must be collected and disposed of properly, according to local safety regulations.

For information about how to dispose of the QIASprint Connect, see Appendix A – Technical Data, Waste Electrical and Electronic Equipment (WEEE).

CAUTION



Hazardous chemicals and infectious agents

Waste may contain toxic or infectious material and must be disposed of properly. Refer to your local safety regulations for proper disposal procedures.

2.7. Mechanical hazards

The hood of the QIASprint Connect must remain closed during operation of the instrument. Only open the hood when instructed to do so by the instructions for use or when prompted by the graphical user interface (GUI).

The hotel platform of the QIASprint Connect moves during operation of the instrument. While loading the hotel platforms, always stand clear of the instrument. Do not lean on the workdeck when the handling unit of the instrument is moving to reach hotel position. Wait until the handler unit completes its movements before you start to load or unload.

WARNING



Moving parts

To avoid contact with moving parts during the operation of the QIASprint Connect, the instrument must be operated with the hood closed. The hood is locked during operation for safety reasons and a sensor detects the hood position. If the hood sensor or lock is not functioning correctly, contact QIAGEN Technical Support.

WARNING



Moving parts

Avoid contact with moving parts during operation of the QIASprint Connect. Under no circumstances should hands be placed under the processing unit during movement. Do not attempt to remove any plasticware from the workdeck while the instrument is operating.

2.8. Heat hazards

The QIASprint Connect contains a heating system.

WARNING



Hot surface

The heating system can reach temperatures of up to 95°C (203°F). Avoid touching it when it is hot, in particular, shortly after a run has been carried out.

2.9. Radiation safety

The QIASprint Connect instrument has a UV LED lamp. The wavelength of the UV light produced by the UV LED lamp is 275–285 nm. This wavelength corresponds to ultraviolet light type C, which can be used to support decontamination procedures. A mechanical lock ensures that the hood is closed for operation of the UV LED. If the hood sensor or lock is not functioning correctly, contact QIAGEN Technical Support.

WARNING

UV radiation



Avoid looking directly into UV light. Do not expose your skin to UV light.

The QIASprint Connect can be used with a 2D handheld barcode scanner to allow sample barcode scanning.

WARNING

Risk of personal injury



Hazard Level 2 laser light: Do not stare into the light beam when using handheld barcode scanner.

2.10. Maintenance safety

WARNING/ CAUTION

Risk of personal injury and material damage



Only perform maintenance that is specifically described in this user manual.

Perform the maintenance as described in Section 7. QIAGEN charges for repairs that are required due to incorrect maintenance.

WARNING/ CAUTION

Risk of personal injury and material damage



Improper use of the QIASprint Connect may cause personal injuries or damage to the instrument. The QIASprint Connect must only be operated by qualified personnel who have been appropriately trained. Servicing of the QIASprint Connect must only be performed by a QIAGEN Field Service Specialist.

Operate the QIASprint Connect only as described in Section 5. QIAGEN charges for repairs that are required due to incorrect operation.

WARNING

Risk of fire



After cleaning the QIASprint Connect with alcohol-based disinfectant, leave the instrument door open to allow flammable vapors to disperse. Only clean the QIASprint Connect with alcohol-based disinfectant when workdeck components have cooled down.

WARNING

Risk of fire



Do not allow cleaning fluid or decontamination agents to come into contact with the electrical parts of the QIASprint Connect.

CAUTION**Damage to the instrument**

Do not use bleach, solvents, or reagents containing acids, alkalis, or abrasives to clean the QIAAsprint Connect.

CAUTION**Damage to the instrument**

Do not use spray bottles containing alcohol or disinfectant to clean surfaces of the QIAAsprint Connect. Spray bottles should be used only to clean items that have been removed from the workdeck and if permitted by local laboratory operating practices.

CAUTION**Damage to the instrument**

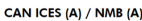
After wiping the workdeck with paper towels, make sure that no residual pieces of paper towel remain. Pieces of paper towel remaining on the workdeck could lead to a workdeck collision.

**WARNING/
CAUTION****Risk of personal injury and material damage**

Do not open any panels on QIAAsprint Connect. Only perform maintenance as described in this user manual.

2.11. Symbols on the QIAAsprint Connect

Symbol	Location	Language	Description
	Inside instrument, on the right and left side of the slider.	–	Heat hazard – the temperature of the heating system can reach up to 95°C. Do not perform maintenance before the system has cooled down.
	Inside the instruments – near hotels	–	Biohazard – the tip rack may be contaminated with biohazardous material and must be handled with gloves.
	Inside the instruments – near hotels	–	UV radiation hazard – avoid looking directly into UV light. Do not expose your skin to UV light.
	On handheld barcode scanner	–	Hazard Level 2 laser light: Do not stare into the light beam when using handheld barcode scanner.
	Inside the instrument, next to the left hotel	–	Crush hazard – the magnet heads, and moving parts may crush your fingers or hand.
	On the magnetic head, in the middle of the instrument, and on the magnet head storage box	–	Strong magnetic field – Take care to avoid exposure to a strong magnetic field
	Inside instrument	–	Earth (Ground)
	Type plate on the back of the instrument	–	Unique device identifier

Symbol	Location	Language	Description
	Type plate on the back of the instrument	–	Global Trade Item Number
	Type plate on the back of the instrument	–	Instrument serial number
	Type plate on the back of the instrument	–	QIAGEN catalogue number
	Type plate on the back of the instrument	–	Legal manufacturer
	Type plate on the back of the instrument	–	Date of manufacture
	Type plate on the back of the instrument	–	Fuse
 Shows product tested by iCSA to meet U.S. and Canadian Standards.	Type plate on the back of the instrument	EN	CSA mark for Canada and the USA
	Type plate on the back of the instrument	–	WEEE about the disposal of waste electrical and electronic equipment for Europe and rest of the world.
	Type plate on the back of the instrument	–	CE mark for Europe
	Type plate on the back of the instrument	–	RoHS mark for China (the restriction of the use of certain hazardous substances in electrical and electronic equipment)
	Type plate on the back of the instrument	–	See warnings and precautions
	Type plate on the back of the instrument	–	Consult instructions for use.
	Type plate on the back of the instrument		Compliance mark to Canada standard ICES-003

3. General Description

The QIAprint Connect is used for molecular biology applications for research purposes and performs fully automated nucleic acid purification from up to 96 samples per single run using magnetic-particle technology. For dedicated protocols, loading of the instrument for two subsequent runs is possible, resulting in up to 192 processed samples.

The QIAprint Connect has pre-installed protocols that are used with QIAGEN kits to purify nucleic acids. Alternatively, user-defined protocols can be programmed by using the protocol editor (instrument software or Microsoft Windows® application). The instrument's touchscreen display allows the user to easily select protocols. The intuitive user interface guides the user through the run setup process, by providing a means to record run information and by displaying the correct way to load the protocol's labware on the QIAprint Connect workdeck. The order and contents of the labware are determined by the protocol. When the protocol run starts, the isolation of nucleic acids is carried out automatically in a modular workflow. Users can connect their instrument to QIASphere using the QIASphere Connectivity Package (Appendix B – Ordering Information), enabling the automatic upload of diagnostic data.

The transportation of reagent and sample plates from the loaded hotels to the processing unit is fully automated via the handling system. The mixing and separation of magnetic particles are performed in the processing unit by the Prep Cover and the 96-magnet head module. If required by the protocol, the temperature of the reagents is controlled by the heating system.

3.1. QIAprint Connect principle

Sample preparation using the QIAprint Connect usually consists of four main steps: lysis, bind, wash, and elution.

- Samples are lysed and heat incubated, if required by the protocol.
- Nucleic acids bind to the surface of the magnetic particles and are washed to remove contaminants.
- Purified nucleic acid is eluted.

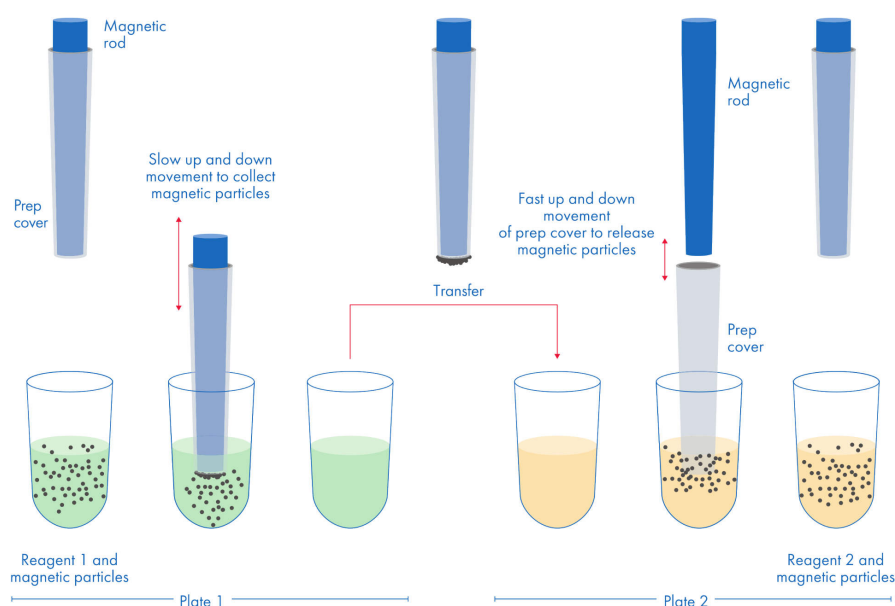


Figure 1. The QIAprint Connect working principle.

The QIAasprint Connect processes a sample containing magnetic particles as follows:

1. In the collect beads step, the magnetic rods protected by a Prep Cover enter the wells of a Prep Plate containing the sample and attract the magnetic particles.
2. The Prep Cover with the magnetic rods is retracted from the well, pulling the magnetic particles with bound nucleic acid from the solution.
3. The plate handling system exchanges the Prep Plate below the Prep Cover. The next plate contains the following solution of the workflow (e.g., a wash buffer).
4. In the release beads step, the Prep Cover with inserted magnetic rods enters the new solution. The magnetic rods are retracted, and the Prep Cover mixes the solution to resuspend the magnetic particles and perform the next process step (e.g., wash step).
5. These steps are repeated until all steps of the process have been performed. In the final step, the nucleic acid is released into the plate with elution buffer and the magnetic beads are extracted.
6. The QIAasprint Connect uses a magnetic head containing an array of 96 magnetic rods, and can therefore process up to 96 samples simultaneously.

Attracting magnetic particles

To attract magnetic particles, the magnetic rods are first fully inserted into a Prep Cover. The magnetic rods with Prep Cover then move slowly up and down in the well containing the sample to ensure maximal attraction of magnetic particles.

Releasing magnetic particles

To release magnetic particles, the magnetic rods with Prep Cover are first moved down into a well. The magnetic rods are then withdrawn from the Prep Cover, and the Prep Cover is lowered into the well. The Prep Cover is moved quickly up and down to ensure maximal release and mixing of magnetic particles in the solution in the well.

Washing magnetic particles

The QIAasprint Connect washes magnetic particles by transferring them from one wash solution to another. To improve washing efficiency, the Prep Covers are designed to minimize liquid transfer along with the magnetic particles. To ensure that magnetic particles are evenly distributed in a solution during a long incubation, the QIAasprint Connect either mixes the solution continuously or periodically by moving the Prep Cover.

Concentrating magnetic particles

The QIAasprint Connect concentrates magnetic particles (beads) by attracting the magnetic particles from a solution of large volume and releasing the particles in a solution of low volume.

The precise parameters of all listed operations can be set by the creator of the protocols to optimize the processing efficiency of the workflow.

3.2. External features of the QIAasprint Connect

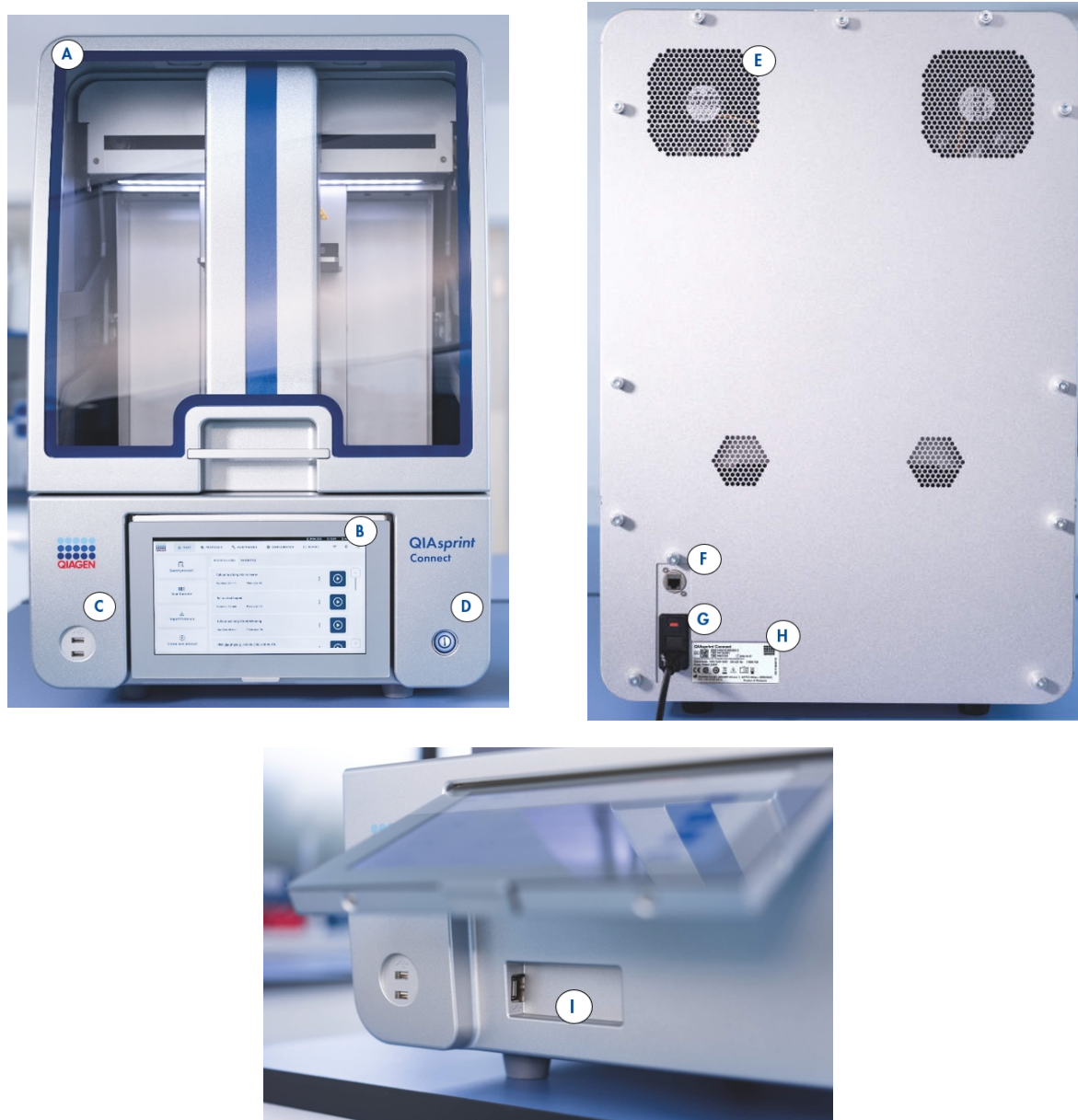


Figure 2. Front, rear, and behind-screen views of the QIAasprint Connect.

- | | | | |
|----------|---------------------|----------|--|
| A | Hood | F | RJ-45 ethernet port |
| B | Touchscreen | G | Power cord socket including instrument main fuse |
| C | USB ports | H | Type plate |
| D | Power button | I | USB port behind touchscreen (e.g., Wi-Fi dongle) |
| E | Ventilation opening | | |

3.2.1. Touchscreen

The QIAasprint Connect has a 10.1 inch color touchscreen display with a resolution of 1280 × 720 pixels (Figure 3). The GUI is displayed on the touchscreen, allowing the user to operate the instrument, set up and start runs, perform maintenance procedures, monitor the instrument status, change settings, and download reports.



Figure 3. The QIAasprint Connect touchscreen.

3.2.2. Hood

The QIAasprint Connect hood protects the interior of the instrument from external contamination during protocol runs. Additionally, the hood protects operators from moving parts during protocol runs and UV irradiation during decontamination procedures.

The hood must be closed to start a protocol run. The hood is locked at the start of a run and remains locked throughout the run. The hood can be manually opened to gain access to the workdeck when no protocol is running. During operation of the QIAasprint Connect, the hood must remain closed and should only be opened when you are instructed to do so by the user manual or instructions on the GUI.

WARNING



Moving parts

To avoid contact with moving parts during the operation of the QIAasprint Connect, the instrument must be operated with the hood closed. The hood is locked during operation for safety reasons and a sensor detects the hood position. If the hood sensor or lock is not functioning correctly, contact QIAGEN Technical Support.



Figure 4. The QIAasprint Connect with an open hood.

3.2.3. Power button

The power button is located on the bottom right corner of the front of the QIASprint Connect. To turn on the QIASprint Connect, press the button. After pressing the button, the power button lights up, the startup screen appears on the touchscreen, and the instrument initializes. To save energy, the QIASprint Connect can be turned off when not in use. To turn off the QIASprint Connect, press the power button; the instrument software does not need to be shut down separately.



Figure 5. The power button.

3.2.4. USB ports

The QIASprint Connect has three USB ports. Two are located on the bottom left corner of the front of the QIASprint Connect. The third USB port is located behind the touchscreen display. The USB ports allow you to connect a USB drive, the handheld barcode scanner (delivered with the instrument), and a Wi-Fi adaptor to the QIASprint Connect. A USB drive can be used to import or export protocols (Section 5.9), export run reports (Section 5.3), create a support package (Section 5.4), or update the instrument (Section 5.14). The handheld barcode scanner can be used instead of the on-screen keyboard to fill in input fields in the software (e.g., for the sample plate ID).

Important: Sample ID is a critical identifier needed to identify each test, which may be used by the manufacturer to investigate reported events, as required by law. For data protection purposes, it is required that sample IDs are de-identified (pseudonymized) using alphanumerical codes that do not identify an individual. There must be no reasonable basis to believe that the information could be used to identify an individual.

Important: Use only the USB stick provided by QIAGEN. Do not connect other USB stick devices to USB ports.

Important: Do not remove the USB drive or interrupt power while downloading or transferring data or software to and from the instrument.

Important: USB devices other than those listed above should not be connected to any of the USB ports on the QIASprint Connect.

3.2.5. Type plate

The type plate is located at the back of the instrument, next to the power connection (Figure 2H). The symbols are explained in Section 2.11.

3.2.6. RJ-45 ethernet port

The RJ-45 ethernet port is located at the back of the instrument, above the power connection (Figure 2G). The port is used to connect the QIAsprint Connect to a local area network.

3.2.7. Power cord socket

The power cord socket is located on the back of the QIAsprint Connect (Figure 2F) and is used for connecting the instrument to a power outlet via the supplied power cord. On some instruments, there might be a sign with 230 V on the power cord socket. This power socket can still work with different input voltages. No action is required if the input voltage differs from the voltage written on the sign, if the voltage is inside of the allowed operating voltage range (100–240 V).

WARNING

Electrical hazard



Any interruption of the protective conductor (earth/ground lead) inside or outside the instrument or disconnection of the protective conductor terminal is likely to make the instrument dangerous.

Intentional interruption is prohibited.

Lethal voltages inside the instrument

When the instrument is connected to line power, terminals may be live and opening covers or removing parts is likely to expose live parts.

WARNING

Damage to electronics



Before powering ON the instrument, make sure that the correct supply voltage is used.

Use of incorrect supply voltage may damage the electronics.

To check the recommended supply voltage, refer to the specifications indicated in the type plate of the instrument.

WARNING

Risk of electric shock



Do not open any panels on QIAsprint Connect.

Risk of personal injury and material damage

Only perform maintenance that is specifically described in this user manual. Any other maintenance or repair may only be carried out by an authorized Field Service Specialist.

3.2.8. Ventilation openings

QIAsprint Connect ventilation openings allow the internal components of the instrument to be cooled (Figure 2E).

WARNING

Risk of overheating



To ensure proper ventilation, maintain a minimum clearance of 10 cm at the sides and rear of the QIAsprint Connect.

Slits and openings that ensure the ventilation of the instrument must not be covered.

3.3. Internal features of the QIAasprint Connect



Figure 6. Internal view of the QIAasprint Connect.

- | | | | |
|----------|---|----------|---|
| A | Plate handler | G | Prep Cover holder |
| B | Hotels on hotel platforms | H | Prep cover gripper |
| C | Thermal adaptor on thermal adaptor platform | I | Slit for magnet head guard |
| D | UV box on UV box platform | J | Slider |
| E | Magnet head holder | K | Extended heater-cooler with thermal adaptor |
| F | Magnet head | L | Slider latch |

3.3.1. Processing unit

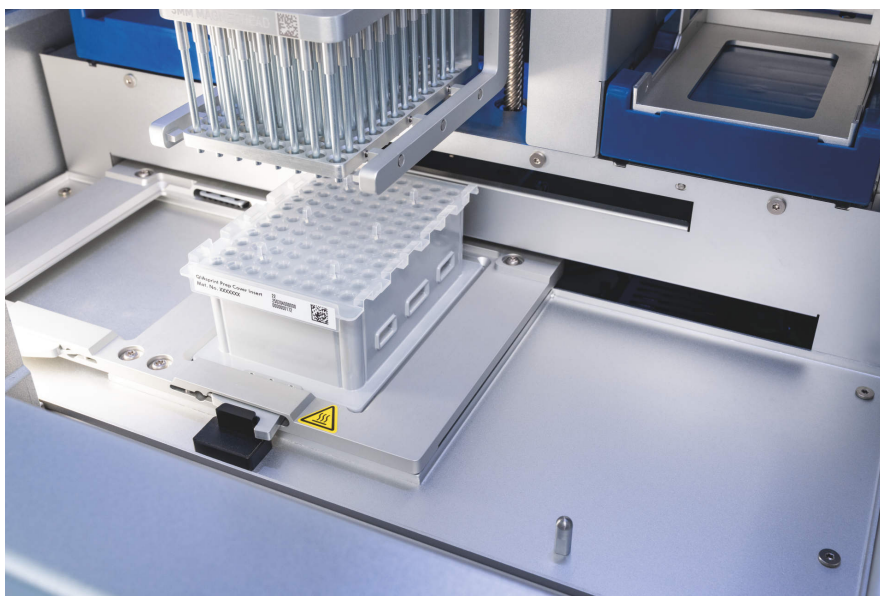


Figure 7. Processing unit.

The processing unit consists of the magnet head, the Prep Cover holder, and the magnet head guard. The magnet head is comprised of an array of 96 magnetic rods. The Prep Cover holder carries the Prep Cover during the run. It performs the mixing steps and, when synchronized with the magnet head, extracts the beads from the well liquid for transfer into the next plate. The magnet head guard is moved under the Prep Cover during a plate exchange to reduce the chance of cross-contamination.

Important: To prevent cross-contamination, only operate the instrument with the magnet head guard installed.

3.3.2. Slider

The slider moves the loaded/empty Prep Cover frame, loaded Prep Plate holder, or elution plate from a loading position (to the right or left from the magnet head) to the processing position underneath the magnet head and back to a unloading position (to the right or left from the magnet head). A retention mechanism ensures to fixate the loaded/empty Prep Cover frame, loaded Prep Plate holder or elution plate in the processing position.

3.3.3. Heater-cooler and thermal adaptors

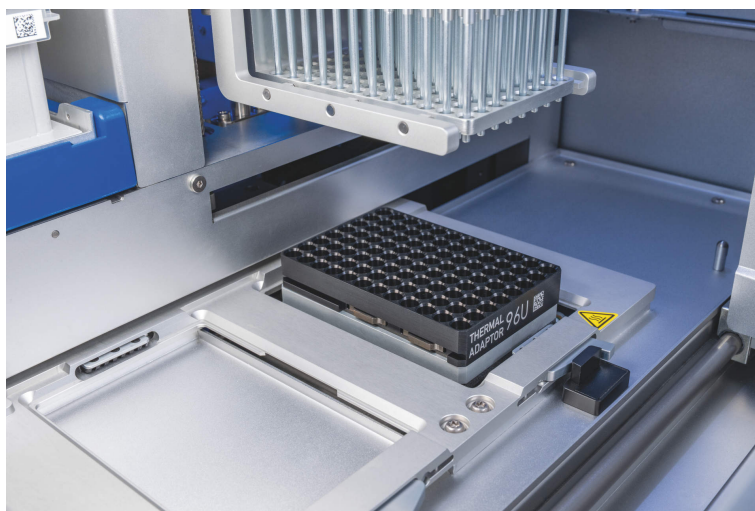


Figure 8. The extended heater-cooler with a thermal adaptor.

The purpose of the heater-cooler is to support temperature incubation steps within the protocol, such as lysis or elution. It also supports cooling for plates that cannot be taken out of the instrument immediately after a run. The heater-cooler operates in a range of 10–95°C and is applied automatically to plates where required. A thermal adaptor is placed on the heater-cooler to support the interfacing with the disposables. Before a run, the instrument locates the fitting thermal adaptor automatically, either on the heater-cooler (Figure 8) or on the thermal adaptor platform (Figure 6). If necessary, the robotic handling system transfers the thermal adaptor to the heater-cooler before the run.

3.3.4. Robotic handling system

The robotic handling system consists of the arm, the gripper, and an internal barcode reader. The gripper transfers the disposables from the hotels to the slider and back. The gripper is part of the arm and while the gripper can move up and down the arm is moving to the right or left within the instrument.

The UV box and the thermal adapter can also be transferred within the instrument by the robotic handling system.

3.3.5. Hood lock

The hood lock system is an essential safety feature designed to prevent the operator from coming into contact with moving parts within the QIAAsprint Connect. This lock is engaged during a run, ensuring that the hood remains securely closed throughout the operation. Should the hood sensor or lock malfunction, it is crucial to contact QIAGEN Technical Support immediately for assistance.

WARNING

Moving parts



To avoid contact with moving parts during the operation of the QIAAsprint Connect, the instrument must be operated with the hood closed. The hood is locked during operation for safety reasons and a sensor detects the hood position. If the hood sensor or lock is not functioning correctly, contact QIAGEN Technical Support.

WARNING

Moving parts



Avoid contact with moving parts during operation of the QIAAsprint Connect. Under no circumstances should hands be placed under the processing unit during movement. Do not attempt to remove any plasticware from the workdeck while the instrument is operating.

3.3.6. UV box

WARNING

UV radiation



Avoid looking directly into UV light. Do not expose your skin to UV light.



Figure 9. UV box.

The UV box (Figure 9) is usually stored on the UV box platform (Figure 6D) and can be moved automatically by the robotic handling system. It is used in the UV decontamination run (Section 5.10).

3.3.7. Internal barcode reader

As part of the load check, the internal barcode reader on the robotic handling system identifies the loaded disposables within the hotels, as well as the UV box and the thermal adaptors on the storage platforms.

3.3.8. Internal illumination



Figure 10. The internal illumination.

The QIAasprint Connect has a built-in LED light (Figure 10). The internal light illuminates the instrument and informs about the current status of the run. There are two modes of the LED light:

- **Blinking or pulsing light** – indicates that operator activity is required (e.g., when a run has come to completion or an error has occurred).
- **Constant light** – the default setting, used in all other situations.

3.4. Disposables

QIASprint disposables are based on a 96-well plate format allowing the processing of up to 96 samples simultaneously. By utilizing reusable aluminum frames, the QIASprint system reduces the plastic waste per run significantly while also maintaining compatibility with pipetting robots or centrifuges.

Note: Only use disposables manufactured by QIAGEN.

3.4.1. QIASprint Prep Plate



Figure 11. QIASprint Prep Plate.

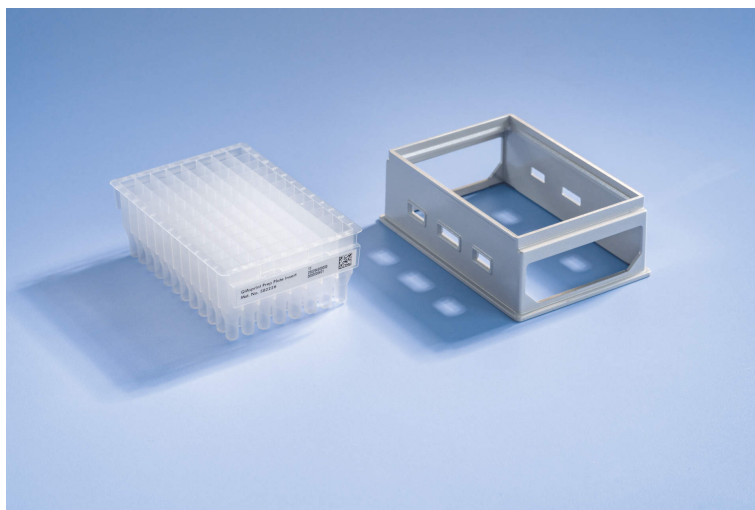


Figure 12. QIASprint Prep Plate Insert and QIASprint Prep Plate Frame.

The QIAasprint Prep Plate (Figure 11) consists of the QIAasprint Prep Plate Insert and the QIAasprint Prep Plate Frame (Figure 12). To assemble the Prep Plate, follow these steps:

1. Hold the Prep Plate insert with both hands and slightly lift the front and rear latch. Do not lift the latches into a horizontal position to avoid deformation and poor attachment to the frame.
2. Place the Prep Plate insert in the frame, avoiding tilting in the process. Press the latches down until they click into the sides of the frame. Never place a Prep Plate insert without the frame into the instrument.
3. Verify that the insert sits levelly in the frame. A tilted insert can lead to the interruption of a run.
4. Fill the assembled Prep Plate according to protocol instructions and place it in the designated slot of the hotel as described in the Loading screen (Figure 43), with the QR code facing toward the operator of the instrument. The top slots of the hotels cannot house Prep Plates.

3.4.2. QIAasprint Prep Cover assembly



Figure 13. QIAasprint Prep Cover assembly.



Figure 14. QIAasprint Prep Cover Frame and QIAasprint Prep Cover.

The QIAasprint Prep Cover assembly (Figure 13) consists of the Prep Cover and the Prep Cover frame (Figure 14). The Prep Cover is picked up from the frame by the Prep Cover holder during a run and used for the mixing of reagents and for bead collection. Place the Prep Cover in a frame before loading it into the hotel. Only the lowest hotel slots can house Prep Cover assemblies. The QR code must face the instrument operator. The Prep Cover frame needs to be cleaned after every run (Section 7.2.2).

To catch bead spills in the Prep Cover Frame, a frame shield can be placed into the Prep Cover frame before loading the Prep Cover Frame and QIAasprint Frame Shield.

3.4.3. QIAasprint Elution Plate and lid



Figure 15. QIAasprint Elution Plate with lid.

The QIAasprint Elution Plate (Figure 15) is delivered with a lid and can be placed with the lid in the instrument. The plate handling system automatically removes the lid where required. The presence of the lid must be specified in the protocol and is verified during the load check. Only the top slots of the hotels can house elution plates. The QR codes must face the instrument operator.

4. Installation Procedures

This section provides instructions on installation environment requirements as well as unpacking, installing, and packing the QIASprint Connect.

4.1. System delivery and installation

The following items are delivered:

- QIASprint Connect instrument
- Left and right hotels
- IFU download flier
- Power cord set
- Two Prep Cover frames
- Eight Prep Plate frames
- Magnet head
- UV box
- Thermal adaptor
- USB drive
- Handheld barcode scanner

4.2. Site requirements

The QIASprint Connect must be located out of direct sunlight, away from heat sources and sources of vibration and electrical interference. Refer to Section 5 for the operating conditions (temperature and humidity). The installation site should be free of drafts, moisture, and dust, and should not be subject to large temperature fluctuations.

Use a level workbench that is large enough and strong enough to accommodate the QIASprint Connect. To ensure proper ventilation, maintain a minimum clearance of 10 cm at the sides and rear of the QIASprint Connect. Refer to Section 9 for the weight and dimensions of the QIASprint Connect. Ensure that the workbench is dry, clean, and vibration-proof, and has additional space for accessories.

The QIASprint Connect must be placed within approximately 1.5 m of a properly grounded (earthed) AC power outlet. The power line to the instrument should be voltage regulated and surge protected. Ensure that the QIASprint Connect is positioned so that it is easy to access the power connector at the back of the instrument and the power switch on the front at all times, and that it is easy to turn the instrument off and disconnect it.

Note: It is recommended to plug the instrument directly into its own power outlet and to not share the power outlet with another piece of equipment.

CAUTION**Radio reception**

This equipment is not intended for use in residential environments and may not provide adequate protection to radio reception in such environments.

WARNING**Explosive atmosphere**

The QlAsprint Connect is not designed for use in an explosive atmosphere.

WARNING**Risk of overheating**

To ensure proper ventilation, maintain a minimum clearance of 10 cm at the sides and rear of the QlAsprint Connect.

Slits and openings that ensure the ventilation of the instrument must not be covered.

WARNING**Risk of personal injury and material damage**

The QlAsprint Connect is too heavy to be lifted by one person. To avoid personal injury or damage to the instrument, do not lift the instrument alone.

CAUTION**Damage to the instrument**

Direct sunlight may bleach parts of the instrument and cause damage to plastic parts. The QlAsprint Connect must be located out of direct sunlight.

CAUTION**Damage to the instrument**

Do not use the QlAsprint Connect in the vicinity of sources of strong electromagnetic radiation (for example unshielded, deliberately operated high-frequency sources or mobile radio devices), because these can interfere with the proper operation.

4.3. Power requirements

The QlAsprint Connect operates at 100–240 VAC $\pm 10\%$, 50–60 Hz, 1000 VA. Make sure the voltage rating of the QlAsprint Connect is compatible with the AC voltage available at the installation site.

WARNING**Damage to electronics**

Before turning the instrument on, make sure that the correct supply voltage is used.

Use of incorrect supply voltage may damage the electronics.

To check the recommended supply voltage, refer to the specifications indicated on the type plate of the instrument.

WARNING**Electrical hazard**

Any interruption of the protective conductor (earth/ground lead) inside or outside the instrument or disconnection of the protective conductor terminal is likely to make the instrument dangerous.

Intentional interruption is prohibited.

Lethal voltages inside the instrument

When the instrument is connected to line power, terminals may be live and opening covers or removing parts is likely to expose live parts.

4.4. Grounding requirements

To protect operating personnel, the National Electrical Manufacturers' Association (NEMA) recommends that the QIASprint Connect be correctly grounded (earthed). The instrument is equipped with a 3-conductor AC power cord set that, when connected to an appropriate AC power outlet, grounds (earths) the instrument. To preserve this protection feature, do not operate the instrument from an AC power outlet that has no ground (earth) connection.

WARNING



Electrical hazard

Any interruption of the protective conductor (earth/ground lead) inside or outside the instrument or disconnection of the protective conductor terminal is likely to make the instrument dangerous.

Intentional interruption is prohibited.

Lethal voltages inside the instrument

When the instrument is connected to line power, terminals may be live and opening covers or removing parts is likely to expose live parts.

4.5. QIASprint Connect Manager Software requirements

The QIASprint Connect Manager Software is an application for Microsoft Windows that can be used to create or modify protocols.

Description	Minimum requirement	Notes
Operating system	Microsoft Windows 11	
Processor	Intel® Core™ i3-8100 or AMD Ryzen 3 3100	
Main memory	4 GB	
Hard disk space	200 MB	
Display	1280 × 720 px	
Ports	USB port	

4.6. Unpacking the QIA sprint Connect

WARNING

Risk of personal injury and material damage



The QIA sprint Connect is too heavy to be lifted by one person. To avoid personal injury or damage to the instrument, do not lift the instrument alone.

1. Before unpacking the QIA sprint Connect, move the package to the site of installation and check that the arrows on the package point upward. In addition, check whether the package is damaged. If the package is damaged, contact QIAGEN Technical Support.



2. Lift the top of the transportation box and remove the top layer (PE foam). Remove the accessories box.



3. Remove the black foam layer and lift the outer carton box by holding at the cut-out area and lifting up the outer carton box.



4. Remove the two pieces of protective foam from the unit, followed by the plastic bag.



5. Move the unit to the workbench or trolley from the packaging. When lifting the QIAasprint Connect, slide your fingers under the side of the instrument and keep your back straight.

Important: At least two persons are required to lift the QIAasprint Connect.

Important: Do not hold the touchscreen display while unpacking or lifting the QIAasprint Connect. This might damage the instrument.

6. Remove the pieces of tape that secure the hood to the base panels and open the hood.
7. Remove the silica gel pack.

8. Remove the transport lock foams as follows:

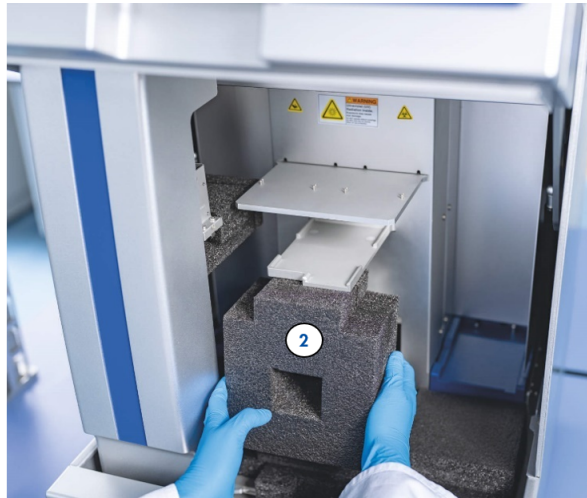
a. Remove the foam labelled 1.



b. Move the plate handler arm to the left.



- c. Remove the foam labelled 2.



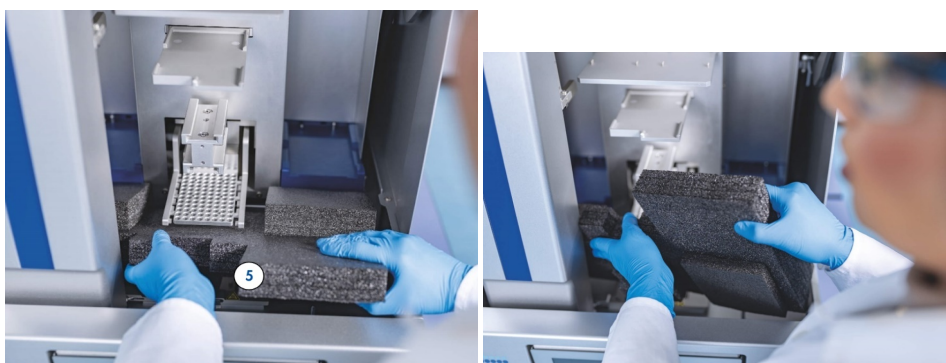
- d. Remove the foam labelled 3 that is protecting the gripper fingers by moving it backwards into the left hotel placement area.



- e. Remove the foam labelled 4 by pulling it out.



- f. Remove the foam labelled 5 by turning it carefully and lift it to the top.



9. Remove the protective film that covers the hood.
10. Open the accessories box (Figure 16) and unpack the accessories.

Important: All packaging should be retained in case the instrument has to be packed for shipping. If that is not possible, at least the magnet box must be retained, because it is an important part of the magnet head installation procedure and used to safely store the magnet head when not installed in the instrument.



Figure 16. The QIASprint Connect accessories box.

4.7. Powering on the QIASprint Connect and first steps

1. Remove all transport lock foams as described in Section Unpacking the QIASprint Connect.
2. Remove the power cord set from the accessories box and choose the cord that fits your power outlet. Check that the voltage rating on the label at the back of the QIASprint Connect matches the voltage available at the installation site.

Note: Only use the power cord set that was supplied with the QIASprint Connect.

3. Ensure that the blue power switch at the front of the instrument is set to OFF (Figure 17).



Figure 17. The power switch in the OFF state.

4. Plug the power cord set into the instrument power cord socket.
5. Plug the power cord set into a grounded power outlet.
6. Do not switch on power to the instrument at this point, power needs to be off for subsequent installation of USB devices in the following steps.

WARNING

Damage to electronics



Before powering ON the instrument, make sure that the correct supply voltage is used.

Use of incorrect supply voltage may damage the electronics.

To check the recommended supply voltage, refer to the specifications indicated in the type plate of the instrument.

WARNING

Electrical hazard



Any interruption of the protective conductor (earth/ground lead) inside or outside the instrument or disconnection of the protective conductor terminal is likely to make the instrument dangerous.

Intentional interruption is prohibited.

Lethal voltages inside the instrument

When the instrument is connected to line power, terminals may be live and opening covers or removing parts is likely to expose live parts.

4.8. Installation of the external barcode scanner (optional)

1. Remove the barcode scanner from the box.
2. Before powering on the instrument, connect the barcode scanner to any one of the three USB ports located on the front of the instrument.

WARNING

Risk of personal injury



Hazard Level 2 laser light: Do not stare into the light beam when using handheld barcode scanner.

4.9. Installation of the Wi-Fi adaptor (optional)

Before using a Wi-Fi adaptor, please ensure it's fully compliant with the radio equipment regulations applicable to your country or territory.

Note: The Wi-Fi adaptor is supplied with the connectivity package in certain regions. If supplied, the following steps should be performed to correctly install the Wi-Fi adaptor.

1. Remove the Wi-Fi adaptor from the packaging.
2. Before turning on the instrument, plug the Wi-Fi adaptor into one of the three USB ports located on the front of the instrument (see Figure 2I).

Note: Do not remove the Wi-Fi adaptor while scanning for Wi-Fi networks to avoid issues, for example.

3. Connect the instrument to the Wi-Fi. See Section 5.1.8 on how to add a Wi-Fi in the software.

4.10. Packaging and transportation of the QIASprint Connect

WARNING

Risk of personal injury



The QIASprint Connect is too heavy to be lifted by one person. To avoid personal injury or damage to the instrument, do not lift the instrument alone. Use the handle attached to the box to lift the QIASprint Connect. After the QIASprint Connect has been unpacked, two people must lift the instrument. Lift the instrument by placing your hands underneath the bottom of the instrument.

1. Before transporting the QIASprint Connect, the instrument must be decontaminated (Section Maintenance Procedures).
2. Use the wizards in the software to remove the following:
 - Magnet heads (Section 5.11)
 - Thermal adaptor (Section 5.12)
 - Magnet head guard (Section 5.13)
3. Power down the instrument and open the cover of the heater-cooler by moving it to the left by hand.
4. Install the transport locks as described in Section 4.6, in reverse.
5. Pack the instrument and accessories as described in Section 4.6, in reverse.

5. Operating Procedures

Before proceeding, we recommend that you familiarize yourself with the features of the instrument by referring to Section 3.

The hood of the QIAAsprint Connect must remain closed and locks automatically during operation of the instrument. The robotic handling and processing systems move during the operation of the QIAAsprint Connect, sometimes with considerable speed. Never try to open the QIAAsprint Connect hood while the instrument is operating, unless instructed to do so by the instrument software during manual interactions in a protocol run.

CAUTION



Damage to the instrument

Only use QIAGEN disposables with the QIAAsprint Connect. Damage caused by use of other types of flow cell or consumable will void your warranty.

CAUTION



Risk of material damage

Avoid moving the workbench and causing vibrations to the QIAAsprint Connect during operation to prevent disturbing sensitive optical measurements.

WARNING



Moving parts

To avoid contact with moving parts during the operation of the QIAAsprint Connect, the instrument must be operated with the hood closed.

If the hood sensor or lock is not functioning correctly, contact QIAGEN Technical Support.

WARNING



Moving parts

Avoid contact with moving parts during operation of the QIAAsprint Connect. Under no circumstances should hands be placed under the processing unit during movement. Do not attempt to remove any plasticware from the workdeck while the instrument is operating.

WARNING



Risk of personal injury and material damage

Do not attempt to move the QIAAsprint Connect during operation.

WARNING/ CAUTION



Risk of personal injury and material damage

Improper use of the QIAAsprint Connect may cause personal injuries or damage to the instrument. The QIAAsprint Connect must only be operated by qualified personnel who have been appropriately trained. Servicing of the QIAAsprint Connect instrument must only be performed by a QIAGEN Field Service Specialist.

CAUTION



Damage to the instrument

Avoid spilling water or chemicals onto the QIAAsprint Connect. Instrument damage caused by water or chemical spillage will void your warranty.

WARNING



Risk of fire or explosion

When using ethanol or ethanol-based liquids on the QIAAsprint Connect, handle such liquids carefully and in accordance with the required safety regulations. If liquid has been spilled, wipe it off and leave the QIAAsprint Connect hood open to allow flammable vapors to disperse.

WARNING**Risk of explosion**

The QIAAsprint Connect is intended for use with reagents and substances supplied with QIAGEN kits as outlined in respective instructions for use. Use of other reagents and substances may lead to fire or explosion.

CAUTION**Damage to the instrument**

Ensure that the QIAAsprint Connect is switched off before you manually move the mechanical components of the instrument.

CAUTION**Damage to the instrument**

Do not lean against the instrument or touchscreen.

WARNING**Samples containing infectious agents**

Some samples used with QIAAsprint Connect may contain infectious agents. Handle such samples with the greatest of care and in accordance with the required safety regulations.

Always wear safety glasses, gloves, and a lab coat.

The responsible body (for example, a laboratory manager) must take the necessary precautions to ensure that the surrounding workplace is safe, and that the instrument operators are suitably trained and not exposed to hazardous levels of infectious agents as defined in the applicable Safety Data Sheets (SDSs) or the OSHA,* ACGIH,[†] or COSHH[‡] documents.

Venting for fumes and disposal of waste must be in accordance with all national, state, and local health and safety regulations and laws.

* OSHA — Occupational Safety and Health Organization (United States of America)

[†] ACGIH — American Conference of Government Industrial Hygienists (United States of America)

[‡] COSHH — Control of Substances Hazardous to Health (United Kingdom)

CAUTION**Hazardous materials and infectious agents**

The waste contains samples and reagents. This waste may contain toxic or infectious material and must be disposed of properly. Refer to your local safety regulations for proper disposal procedures.

WARNING**Hot surface**

The heating system can reach temperatures of up to 95°C (203°F). Avoid touching it when it is hot, in particular, shortly after a run has been carried out.

WARNING**UV radiation**

Avoid looking directly into UV light. Do not expose your skin to UV light.

WARNING**Risk of personal injury**

Hazard Level 2 laser light: Do not stare into the light beam when using handheld barcode scanner.

5.1. Use of the QIASprint Connect instrument software

5.1.1. Initial log in and configuration

Following the boot sequence, the log-in screen is displayed.

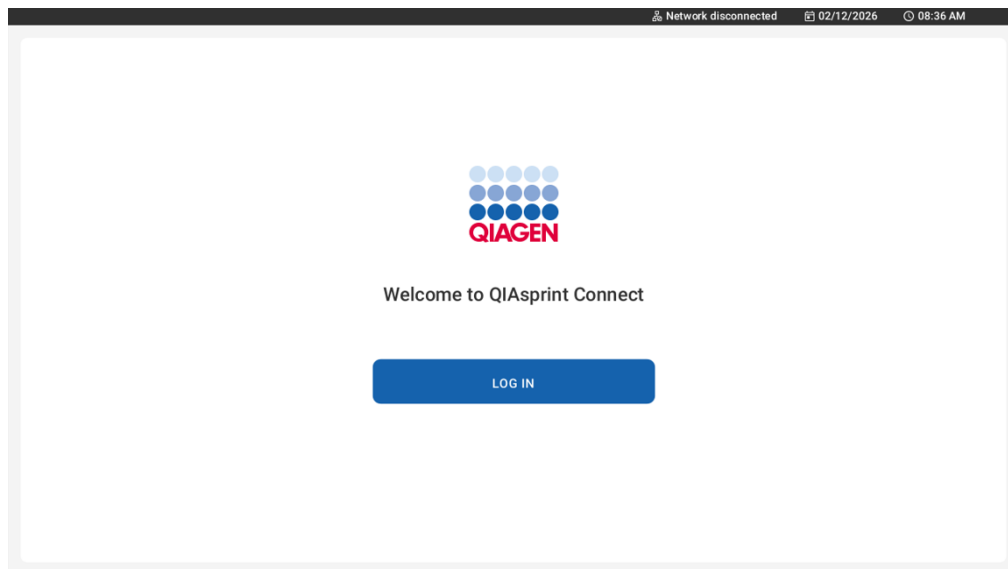


Figure 18. Start-up screen with Log In button.

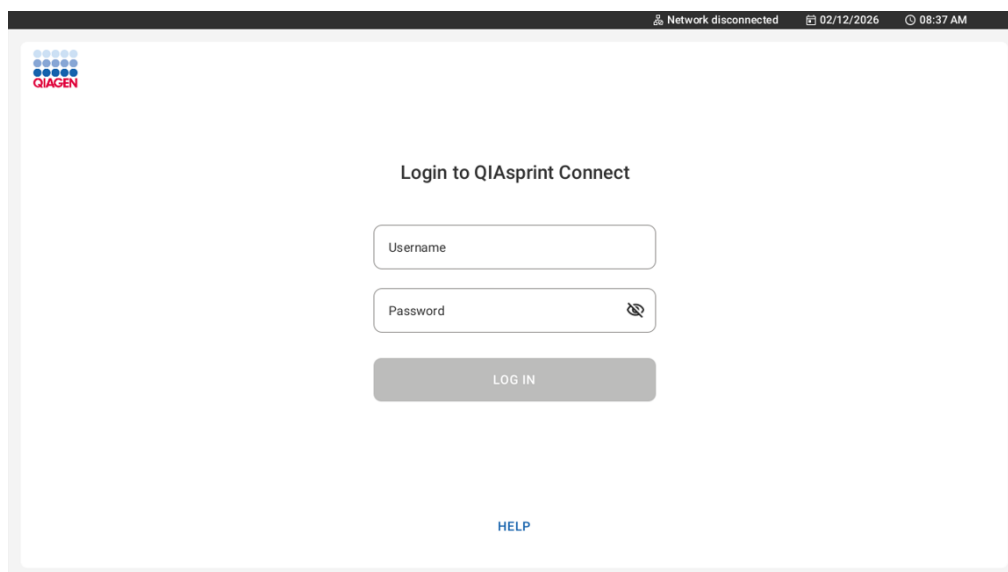


Figure 19. The log-in screen.

Press one of the input fields to bring up the on-screen keyboard and enter the credentials. Upon first start of the instrument, the default admin access credentials are as follows:

Username: admin

Password: admin

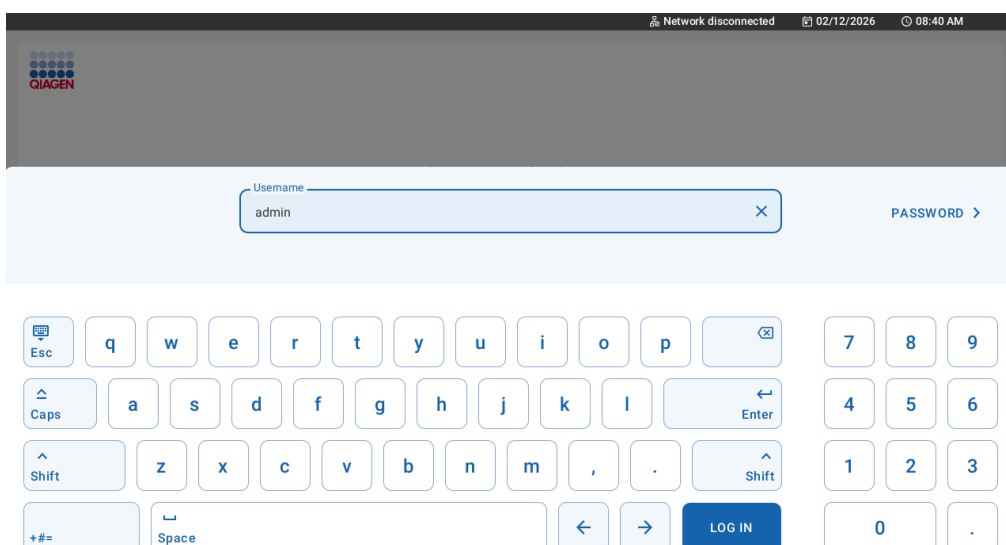


Figure 20. The on-screen keyboard to enter the user credentials.

Enter the username “admin” and press **PASSWORD>** or the **Enter** button to enter the password “admin” and press **LOG IN**.

Password requirements: minimum of 8 characters; at least one out of each set: (a–z), (A–Z), (0–9), and (special characters).

After receiving the instrument, it is recommended to add a second admin account to avoid being locked out of the system. Create a backup administrator account by navigating to **Configuration** menu, then pressing the **Users** button, and entering the password again to open the users management menu. Press the **Add new user** button to add a new user (see Section 5.1.3). Create a new account with the administrator privileges and take note of the credentials. This account can be used to access the instrument in case the administrator credentials are lost.

It is recommended to change the default password of the administrator account (See Section 5.1.3, Change the password of the currently logged in user).

If all administrator account credentials have been lost, contact QIAGEN Technical Services for assistance generating a one-time log in that allows access to the **Configuration** menu. This requires a service code and the instrument serial number. Press **HELP** on the log-in screen to access both.

5.1.2. The on-screen keyboard

When selecting an input field, the on-screen keyboard is automatically displayed (Figure 21).

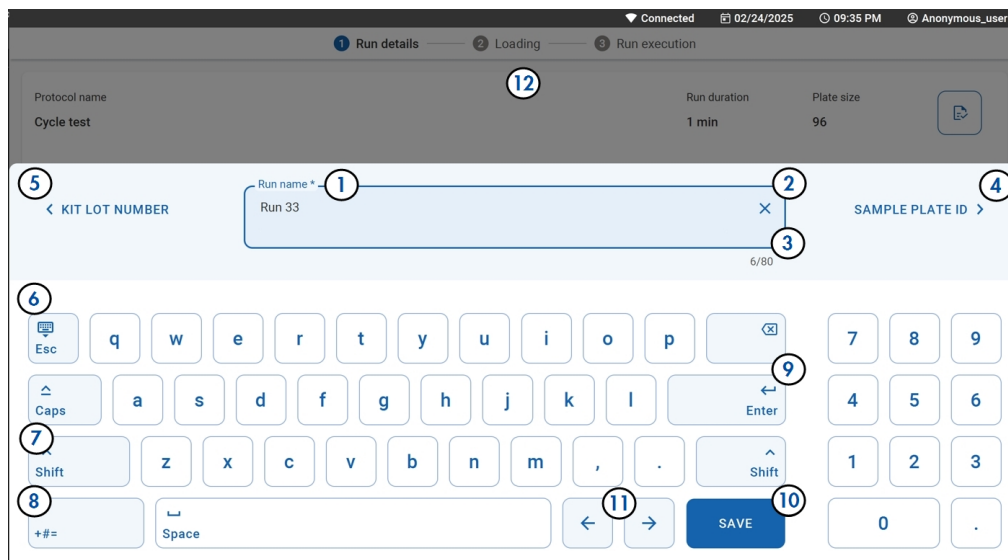


Figure 21. The on-screen keyboard.

The on-screen keyboard has a number of special components to facilitate data entry and navigation:

1. The input field
Asterisk denotes a required field. If any validation rule is violated, the field frame is colored red and a helper text below the field states the validation rule.
2. The **delete field contents** button
3. The number of (maximum) characters
4. The **<name of the next input field>** button
Pressing this button saves the current value and moves the selection to the next field.
5. The **<name of the previous input field>** button
Pressing this button saves the current value and moves the selection to the next field.
6. The **Esc** button
Pressing this button closes the on-screen keyboard without saving the changes in the input field.
7. The **Shift** button
Pressing this button switches between upper and lower case letters or between different pages of special characters.
8. The **special characters** button
9. The **Enter** button
Pressing this button saves the current value in the input field and switches to the next field if applicable.

10. The **SAVE** button

Pressing this button saves the input value and performs a context-dependent action (such as submitting the log-in form or saving the value and closing the on-screen keyboard).

11. The **move cursor** buttons for moving the input field cursor left or right

12. The off-screen area

Pressing this area closes the on-screen keyboard without saving the changes in the input field.

5.1.3. User management

The user management menu (Figure 22) can be accessed in the **Configuration** menu, press the **Users** button. Before the user management menu is accessible the admin user has to enter the password again.

Note: After receiving the instrument, it is recommended to add a second admin account to avoid being locked out of the system.

Password requirements: minimum of 8 characters; at least one out of each set: (a–z), (A–Z), (0–9), and (special characters).

Change the password of the currently logged in user

1. Navigate to the Configuration menu, press the icon  in the top right corner of the display, and select **Account settings** and enter the current password.
2. Select the **Set new password** button, enter a new password and save the changes.

Add a new user

1. Navigate to the **Configuration** menu, press the **Users** button, and enter the password of the currently logged in user to access the users menu.
2. Select the **+ADD NEW USER** button.
3. Enter a user name, select the user role, and assign a password to the new user.
Do not forget to give the username and password to the user.
4. Press **CREATE ACCOUNT** button to save the changes.

The new user needs to set a new password after the first log in as described in “Change the password of the currently logged in user” section.

Search for a user

1. Navigate to the **Configuration** menu, press the **Users** button and enter the password of the currently logged in user to access the users menu.
2. Enter a user name or select the role and status of the user in the drop-down menus.

Unlock a locked user

If a limit is set to the log in attempts, an admin user can unlock a locked user.

1. Navigate to the **Configuration** menu, press the **Users** button, and enter the password of the currently logged in user to access the users menu.
2. Go to the **More options** menu of the locked user, and select **Edit**.
3. Select the **Set new password** button, enter a new password and save the changes.

The new user needs to set a new password after the first log in as described in “Change the password of the currently logged in user” section.

If all administrator account credentials have been lost, contact QIAGEN Technical Support for assistance generating a one-time log in that allows access to the Configuration menu. This requires a service code and the instrument serial number. Press **HELP** on the log-in screen to access both.

Overview of User roles

User role	Function
Basic Operator	Can perform runs
Advanced Operator	Can perform runs Can edit, create, and import protocols
Administrator	Can perform runs Can edit, create, and import protocols Has access to the Configuration menu to manage users, change instrument settings, and connection settings

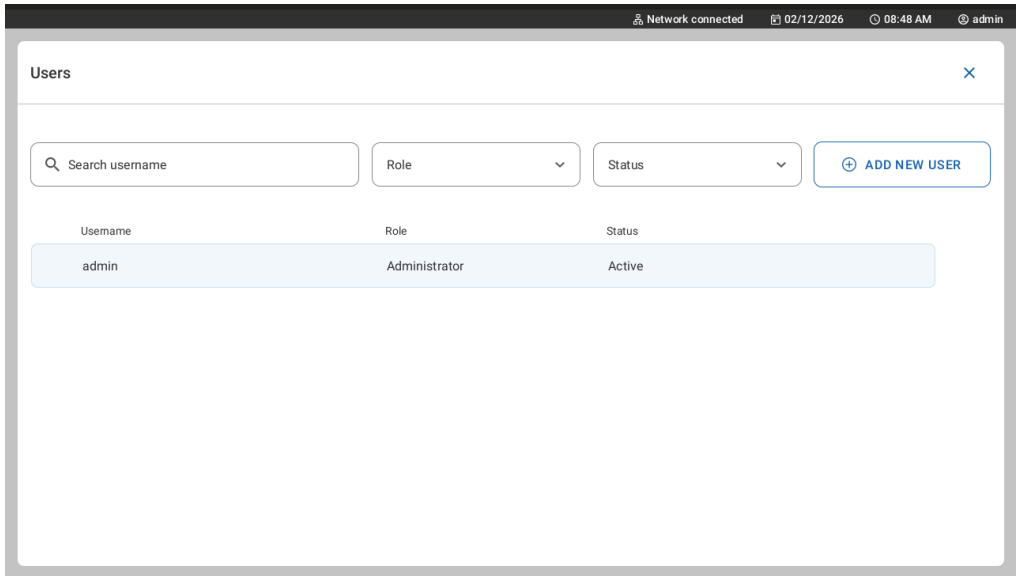


Figure 22. The Users management menu.

5.1.4. Status bar

Most screens show the status bar of the instrument.



Figure 23. The status bar.

It contains information about:

- The currently logged-in user
- System date and time
- Network connectivity status
- QIAsphere connectivity status

5.1.5. The Home menu

After passing the log-in screen, the home menu is shown (Figure 24).

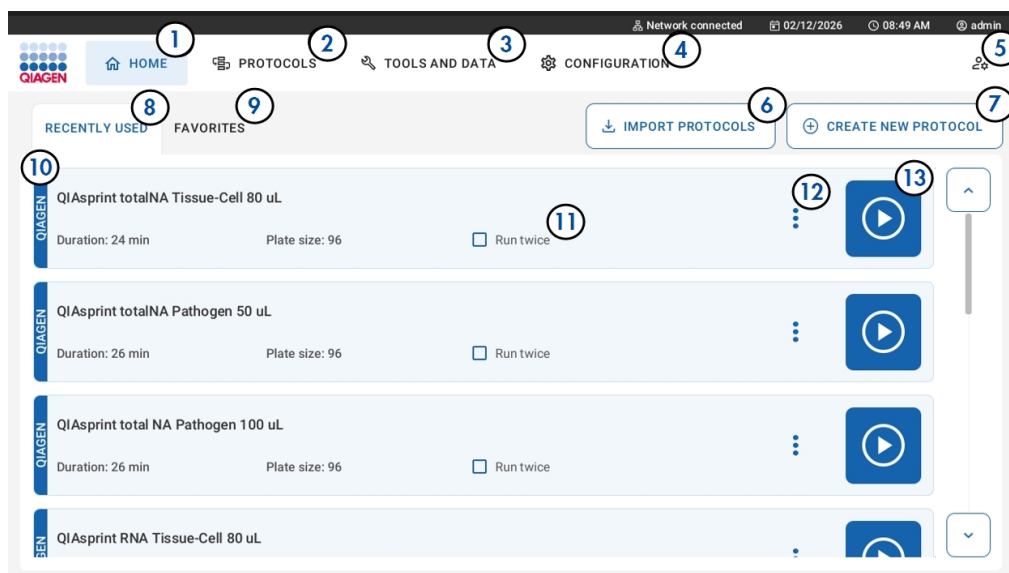


Figure 24. The Home menu.

The Home menu contains buttons to access the following (Figure 24):

1. The **Home** menu from other menus
2. The **Protocols** menu (Section 5.1.6)
3. The **Tools and Data** menu (Section 5.1.7)
4. The **Configuration** menu (Section 5.1.8)
5. The User menu for logging out the current user and accessing the account settings
6. The **Import Protocols** menu, to import protocols from a USB device

7. The **Create New Protocol** menu, to create a new protocol
8. The **Recently used** tab, which shows protocols that were recently run, edited, or imported
9. The **FAVORITES** tab, which displays protocols that were marked as favorites by the user
10. The protocol properties card, which lists:
 - Protocol name
 - Protocol run duration
 - Plate size
 - QIAGEN or user-defined protocol
11. The subsequent run option selector for protocols that can be run twice in a row (Section 6.3)
12. The **More protocol options** button. Options include (depending on the context):
 - **Add to Favorites / Remove from favorites**
 - **Edit protocol**
 - **Copy and edit protocol**
 - **Export protocol**
 - **Delete protocol**
13. The **Run protocol** button to start a run

5.1.6. Protocols menu

The **Protocols** menu provides tools for the filtering of installed protocols and for accessing protocols that are not displayed on the **Home** menu.

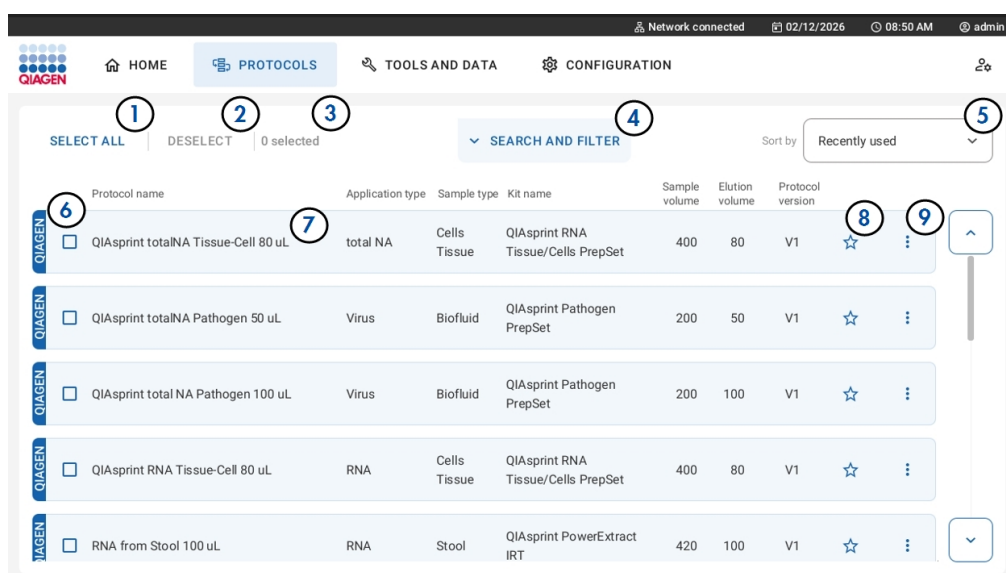


Figure 25. The Protocols menu.

The **Protocols** menu contains the following components (Figure 25):

1. **Select all** button
2. **Deselect** button
3. The selection counter

Note: If at least one protocol is selected, the bottom menu appears with the options to delete or export the selected protocols.

4. **Search and filter** button

Note: When the **Search and filter** button is pressed, the corresponding form is expanded (Figure 26).

5. The sorting options drop-down
6. The protocol selection checkbox
7. The protocol properties cards that display protocol details
8. The **(Un)favorite** button
9. The **More protocol options** button

Options include (depending on the context):

- **Edit protocol**
- **Run protocol**
- **Run protocol twice**
- **Copy and edit protocol**
- **Export protocol**
- **Delete protocol**

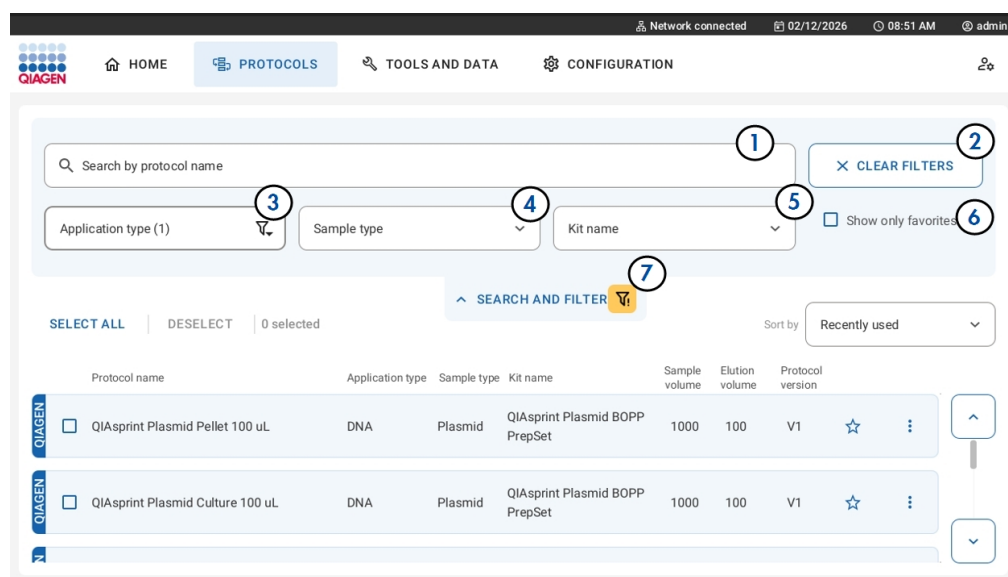


Figure 26. The Protocol search menu with expanded filter form.

The Protocol search menu contains the following components:

1. Search by protocol name (text field)
2. Clear filters
3. Select application type
4. Select sample type
5. Select kit name
6. Filter for favorites
7. An icon indicates to the user that at least one filter is applied to the protocol selection, even when the search and filter menu is closed.

5.1.7. Tools and Data menu

The **Tools and Data** menu is divided into three categories (Wizards, Data, and Updates) that provide access to the following instrument functions:

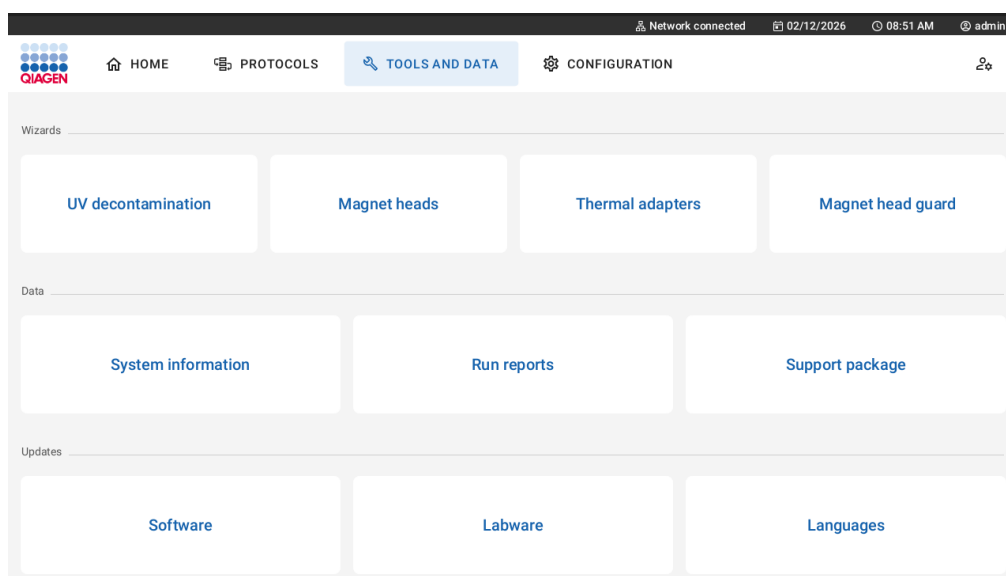


Figure 27. The Tools and Data menu.

UV decontamination (Wizard)

The UV decontamination wizard is used to trigger the automatic UV decontamination procedure (Section 5.10).

Magnet heads (Wizard)

The Magnet heads menu wizard provides a guided way to safely install or uninstall magnet heads (Section 5.11).

Thermal adaptors (Wizard)

The Thermal adaptor menu allows accessing a thermal adaptor on the heater-cooler (Section 5.12).

Magnet head guard (Wizard)

The Magnet head guard menu wizard provides a guided way to safely unload and load the magnet head guard plate (Section 5.12).

System information (Data)

The System information menu provides information on the system settings like the serial number, the software version and the labware package version.

Run reports (Data)

The Run reports menu contains a list of all run reports, they can be downloaded to a USB drive and deleted (Section 5.3).

Support package (Data)

The Support package menu the support package can be downloaded to a USB drive (Section 5.4).

Software (Update)

A software update can be installed in the Software menu in combination with a USB drive (Section 5.14).

Labware (Update)

A labware package update can be installed in the Labware menu in combination with a USB drive (Section 5.14).

Languages (Update)

A language file update can be installed in the Languages menu in combination with a USB drive (Section 5.15).

5.1.8. The Configuration menu

The **Configuration** menu (visible for administrator accounts) is divided into the three categories (**Settings**, **Connections**, and **Users**) that provide access to the following instrument functions:

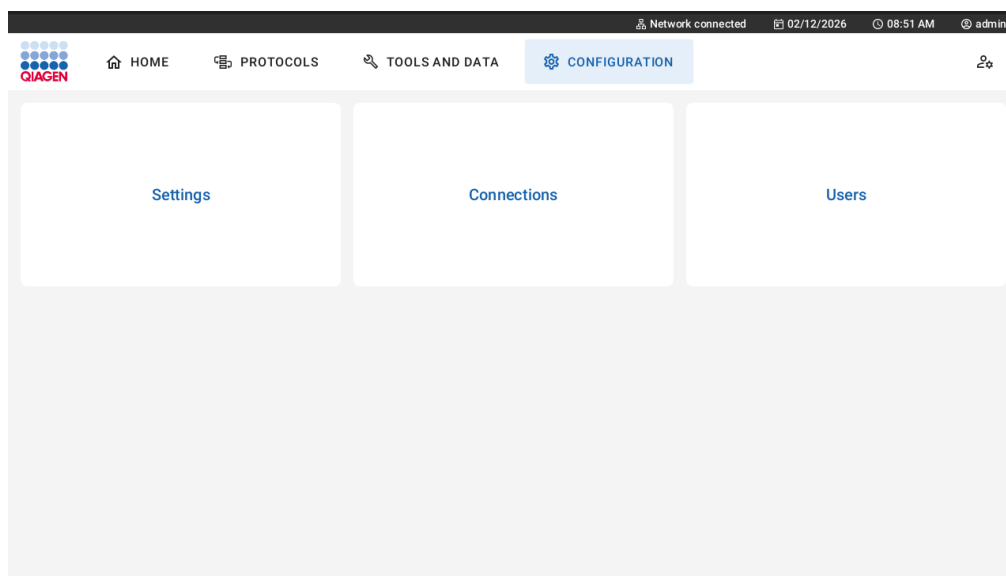


Figure 28. The Configuration menu.

Settings

The **Settings** menu contains several menus for further instrument settings like language, date and time, audio and video, and more.

1. Language

In the **Language** menu (Figure 29), select the language from the dropdown menu.

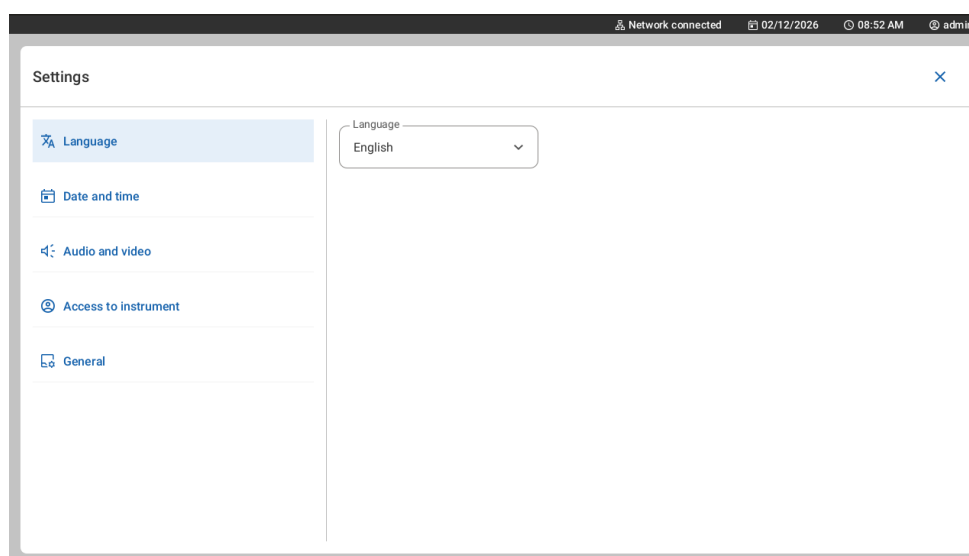


Figure 29. Settings; Language menu.

2. Date and time

In the **Date and time** menu (Figure 30), the display formats and values of the instrument date and time can be set. If the instrument is connected to QIAsphere, the date and time are synchronized automatically and only the display formats can be set.

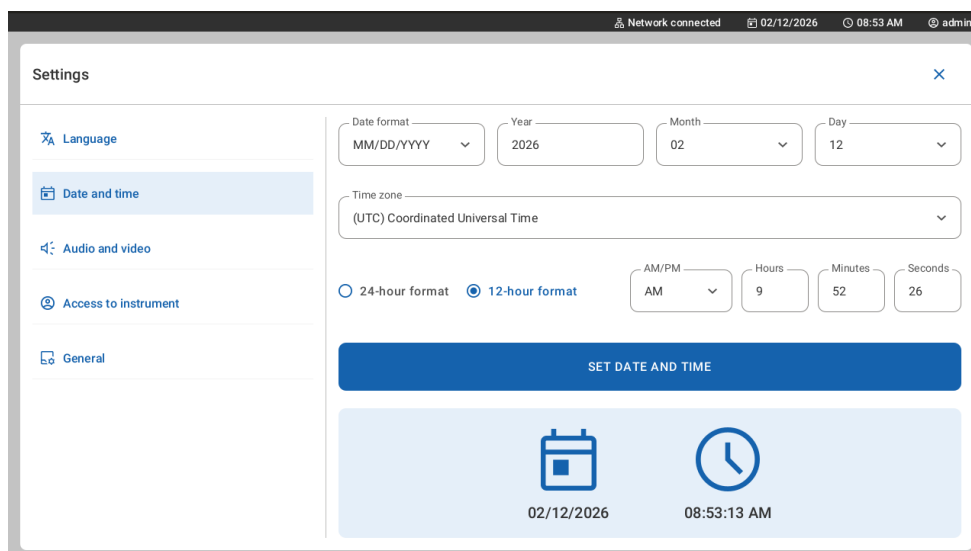


Figure 30. The Date and time menu.

3. Audio and video

In the **Audio and video** menu (The Audio and video menu.), the volume of audio cues and the brightness of the instrument touchscreen can be adjusted.

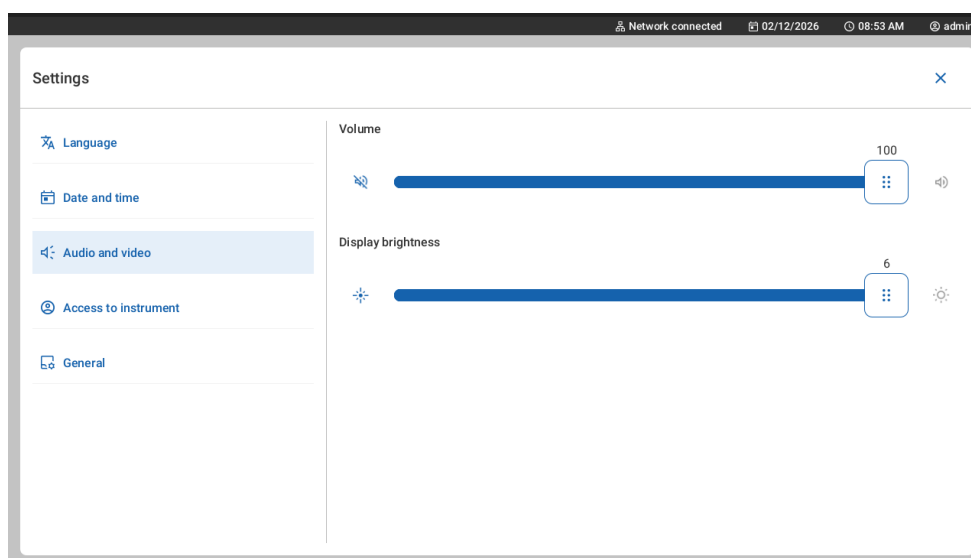


Figure 31. The Audio and video menu.

4. Access to instrument

In the **Access to instrument** menu (Figure 32), the number of attempted log ins can be restricted.

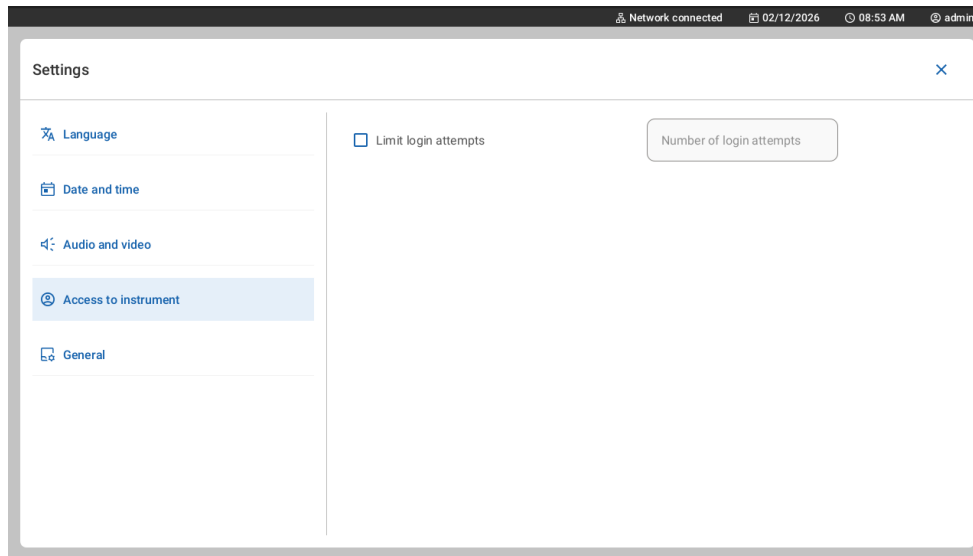


Figure 32. The Access to Instrument menu.

5. General

In the **General** menu (Figure 33), an instrument name can be entered and a custom logo for the run reports can be uploaded to the instrument by using a USB drive. The logo may have a maximum file size of up to 200 kB and must be in one of the following file formats: JPG, JPEG, PNG, BMP, or GIF.

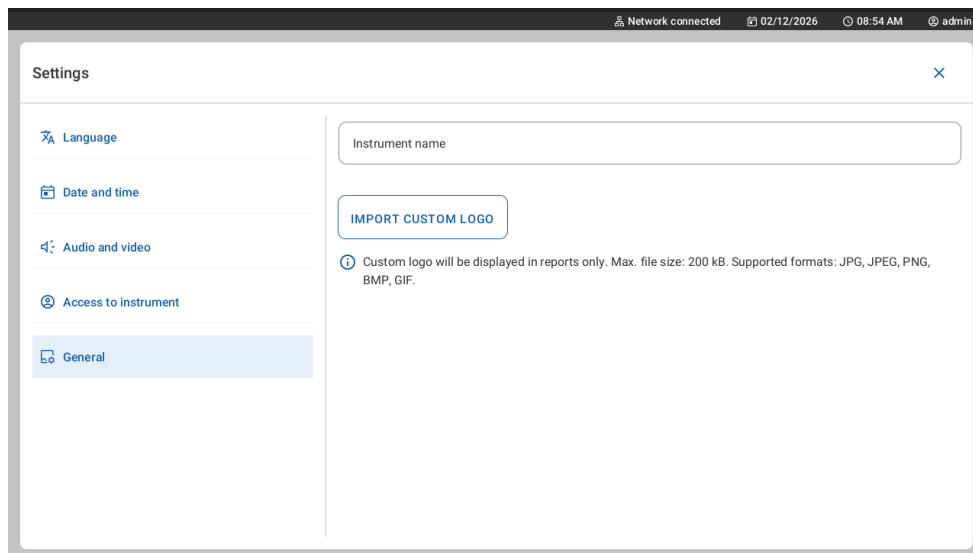


Figure 33. The General menu.

Connections

The Connections menu contains several menus for Ethernet, QIAsphere, and Wi-Fi connections.

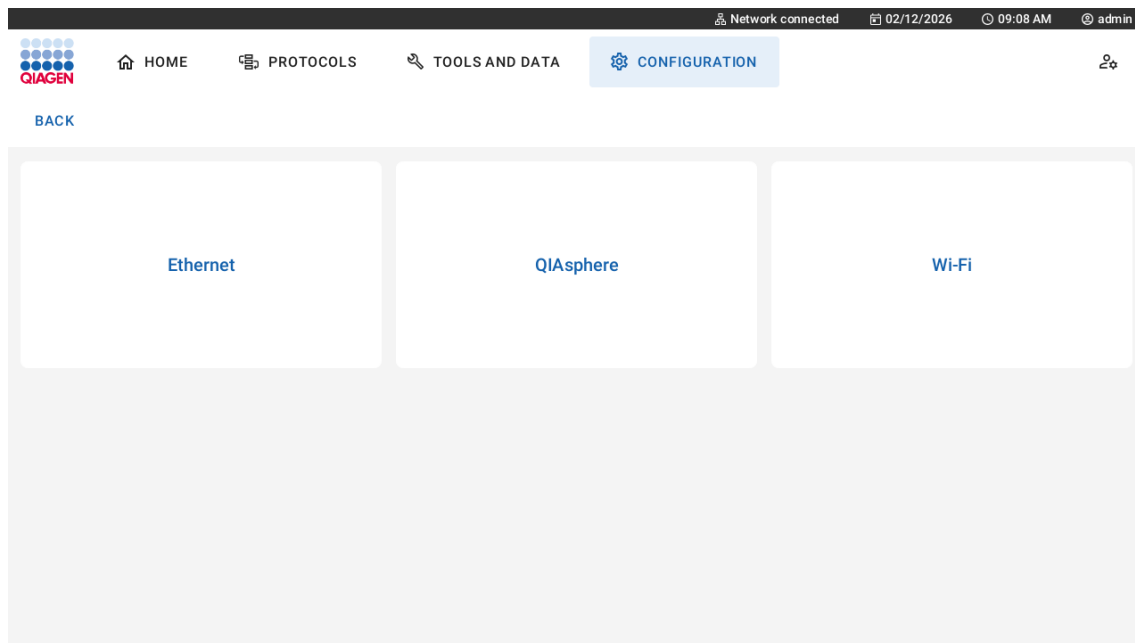


Figure 34. The Connections menu.

1. Ethernet

The **Ethernet configuration** menu allows the user to setup an Ethernet cable connection for the QIAsprint Connect (Figure 35). If the automatic detection of settings fails, the settings can be specified manually.

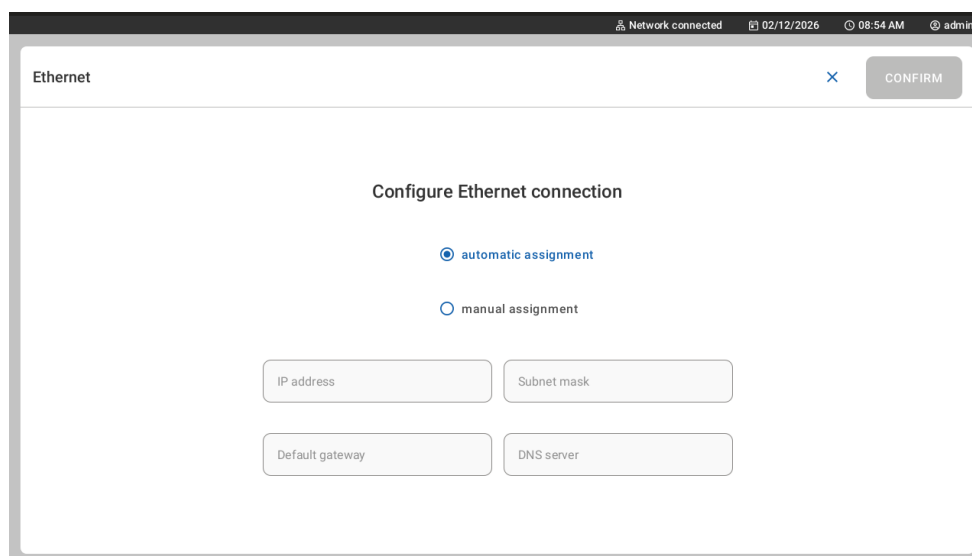


Figure 35. The Ethernet menu.

2. QIAsphere

The QIAsphere configuration dialog box allows to enter QIAsphere credentials and enable the connection.

Use **TEST CONNECTION** for troubleshooting.

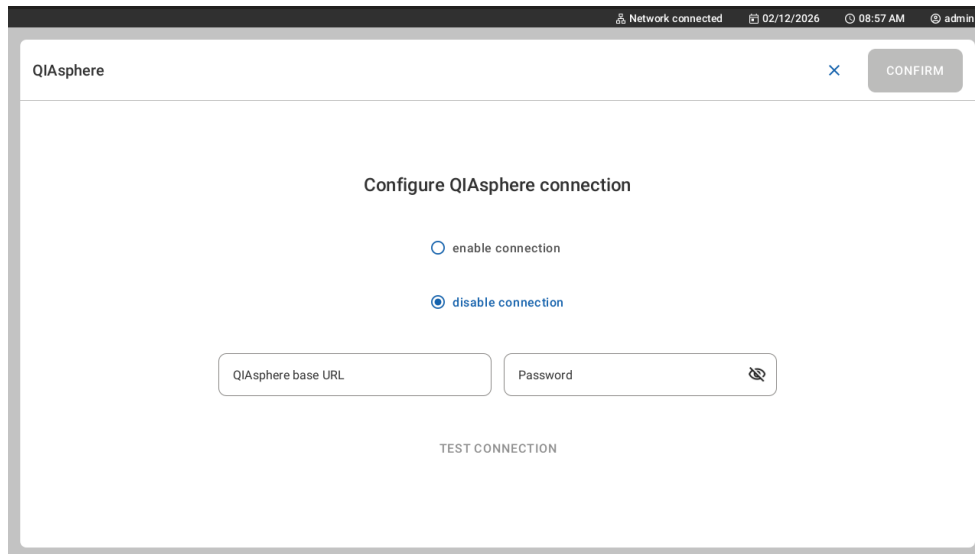


Figure 36. The QIAsphere menu.

3. Wi-Fi

The Wi-Fi dialog box allows to enable a connection to an available Wi-Fi network if a Wi-Fi dongle is attached to the instrument.

- Connect a Wi-Fi dongle to the instrument, either to one of the two USB ports on the front of the instrument or the USB port behind the display, see Figure 21.
- Select the **Connections** menu; the Wi-Fi connection dialog box opens and directly starts a scan for available Wi-Fi options.
- After the scan, a message at the top of the screen confirms that the list of Wi-Fi networks is successfully updated.
- Select the desired Wi-Fi network and press **CONNECT**.
- Enter the right password for the Wi-Fi connection and press **CONNECT**.
- A message at the top of the display confirms the connection to a Wi-Fi network, and the network name is highlighted in blue with the status **Connected** (Figure 38).

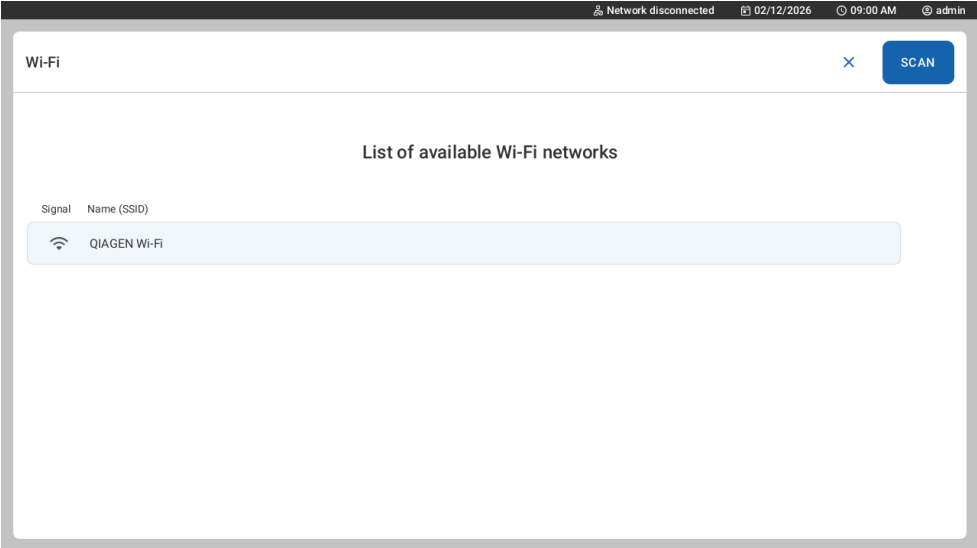


Figure 37. The Wi-Fi menu.

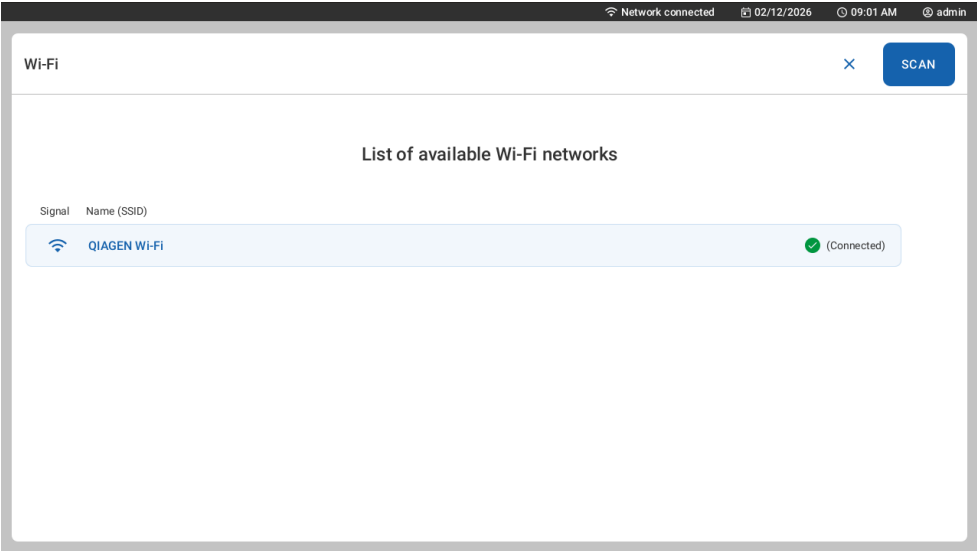


Figure 38. Wi-Fi network status.

Users

The Users menu provides a list of users and the function to search for or add a new user. The admin user has to enter their password again to get access to this menu.

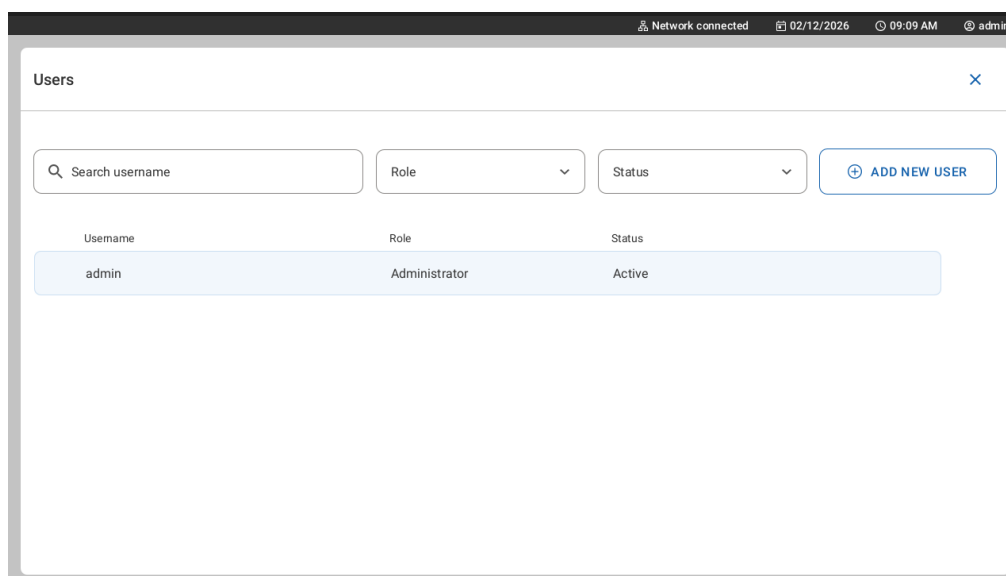


Figure 39. The users menu.

5.2. Setting up a protocol run

All available QIAGEN protocols are pre-installed on the QIAAsprint Connect upon delivery. You can download all available QIAGEN protocols from the QIAGEN website (www.qiagen.com).

5.2.1. Set up a protocol run

There are two ways to set up a protocol run.

1. Press the **Run** () button in the protocol card of the home screen (A protocol card.).

If the protocol satisfies the requirements for a two-batch run (Section 6.3), select the corresponding checkbox in the protocol card to run the protocol on both hotels and start a two batch run.

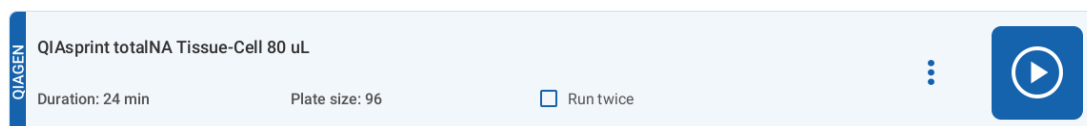


Figure 40. A protocol card.

- Go to the **Protocols** menu, and select **Run protocol** from the **More Protocols Selection**.

If the protocol satisfies the requirements for a two-batch run (Section 6.3), select **Run protocol twice** to start a two-batch run.

Press **Run protocol** or **Run protocol twice** to start a run.

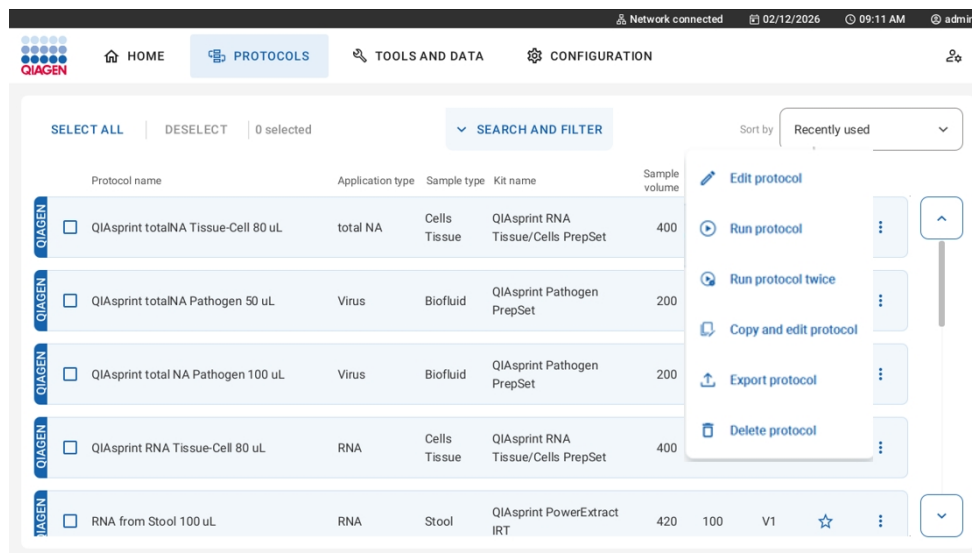


Figure 41. Protocols menu — the More Protocols Selection.

5.2.2. Enter run details

The run details screen (Figure 42) allows the user to enter information about this specific run of the protocol, which is saved in the run report. If a two-batch run was started, each batch has its own Run details screen.

Press **Confirm** after entering all run details to continue to the loading screen.

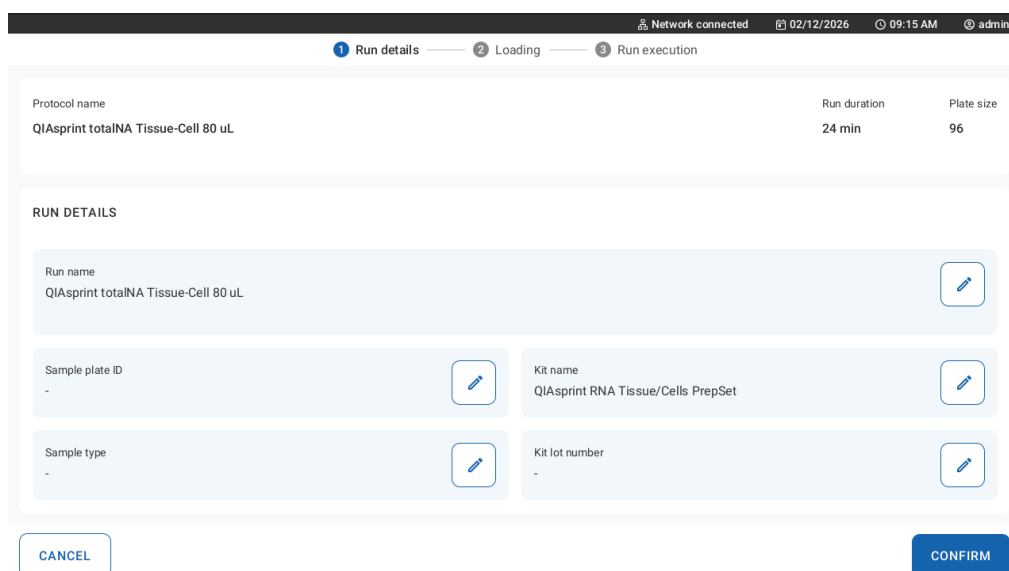


Figure 42. The Run details screen.

5.2.3. Loading the instrument and executing a run

After confirmation, the Loading screen is displayed, where the location of all disposables is depicted (Figure 43). The software determines the location based on the plate position defined in the protocol. The user cannot change the plate locations manually.

Pressing a plate displays the expected contents.

Note: Prep Plates can be prepared upfront and stored after sealing them to avoid evaporation.

Note: Do not seal the elution plate, glue remains on top of the plate can cause a failed run.

Press **Start Run** after loading the instrument according to the instructions of the loading screen on the GUI.

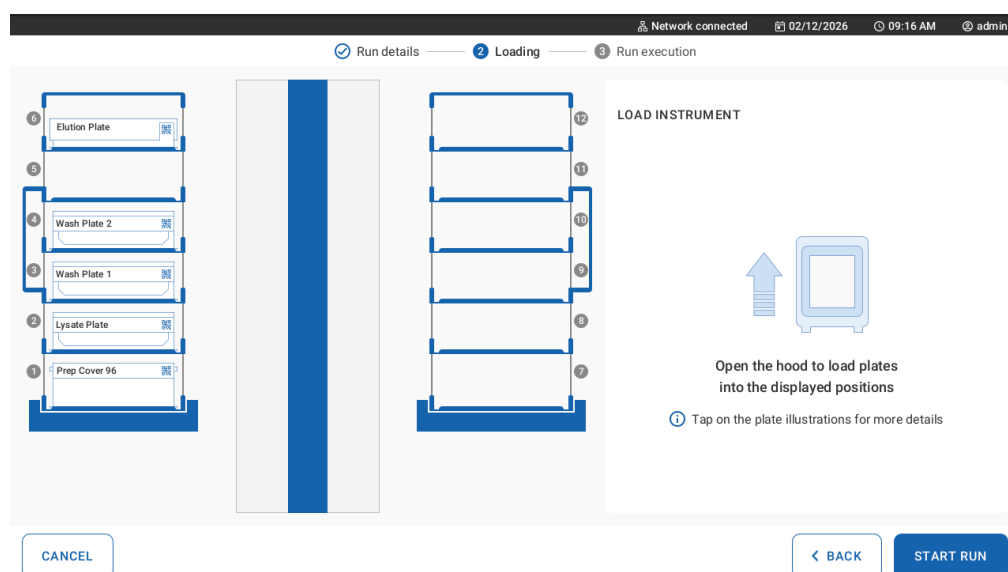


Figure 43. The Loading screen.

5.2.4. Load check

During the load check, the plate handler–attached QR-code reader attempts to verify the position of all expected disposables and thermal adaptors. If a mistake is detected, the Load check screen is displayed, pointing out errors and suggesting fixes (Figure 45). After correcting the loading mistakes, the user can choose **Retry** to repeat the load check. In the run report, a protocol run is marked as successful only after a successful load check. Alternatively, the load check can be skipped.

Note: Skipping the load check causes the instrument to assume that the hotels were loaded as expected. It is the responsibility of the user to ensure the correct loading of the instrument. A faulty loading can lead to instrument damage.

If the protocol requires a thermal adaptor, skipping the load check triggers an additional dialog box prompting the user to specify the location of the thermal adaptor.

Successful load check

If all of the disposables are loaded correctly, the load check ends successfully, and the run starts automatically. The progress is displayed on the Run screen (Figure 44).

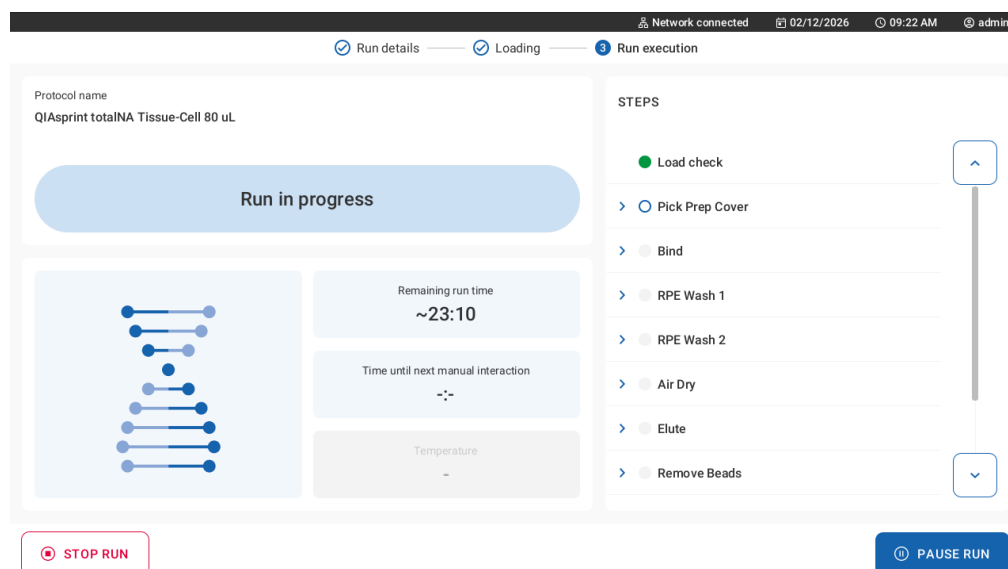


Figure 44. The run screen.

Failed load check

During the load check, the instrument checks if all Prep Plates, Prep Cover, and elution plates required for the ordered run are available by scanning the barcodes on the consumables. If something is missing, the run does not start and the display shows a loading screen indicating the missing parts.

Press **Retry**, after loading the instrument according to the instructions of the loading screen on the GUI, to start another load check and the run.

After each Prep Cover pickup, the instrument tries to confirm the successful pickup through QR-code scan. If this check fails, the instrument warns the user that the Prep Cover was not detected. The user can choose to ignore this warning.

Note: It is the responsibility of the user to confirm that the Prep Cover was picked up correctly in this case. Failure to do so can lead to instrument damage, for example, by bringing the magnets into direct contact with the reagents.

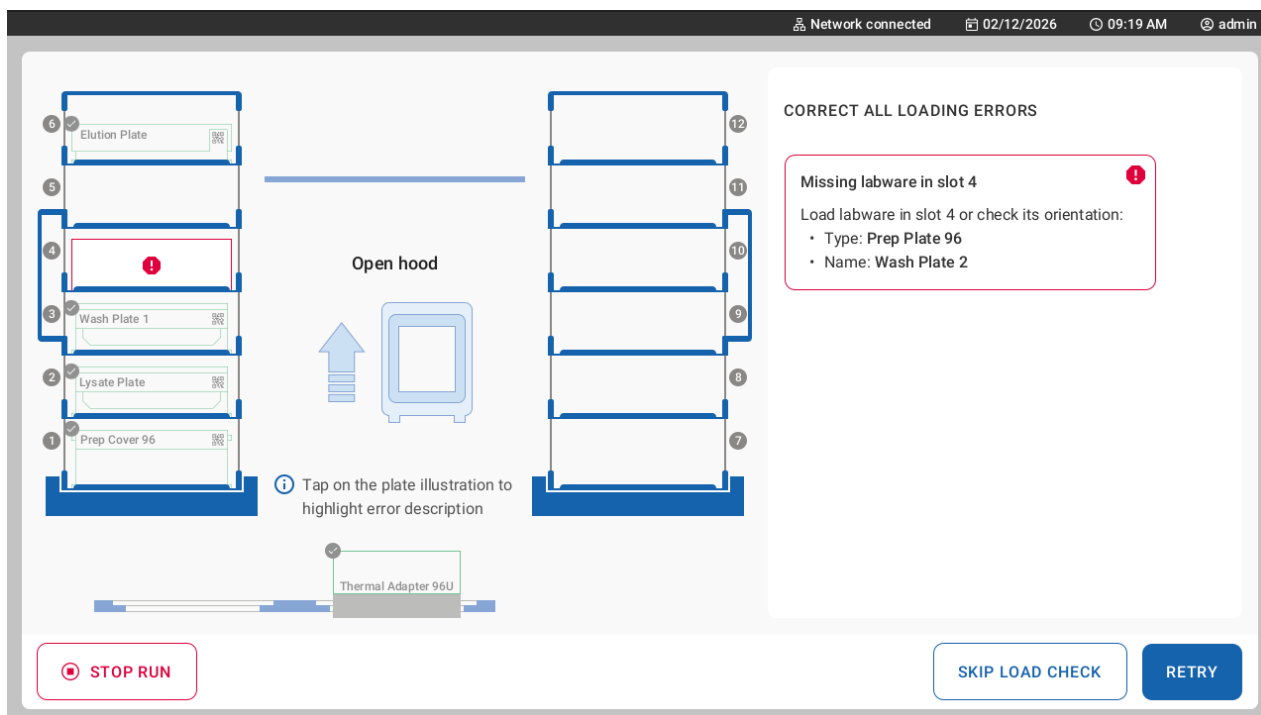


Figure 45. The load check screen.

5.2.5. End of protocol run

When the protocol has successfully finished, the Protocol run completed screen (Figure 46) is shown.

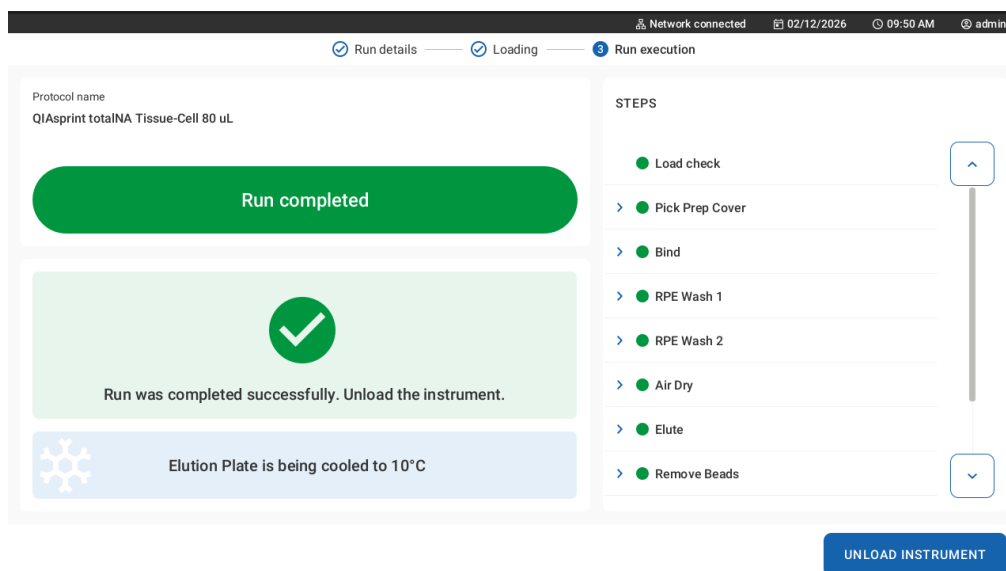


Figure 46. The end of run screen, with cooling after run active screen.

There are two end-of-run behaviors:

1. **Cooling after run active:** At the end of the run, the elution plate waits on the heater-cooler position for the user to unload the instrument. To start the unloading the instrument, press the **Unload Instrument** button. The instrument moves the elution plate from the cooling position into the hotel, and the hotels are moved into the unloading position. Open the hood and unload the hotels. Store the elution plate and dispose of the consumables according to local safety regulations. Press the **Unload Instrument** button to confirm.
2. **No cooling after run:** At the end of the run, the instrument moves the hotels to the front. Open the hood and unload the hotels. Store the elution plate and dispose of the consumables according to local safety regulations. Press the **Unload Instrument** button for confirmation.

In case of an error, an error screen is displayed.

5.3. Saving a run report

Run reports can be saved to a USB drive in the **Tools and Data** menu.

1. Go to the **Tools and Data** menu.
2. Press the **Run reports** button.
3. Select one or more run report by checking the checkbox. Afterward, confirm your selection by pressing the **Export selection** button.
 - **Note:** Report files can also be deleted after selecting the report files to be deleted and pressing the **Delete Selection** button.
 - In the Selection destination screen, the run report file can be saved directly onto the USB drive by pressing the **Export Run Report** button.
 - It is also possible to choose an existing folder (**Open Folder >**) on the USB drive or to create a new folder (**(+)** **Create Folder**) for the file to be saved to.
4. After pressing **Export Run Report**, an export in progress message is displayed until the transfer is complete. Afterward, the screen returns to the **Tools and Data** menu.

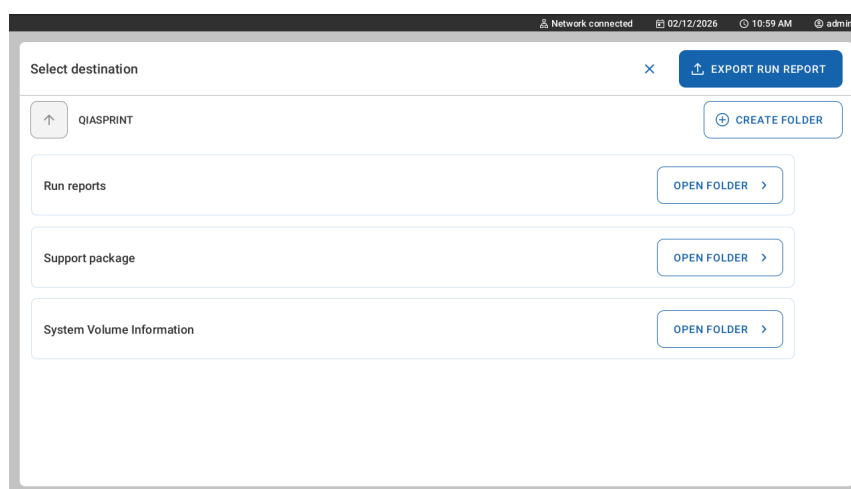


Figure 47. The export run reports to a USB drive screen.

5.4. Export a support package

Support Packages can be saved to a USB drive in the **Tools and Data** menu.

1. Go to the **Tools and Data** menu.
2. Press the **Support package** button.
3. The support package can be saved directly onto the USB drive by pressing the **Export Support Package** button. It is also possible to choose an existing folder (**Open Folder >**) on the USB drive or to create a new folder (**(+) Create Folder**) for the file to be saved to.
4. After the transfer is completed, a confirmation pop-up message is displayed.

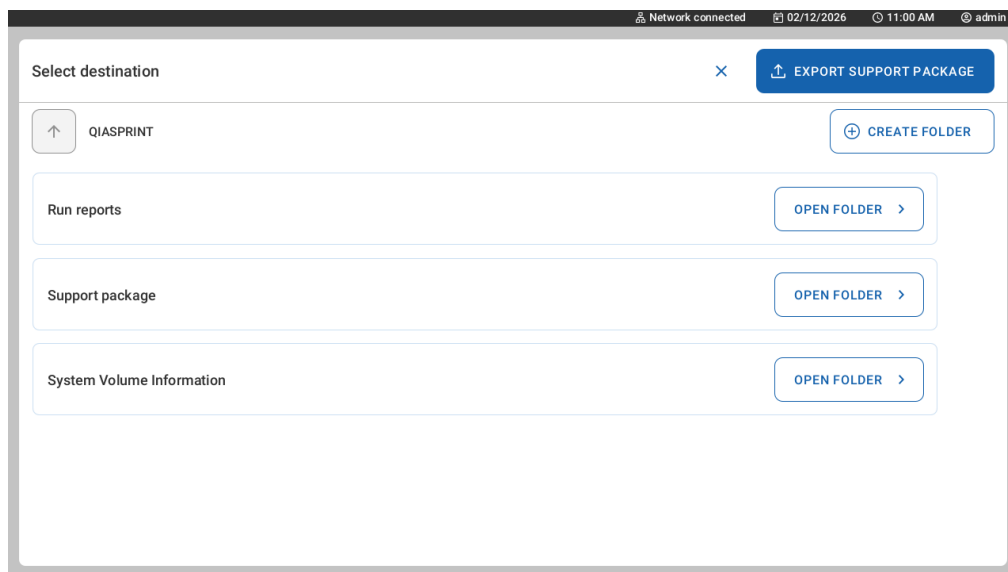


Figure 48. The export a support package to a USB drive screen.

5.5. Canceling the protocol run setup

User can cancel the protocol run setup process at any time. To cancel the setup, tap **Cancel**. Note that the progress of the run setup is not saved.

5.6. Aborting a protocol run

A protocol run can be stopped at any time. To stop the run, follow the steps below:

1. In the Protocol run in progress screen, press **Stop Run**.
2. A confirmation dialog box appears. Press **Stop Run**, to stop the run, or **Cancel** to go back to the Protocol run in progress screen.

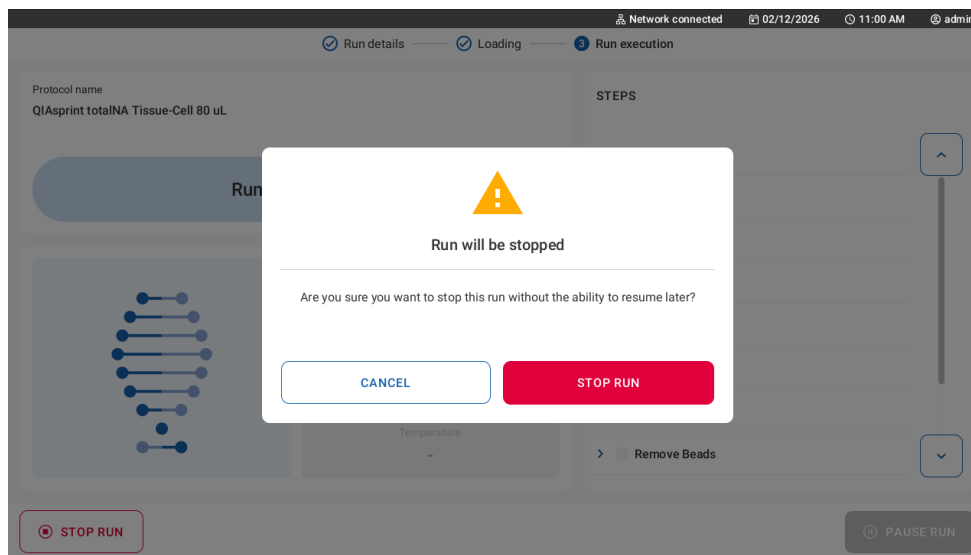


Figure 49. Aborting protocol run dialog box.

3. When the run is aborted, the instrument finishes the current movement. All consumables are moved back to the hotel.

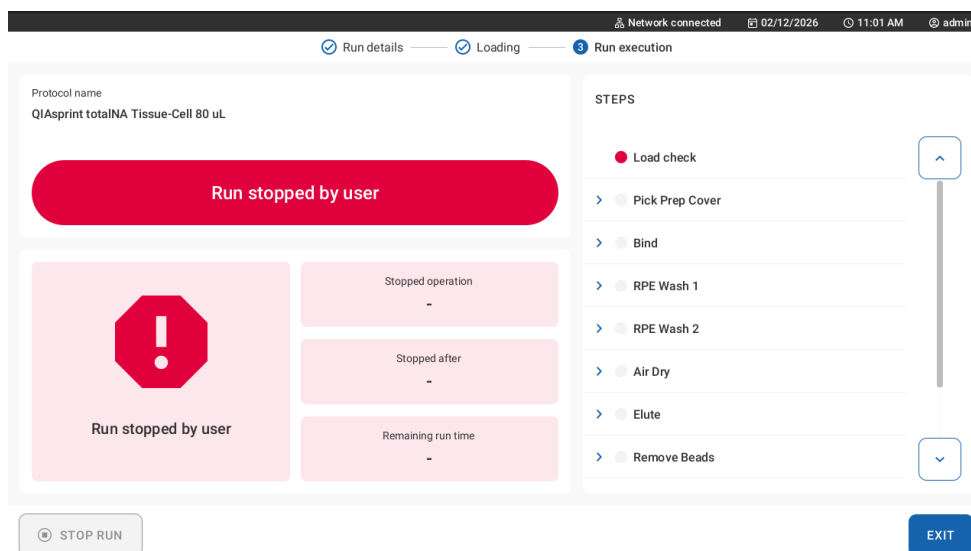


Figure 50. A stopped run screen.

4. Press **Exit** to close the dialog.

5.7. Pausing a protocol run

A protocol run can be stopped at any time. Press the **Pause Run** button. The instrument finishes the movement in progress and then pauses the protocol run.

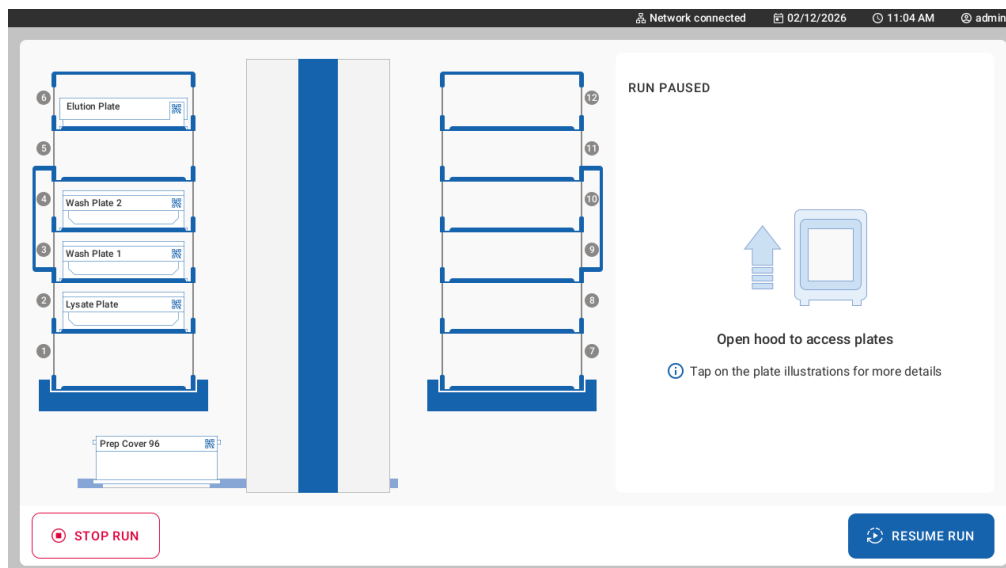


Figure 51. A paused run screen.

Either press **Resume Run** to continue the protocol (the instrument performs a load check before the protocol continues) or press **Stop Run** to completely stop the protocol run.

5.8. Manual interaction during a protocol run

If a protocol contains a manual interaction, the instrument pauses the run and waits for the manual interaction. This action is marked in the steps of the protocol (Figure 52).

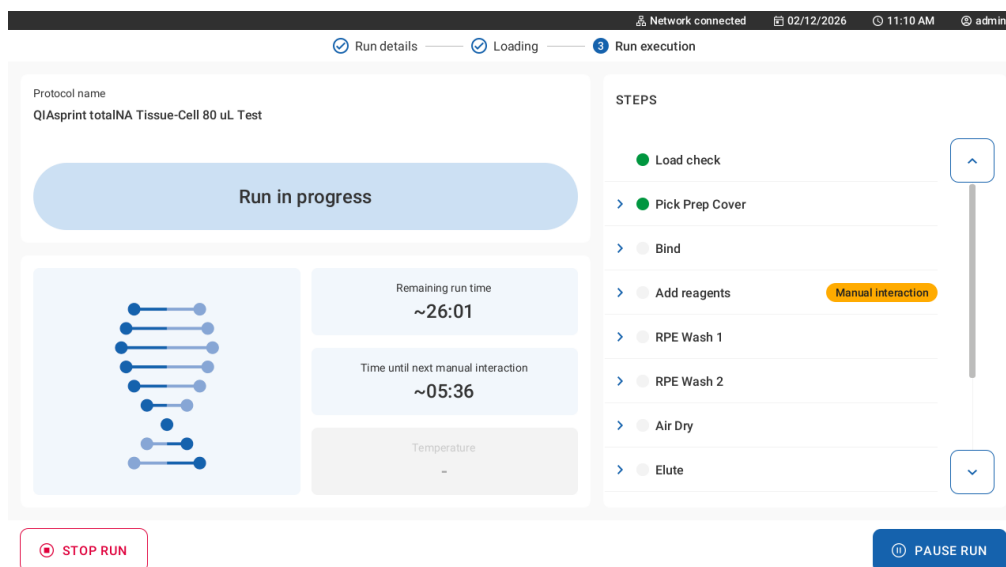


Figure 52. The run in progress screen with a manual interaction in the protocol.

When the manual interaction step is the next within the protocol run, the run pauses automatically.

1. Confirm the manual interactions message by pressing **OK**.
2. Follow the instruction of the manual interaction screen. The required action depends on the protocol (Figure 53).

Note: If the hood has not been opened the instrument assumes that the action has not been performed and prompts the user either to press the **Back To Add Reagents** button to execute the interaction or to press the **Resume Run** button to continue with the run without the manual interaction.

3. After the manual interaction has been performed, press the **Resume Run** button. The instrument performs a load check before continuing with the next step of the protocol run.

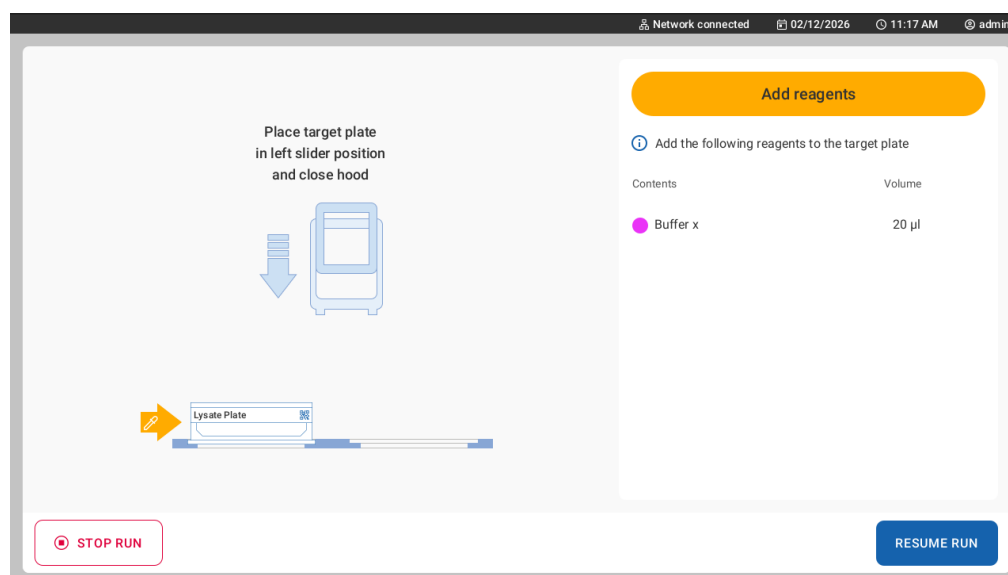


Figure 53. The manual interaction screen.

5.9. Exporting and importing protocols

Protocols can be imported and exported, for example, to view or edit on the QIAprint Connect Manager Software on PC. The import and export are done via USB drive (formatted in FAT-32 format).

5.9.1. Exporting protocols from the instrument to USB drive

Protocol files can be exported as a single file or multiple protocols can be exported together.

Export of a single protocol file

1. Connect a USB drive, to one of the USB drive ports in front of the instrument.
2. In the Home or Protocols screen, select **Export protocol** from the **More protocol option** menu of the to be exported protocol.

An overview of connected USB drives is displayed.

3. Select the USB drive, and press **Export** for the file to be saved to the USB drive.

Note: Files can be saved to any available folder on the USB drive or a new one can be created.

Export of multiple protocol file

1. Connect a USB drive to one of the USB drive ports in front of the instrument.

To export multiple protocol files, go to the Protocols screen and check the protocol selection boxes of the protocols to be exported, then press **Export selection**. An overview of connected USB drives is displayed.

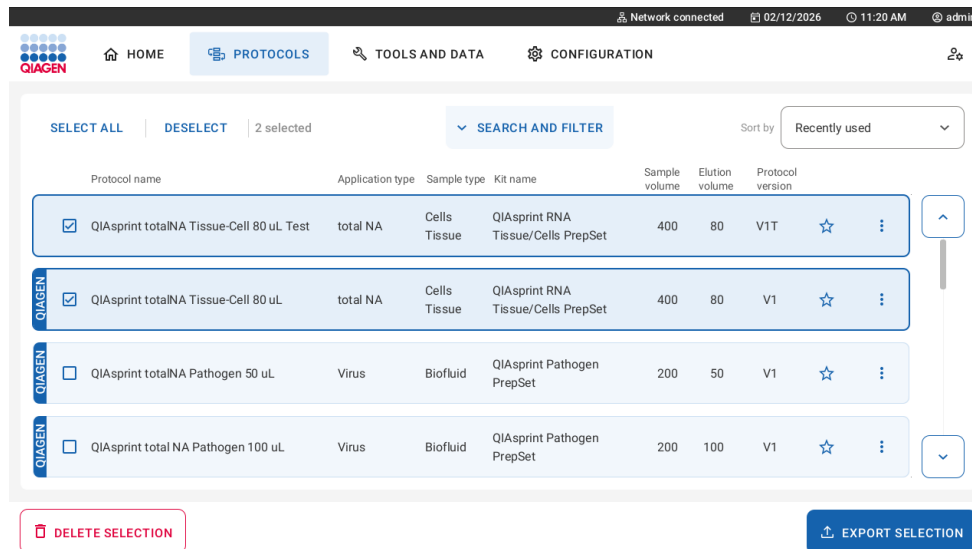


Figure 54. Select multiple protocols for an export.

2. Select the USB drive, and press **Export** for the files to be saved to the USB drive.

Note: Files can be saved to any available folder on the USB drive or a new one can be created.

5.9.2. Importing protocols from USB drive to the instrument

Protocols can be imported by pressing the **Import protocols** button in the **Home** menu.

1. Connect a USB drive, containing the protocols to be imported, to one of the USB drive ports in front of the instrument.
2. An overview of connected USB drives is displayed. Select the USB drive where the protocol should be imported.
3. Confirm the selected protocol by pressing the **Import** button to start the protocol installation.
4. A message confirms a successful upload.

For a protocol import to succeed, two conditions must be fulfilled:

- The new protocol needs to have a unique name on the instrument.
- The new protocol needs to have a unique UUID.

If a protocol is imported with a non-unique name, the instrument offers to change the name.

The UUID (Universally Unique Identifier) is an internal protocol ID that uniquely identifies a protocol. A collision of UUIDs occurs when a previously exported protocol is re-imported into the instrument (e.g., after making a change or creating a new, derived protocol from the original protocol). In this case, the instrument offers to replace the original protocol on the instrument with the imported protocol or to keep both protocols. In the latter case, the new protocol receives a new UUID.

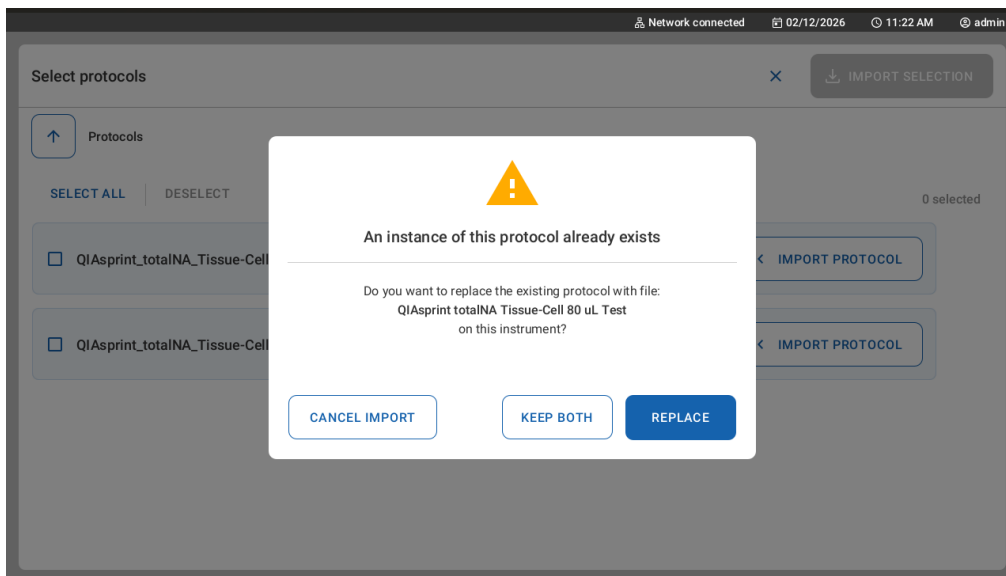


Figure 55. Dialog if a protocol with a non-unique name is imported.

5.9.3. Adding or updating QIAGEN protocols

QIAGEN protocols can be downloaded from the QIAGEN website. Extract the downloaded archive onto a FAT-32-formatted USB drive and import the desired protocols into the instrument.

The range of QIAGEN standard protocols are downloadable at no cost. See the **Resources** tab at www.qiagen.com/QIAAsprint-Connect for the protocol package.

5.9.4. Opening protocols in the QIAAsprint Connect Manager Software

Protocols located on a USB drive or in the Windows file system can be opened from the Windows Explorer by double-clicking the protocol file if the QIAAsprint Connect Manager Software has been installed previously. Alternatively, protocols can be opened from the QIAAsprint Manager Software by selecting **Open protocol**. To transfer a protocol to the instrument, save it on an FAT-32-formatted USB drive.

The QIAAsprint Connect Manager Software can be downloaded from the webpage (www.qiagen.com/QIAAsprint-Connect).

5.10. UV decontamination

WARNING

UV radiation



Avoid looking directly into UV light. Do not expose your skin to UV light.

The UV box is delivered with the instrument and can be stored on the UV box platform (Figure 6D) within the instrument.

Note: If the UV box has been removed from the instrument, make sure to reposition the UV box onto the UV box platform before starting the UV decontamination wizard.

1. Before starting the UV decontamination, remove all hotels and disposables from the instrument. Perform the regular maintenance to remove visible reagent or sample contaminations (Section 7.2)
2. Close the hood.
3. To start the automatic UV decontamination procedure, go to the **Tools and Data** menu and select the **UV decontamination** wizard (Figure 56).
4. Either press **Start** to start a decontamination run with the default duration (Standard: 14 min) or select **Custom** to multiply the standard time (1–5 equals 14–65 min) with the automatically displayed keyboard, confirm with **Save**, and press **Execute** to start the UV decontamination.

Note: Contact QIAGEN Technical Support for assistance with choosing the right irradiation time for particular contaminants.

During the UV decontamination run the thermal adaptor can remain either on the thermal adaptor platform or on the heater-cooler position. In this case, the adaptor is irradiated instead of the underlying surface. Alternatively, the thermal adaptor can be decontaminated by submersion in decontaminants (Section 7.2.1). Refer to Section 5.12 if the thermal adaptor needs to be removed from the heater-cooler.

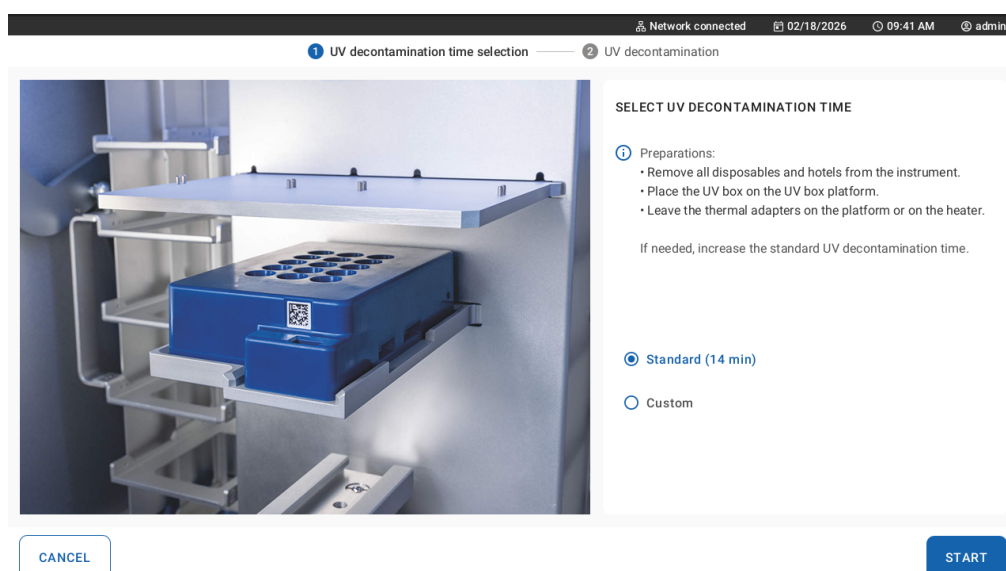


Figure 56. The UV decontamination wizard.



Figure 57. The UV box.



Figure 58. The UV box platform.

5.11. Magnet head installation and exchange

WARNING



Danger of strong magnetic fields

Strong magnetic field – Take care to avoid exposure to a strong magnetic field.

The Magnet head exchange wizard provides a way to install or remove magnet heads with minimal chance of damage to the magnet rods.

Go to the **Tools and Data** menu, and select the **Magnet heads** wizard menu. There are two positions to load, unload, or exchange a magnet head. Depending on the status for those positions, the available actions, listed below, are displayed and can be selected.

Load

For empty positions, the action **Load** is available. Press the **Load** button to start the loading wizard. Check if there are consumables still underneath the magnet head/Prep Cover holder and press confirm if the path is clear to continue with the wizard. Follow the instructions on the display to load a magnetic head.

Unload

For positions with an already loaded magnetic head one available option is the action **Unload**. Press the **Unload** button to start the loading wizard. Check if there are consumables still underneath the magnet head/Prep Cover holder and press confirm if the path is clear to continue with the wizard. Follow the instructions on the display to unload a magnetic head.

Exchange

For positions with an already loaded magnetic head one available option is the action **Exchange**. Press the **Exchange** button to start the exchanging wizard. Check if there are consumables still underneath the magnet head/Prep Cover holder and press confirm if the path is clear to continue with the wizard. Follow the instructions on the display to exchange a magnetic head.

Note: Avoid touching the magnet rods or collisions of the rods with any surfaces to prevent magnet head damage.

Note: Screws should be screwed in hand tight.

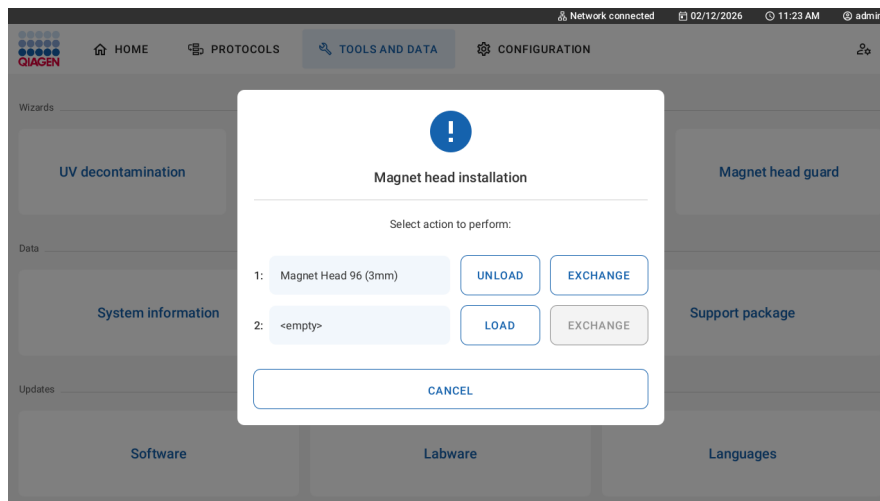


Figure 59. Magnet head exchange wizard menu.

5.12. Thermal adaptor placement

WARNING

Hot surface



The heating system can reach temperatures of up to 95°C (203°F). Avoid touching it when it is hot, in particular, shortly after a run has been carried out.

Thermal adaptors can be located at three places within the instrument:

- The heater-cooler
- The thermal adaptor platform left slot (A thermal adaptor in the right slot of the thermal adaptor platform.)
- The thermal adaptor platform right slot

Load the thermal adaptor

To load a thermal adaptor, place it onto the pins in the right position of the thermal adaptor platform. The instrument locates the thermal adaptor before a protocol run and automatically load the needed adaptor onto the heater-cooler position.



Figure 60. A thermal adaptor in the right slot of the thermal adaptor platform.

Remove thermal adaptor

If the thermal adaptor needs to be removed from the instrument to clean it, go to the **Tools and Data** menu and select the Thermal adaptors wizard menu. The instrument extends the heater-cooler. Push in the four silver metal parts of the thermal adaptor at the same time and lift to remove the adaptor from the heater-cooler. After removing the thermal adapter confirm this by pressing Done to finish the wizard.

5.13. Magnet head guard

The QIAprint Connect is equipped with a magnet head guard that is deployed automatically when the instrument exchanges plates below the Prep Cover. The tray of the magnet head guard can be removed for cleaning and decontamination.

Load/unload the Magnet head guard

To load or unload the magnet head guard, go to the **Tools and Data** menu and select the **Magnet head guard** wizard menu.

After starting the wizard, the instrument extends the magnet head guard. To load the magnet head guard plate, push it into the holder, in the back of the instrument underneath the processing unit, until a click is heard and the tray is fastened securely. To unload the magnet head guard plate, pull on the plate to detach it from the holder.

Press **Done** after loading or unloading the magnet head guard plate.

Note: The current status of the magnet head guard plate is visible in the wizard.

Refer to Section 7.2.1 for decontamination instructions.

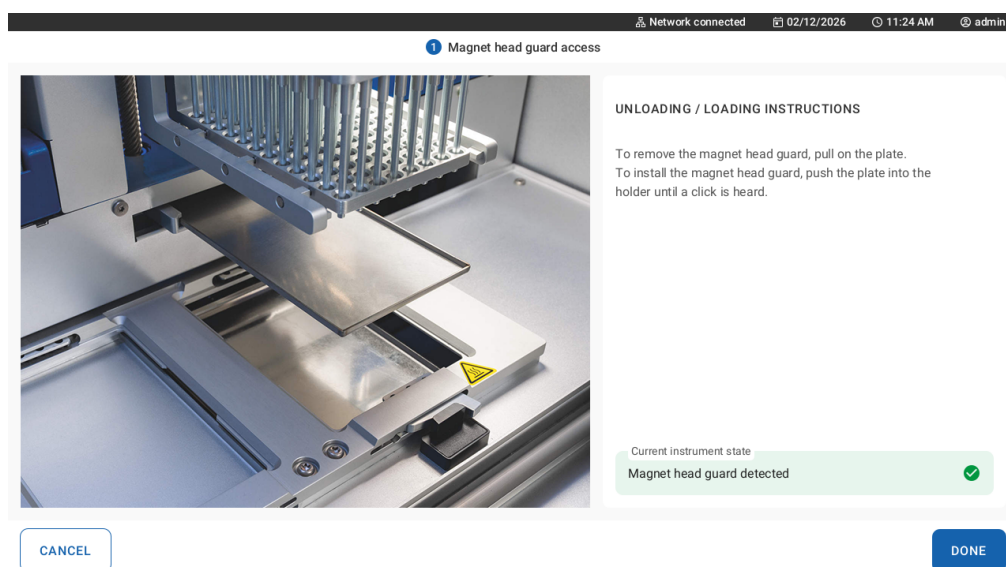


Figure 61. Magnet head guard wizard.

5.14. Software update

Note: Only administrators can update the software.

Note: System configuration is only available to users with Administrator role.

Note: To ensure that your QIAsprint Connect has the latest software versions installed, please visit the QIAsprint Connect webpage at www.qiagen.com/QIAsprint-Connect. The currently installed software version can be found in the **System information** menu within the **Tools and Data** menu tab.

Important: Use only the USB drive provided by QIAGEN. Do not connect other USB drive devices to USB ports.

Important: Use only QIAsprint Connect–related files downloaded from www.qiagen.com or provided by QIAGEN Technical Support.

Note: Checksum confirmation is required to secure software integrity after web download was successfully completed and before subsequent handling of the software. For detailed information on confirmation of software integrity during download and file transfer, check the “QIAGEN software integrity verification process” description document, which is provided next to the software package on the QIAGEN webpage. The checksum provided on the download page is the checksum of the zip package. Ensure to perform the checksum comparison before unzipping.

Important: Do not remove the USB drive while downloading or transferring data or software to or from the instrument.

If an updated software version is available for download, it can be accessed at www.qiagen.com/QIAsprint-Connect; see the **Resources** tab. The download creates a zip file.

The software can only be updated by users assigned with the Administrator role. It is recommended to download all run reports before updating the software and to create a support package.

1. Save the downloaded ZIP file to a USB drive and extract the ZIP file there.
2. Create a support package according to Section 5.4.
3. Go to the **Tools and Data** menu tab and select the **Software** button.
4. Select the software installation file from the correct USB drive and folder and press the **IMPORT FILE** button.
5. A pop-up message, containing information of the current and the new software version, is displayed. Press **INSTALL** to start the installation.
6. After the installation of the software a restart of the instrument is required. A pop-up message displays this information, press the **RESTART** button to restart the instrument.
7. After the restart and the log in a pop-up message is displayed to inform about the successful software update. Press **OK** to close the message.

Note: System configuration is only available to users with Administrator role.

Important: Use only the USB drive provided by QIAGEN. Do not connect other USB drive devices to USB ports.

Important: Use only QIAsprint Connect–related files downloaded from www.qiagen.com or provided by QIAGEN Technical Support.

If an updated labware package version is available for download, it can be accessed at www.qiagen.com/QIASprint-Connect; see the Resources tab. The download creates a ZIP file.

1. Save the downloaded ZIP file to a USB drive and extract the ZIP file to the USB drive.
2. Go to the **Tools and Data** menu tab and select the **Labware** button.
3. Select the labware installation file from the correct USB drive and folder and press the **IMPORT FILE** button.
4. A drop-down message is displayed stating that the labware file package has been imported.

5.15. Language file update

Note: System configuration is only available to users with Administrator role.

Important: Use only the USB drive provided by QIAGEN. Do not connect other USB drive devices to USB ports.

Important: Use only QIASprint Connect–related files downloaded from www.qiagen.com or provided by QIAGEN Technical Services.

If an updated language package version is available for download, it can be accessed at www.qiagen.com/QIASprint-Connect (see the **Resources** tab). The download creates a ZIP file.

1. Save the downloaded ZIP file to a USB drive and extract the ZIP file there.
2. Go to the **Tools and Data** menu tab and select the Languages button.
3. Select the language installation file from the correct USB drive and folder and press the **IMPORT FILE** button.
4. A drop-down message is displayed stating that the language file package has been imported.

6. The QIASprint Connect Protocol Editor

The QIASprint Connect protocol editor is part of the instrument software. It is used to create or edit protocols. Protocols provided by QIAGEN cannot be edited, but copies can be created and modified.

Alternatively, protocols can be created or edited with the QIASprint Connect Manager Software on a separate PC.

Use the protocol editor within the instrument software

To create a new protocol, go to the **Home** menu and press the **Create new protocol** button to start creating a new protocol.

To edit a protocol go to the **Protocol card** of the to be edited protocol and press **Edit protocol** in the **More protocol option** menu, either in the Home screen or in the **Protocols** menu.

Use the QIASprint Connect Manager Software on a PC

To create a new protocol, open the software on your computer and select the **Create new protocol** button to start creating a new protocol.

To create a new protocol, open the software on your computer and select the **Open protocol** button to start creating a new protocol.

6.1. Protocol Info screen

The screenshot shows the 'Protocol Info' screen in the QIASprint Connect software. The interface includes a top bar with 'Network connected', date '02/12/2026', time '11:25 AM', and user 'admin'. Below the bar are tabs for 'PROTOCOL INFO' and 'STEPS & PLATES', with 'PROTOCOL INFO' selected. On the right are 'CLOSE' and 'SAVE' buttons. The main form area contains several fields, each numbered for reference:

- 1. Protocol name (text input)
- 2. ☒ Generate protocol name from items below (checkbox)
- 3. Application type (dropdown menu)
- 4. Sample type (dropdown menu)
- 5. Kit name (text input)
- 6. Sample volume (text input with unit 'µl')
- 7. Elution volume (text input with unit 'µl')
- 8. Version (text input)
- 9. Description (text area)

Figure 62. The Protocol Info screen.

The Protocol Info screen (Figure 62) is used to save searchable protocol properties for the protocol search and create the protocol file name.

1. The Protocol name is generated automatically from the data entered in the other fields.
2. If the protocol name should not be generated automatically, uncheck the “Generate protocol name from items below” checkbox.
3. The Application type can be selected from the drop-down menu.
4. The Sample type can be selected from the drop-down menu.
5. The Kit name can be entered manually into the free-text field.
6. The Sample volume can be entered. It is not directly linked to the volumes in the protocol steps and may need to be updated separately if the protocol is modified by the user.
7. The Elution volume can be entered. It is not directly linked to volumes in the protocol and may need to be updated separately when the protocol is modified by the user.
8. The Protocol version can be manually entered into the free-text field.
9. The Description can be manually entered into the free-text field.

Note: All fields are optional except for the protocol name.

The QIAprint Connect Manager Software provides different options to save or close a protocol file.

Figure 63. The Protocol Info screen in the QIAprint Connect Manager Software.

1. Close the current protocol, a message reminds to save unsaved changes.
2. Save the protocol with a specific file name and location.

6.2. Steps and plates

6.2.1. Terminology

The protocol editor uses a number of special terms to define a protocol.

Consumable	Displayed in the left column of the protocol. Defines the type of disposable (Prep Cover or plate, Section 3.4) and the contents of the plates.
Step	Displayed in the right column of the protocol. Groups a set of operations into logical units representing a step in the process (e.g., bind, wash, and elute).
Operation	Displayed as components of a step. Defines instrument instructions for the processing of a plate.
Manual step	A planned interaction of the user with the instrument as part of the protocol (Add reagents or pause with custom instructions).

6.2.2. Defining Prep Covers

Creating a new protocol

The first action after starting to create a new protocol is the definition of a Prep Cover type (Figure 64). The Prep Cover choice determines the compatible magnet and plates.

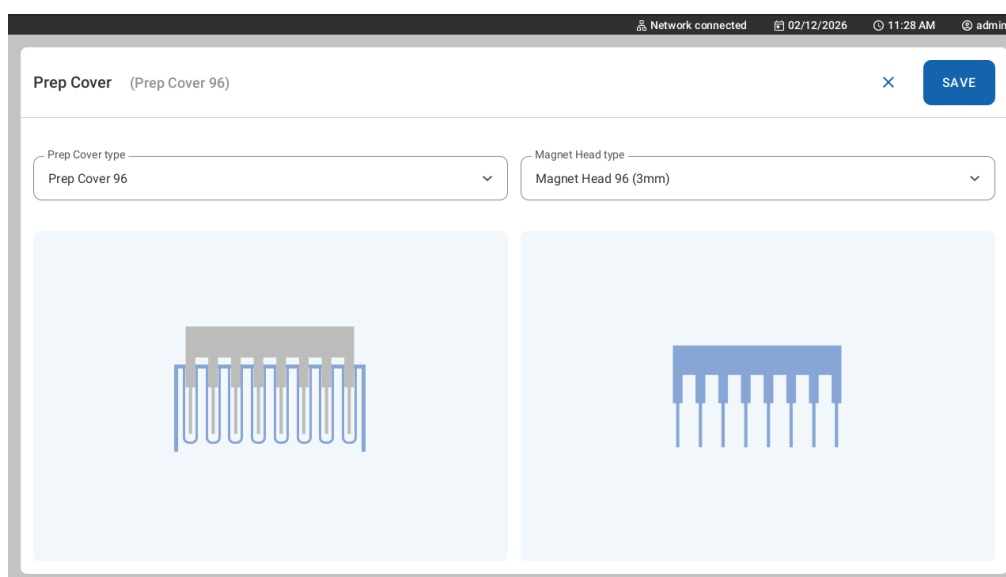


Figure 64. The Prep Cover dialog.

Once the Prep Cover is defined, the editor automatically adds the “Pick Prep Cover” and “Drop Prep Cover” steps (Figure 64). New steps can be inserted between these. The QIAAsprint Connect instrument can use up to two Prep Covers in one protocol. The **(+) PREP COVER** button is used to add a second Prep Cover. Steps added between its pickup and drop-off steps are performed with the second Prep Cover.

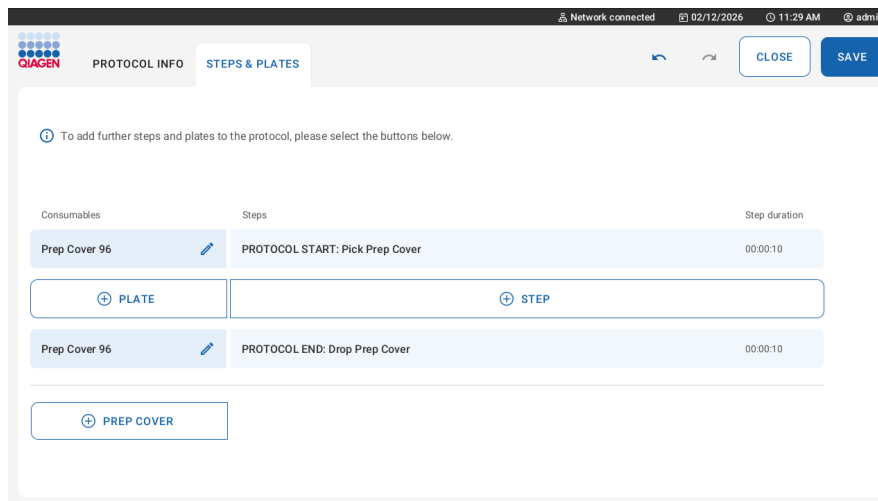


Figure 65. The protocol screen after addition of the first Prep Cover.

Editing a protocol

For an existing protocol the Prep Cover can be edited by pressing the **Edit** button next the name of the existing Prep Cover.

6.2.3. Defining the consumables

Consumables can be defined in the **Steps & Plates** tab, to the left side of the screen. The consumables are listed and can be changed, deleted, or added.

Creating a new protocol

After at least one Prep Cover defined, the plates and their contents can be defined with the **(+) PLATE** button. Select the plate type to open the Plate dialog (Figure 66).

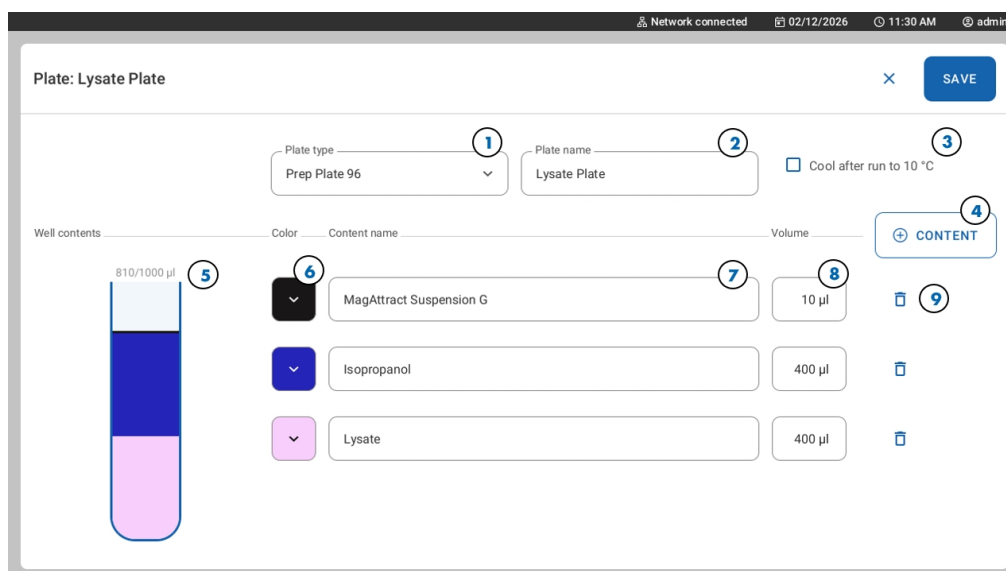


Figure 66. The Plate dialog.

1. The Plate type is preselected by selecting the plate but is editable by a drop-down menu.

Note: The Plate type determines the kind of disposable used in the step and is checked by the load check feature of the instrument. In the case of an elution plate, the user has to define if a lid is used or not.

2. The Plate name is preselected by selecting the plate but can be edited.
3. The “Cool after run to 10°C” checkbox prompts the instrument to place the plate on the heater-cooler after the run and keep it cooled until the user ends the run. Only one plate can be cooled after the run. This setting is ignored if the protocol is run with the “Run twice for two batches” feature.
4. To add a content to the plate, press the **(+) CONTENT** button. This opens the virtual keyboard that guides through the steps of adding the name (8) and the volume (9).
5. The well contents section displays the defined liquid levels of the plate.
6. The color of the defined liquids can be edited by the drop-down menu where a color can be selected/changed.
7. The liquid name can be added and changed in this text field.
8. The liquid volume can be added and changed in this text field.
9. With the **delete** () button, added liquids can be deleted.

Editing a protocol

The consumables of a protocol are listed on the left side of the Steps & plates tab and can be edited by either pressing the **Edit** () button or the **More protocol options** () menu and select **Edit plate**. After editing the plate, press the **Save** button to save the changes.

6.2.4. Defining the steps

Protocol steps can be defined in the **Steps & Plates** tab, to the right side of the screen. The protocol steps are listed and can be changed or added.

Creating a new protocol

After defining the consumables for each plate one or multiple protocol steps can be added to each plate by pressing the **(+) Add Step To Plate** button. Alternatively, the **(+) STEP** button can be used to add a step without a plate. Before running the protocol, assign this step to a plate. Select a step type to open the new step dialog. Depending on what step type has been chosen the input possibilities are different.

The screenshot shows the 'Step: Wash AW1' dialog box. At the top, there's a status bar with 'Network connected', '02/12/2026', '11:34 AM', and 'admin'. The dialog has a 'Step type' dropdown (1) set to 'Wash', a 'Step name' text field (2) with 'Wash AW1', a 'Set temperature' checkbox (3) which is checked, a 'Temperature' field (4) set to '65 °C', and a 'Preheat' checkbox (4) which is checked. Below these is an 'Operations' section with a 'Step duration' of '00:00:08' and a '+ OPERATIONS' button (5). The 'Operations' section contains two expandable items: 'Release beads' (6) and 'Mix'. 'Release beads' has a 'Mixing time' field set to '0 s', a 'Frequency' dropdown set to 'High', and a 'Position' dropdown set to 'Full'. 'Mix' has 'Minutes' and 'Seconds' fields both set to '0', a 'Frequency' dropdown set to 'High', and a 'Position' dropdown set to 'Full'. There are vertical ellipsis and up/down arrow icons next to each operation item.

Figure 67. The Step dialog.

1. The Step type that has been selected displays fitting default operations. If a custom step is selected, no default operations are added. Next to the automated steps (Lysis, Bind, Wash, Elute,...), two manual steps can be selected: Add reagents and Pause, described below.
2. The Step name is a free text field that can be edited.
3. If the "Set temperature" checkbox is checked, a keyboard is opened to define a temperature. If the checkbox is not checked, the heater-cooler stays or is retracted from the plate.
4. If the Preheat checkbox is checked, the execution of the heating step does not start until the defined temperature has been reached. Preheat also triggers the instrument to preheat/cool the heater-cooler to the set temperature before the current step has been reached in the protocol run, as long as the preheating/cooling does not interfere with other previous steps. If Preheat is not checked, the heater-cooler only starts adjusting its temperature after the start of the current step. Using preheating is recommended if the instrument should ensure that, during the whole step duration, the temperature is at the defined height. If this is not required (e.g., during longer mix operations), unchecking preheat can decrease the step duration by removing the preheating period.
5. By pressing the **(+) Operation** button more operations can be added to the step, described below.
6. In the Operations section, all actions of a step are listed and can be edited.

Editing a protocol

The Steps & Plates screen displays the contents and steps of a protocol (Figure 68). In this screen, all protocol settings can be edited and saved.

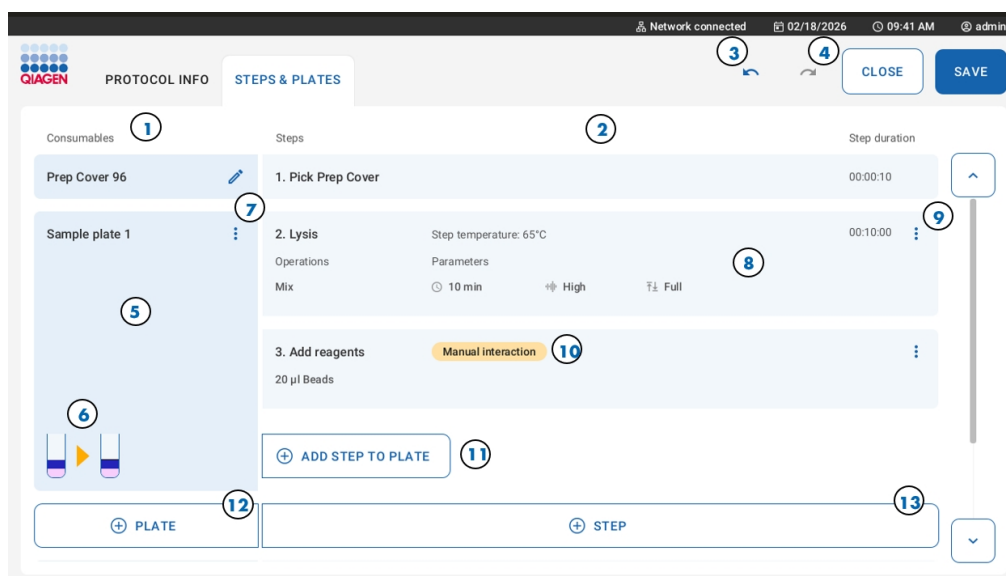


Figure 68. The Steps & Plates screen.

1. **Column for consumables:** All plates are listed to the left side.
2. **Column for steps:** All steps performed for the plate are listed to the right side.
3. The **Undo** button is used to revert an action.
4. The **Redo** button is used to restore an action.
5. The consumable card contains information about the name of the disposable and the liquid level.
6. If an **Add reagents** step is part of the protocol steps for a plate, the change of liquid level is illustrated.
7. The consumable card's **More options** () menu allows to define the disposable contents and duplicate, reorder, or delete the disposable.
8. A step card lists the operations and operation parameters, as well as the step name and temperature setting.
9. The step card's **More options** () menu allows to edit, rearrange, copy, enable/disable, and delete the step.
10. Manual steps are marked explicitly with a label.
11. Press **(+) ADD Step To Plate** to add another step to the plate.
12. Press **(+) Plate** to add another plate to the protocol. Afterward, press **(+) ADD Step To Plate** to add a step to the new plate.
13. Press **(+) Step** to add another step to the protocol. Afterward, press **(+) Define Plate** to set up a plate for this step.

6.2.5. Defining operations

Each step contains at least one operation. There are five different operations that are either already part of the selected step by default but they can also be added. The available operations and an explanation of their parameters are listed in the following sections.

Press the **(+) Operations** button (Figure 69), within the defining of a step process, to add additional operations to a step.

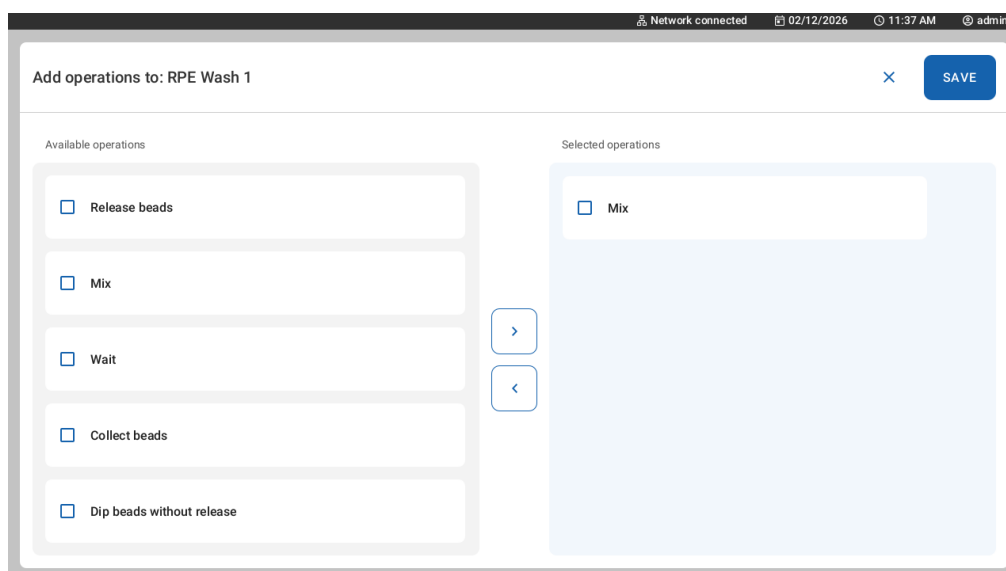


Figure 69. The Add operations dialog.

After pressing the **(+) Operations** button, a selection of the available operations is opened. Select one or multiple operations, to add them to the step, move them from the Available operations list to the Selected operations list. Press the arrow to either add  or remove  an operation.

To edit an operation of an existing step, select **Edit Step** from the **More options** menu of the step card.

Operation: Mix



Figure 70. The mix operation with a single mix line and magmixing.

Mixing operations can be defined with a range of parameters (Figure 70), which depend on the maximum mixing volume (Figure 71).

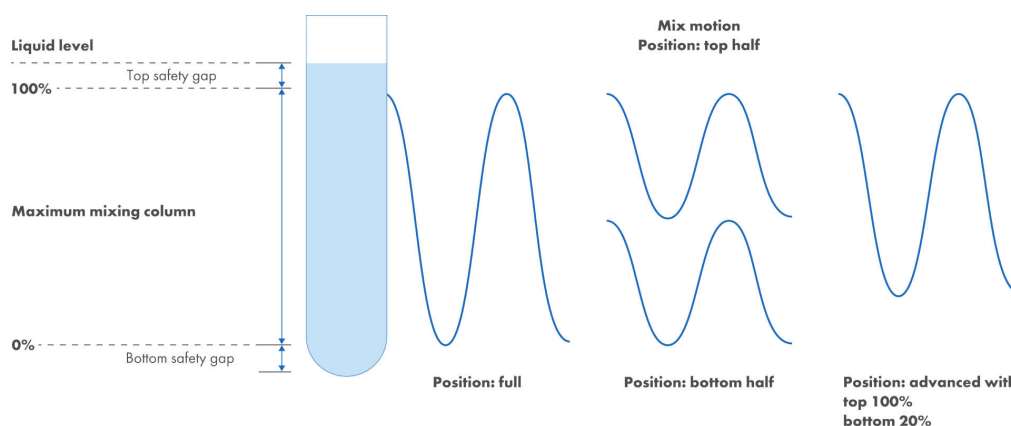


Figure 71. Calculation of the mixing column. The liquid level minus top and bottom safety gaps is used to calculate the maximum mixing column. The "Position" setting of the mix operation is used to modify the mixing column used during the operation.

Frequency indicates the mixing speed. A frequency of 1 Hz means that the Prep Cover moves through the mixing column once per second. It has three predefined settings (High, Medium, Low), which are translated into a numerical frequency by the instrument depending on the mixing column. The numerical value is adjusted automatically if the mixing column changes (e.g., when plate contents are altered).

There are two more settings (**Advanced** and **Pause**) that can be chosen as a Frequency. The **Advanced** setting can be used to set a fixed numerical frequency. In this case, the frequency picker gives an indication which frequencies are compatible with the current mixing column. If the mixing column changes, the frequency might have to be adjusted to return into the valid range.

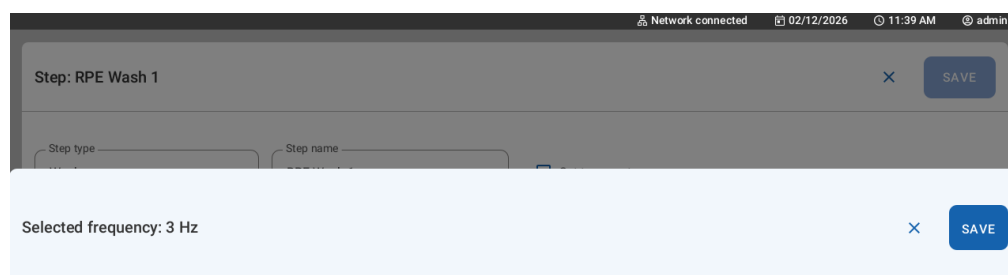


Figure 72. The Advanced Frequency settings.

The **Pause** setting can be used to stop the Prep Cover for a certain time, which is mostly useful in multiline mix operations.

The **Position** setting allows to adjust the mixing column away from the maximum mixing column. Depending on the selected **Frequency** setting the available **Position** settings can be different.

The setting “Full” uses the whole mixing column, while the settings “Top half” and “Bottom half” use the top and bottom 50% of the column, respectively (Figure 73). With the Advanced setting, the mixing column can be defined in detail with the “Top” and “Bottom” coordinates. The maximum mixing column is scaled from 0% at the bottom to 100% at the top. Irrespective of the setting, the minimum mixing column used by the instrument is always at least 1 mm.

If **Pause** is selected for the frequency, the position setting for the Prep Cover has different values:

- “Above plate” for placement a few millimeters above the plate edge
- “Above liquid” for placement a few millimeters above the liquid level
- “In liquid” for placement at 50% height of the maximum mixing column
- “Advanced” for manual specification of the height in the mixing column, with 0% being close to the well bottom and 100% close to the liquid surface

The **Add Mix** button is used to create or expand a multiline mix operation. In multiline mix operations, mix operations are alternated for the defined number of loops (Figure 73). Multiline mix operations are useful for circumventing the frequency limit in wells with high volumes, for example. If a higher mix frequency is desired, setting the mixing position to “Bottom half” increases the maximum frequency. Periodic short mixes with full position can ensure that also liquid in the upper part of the mixing column is processed.

The screenshot displays the 'Mix' configuration panel. It features two identical rows of settings for alternating mix operations. Each row contains:

- Time: 0 Minutes, 30 Seconds
- Frequency: High (first row) and Medium (second row)
- Position: Advanced
- Top: 90%
- Bottom: 5%

 Below these rows, there is a 'MAGMIXING' toggle switch, a 'Loop' counter set to 1, and an 'ADD MIX' button.

Figure 73. The mix operation with two alternating mix settings and looping.

The Magmixing setting applies to all lines of a mix operation. If active, the instrument interrupts the mix operation periodically for a short collect beads operation, which moves the beads close to the liquid surface. This setting is useful if the mix frequency has to be kept low, but the beads need to be exposed to the whole liquid column.

Operation: Wait

The screenshot displays the 'Wait' configuration panel. It contains a single row of settings:

- Time: 3 Minutes, 0 Seconds
- Position: Above plate
- MAGNETS IN: Toggled ON

Figure 74. The Wait operation.

The Wait operation (Figure 74) is used to introduce a processing pause into the protocol. The options of the Position setting correspond to the options of the position setting for the Mix operation. The Magnets in setting instructs the instrument to keep the magnets synchronized with the Prep Cover during the waiting time.

Note: The Wait operation is typically used after a Collect beads operation to dry the beads before release into the next plate.

Operation: Collect beads

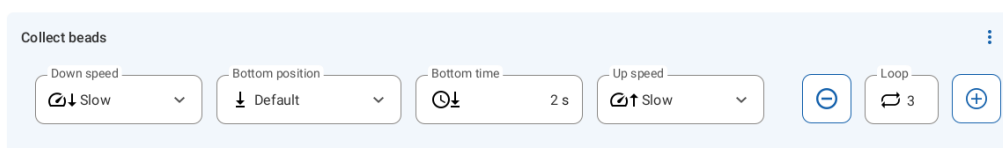


Figure 75. The collect beads operation.

During the Collect beads operation, the magnet head is moved into the Prep Cover. Both are inserted into the well liquid and again retracted from the liquid. The Down speed drop-down determines the speed of submersion into the liquid and movement to the lowest position. Conversely, the Up speed drop-down is defined for upwards movement and retraction from the liquid. Both have three possible presets or can be set to a numerical value with the **Advanced** option. The Bottom position drop-down determines the deepest point the Prep Cover and magnet move to and has three options:

- **Default** corresponds to the bottom of the mixing column (0%).
- **Higher** is 1 mm above the default position.
- **Advanced** allows to define the position as a percentage of the mixing column. This value can exceed 100% to allow for bead collection from the liquid surface.

The Bottom time drop-down determines how long the pause at the lowest collection point should be. Loop determines the number of repetitions of the in-liquid movements (liquid entry and exit occur only once each).

Operation: Release beads



Figure 76. The Release beads operation.

During the Release beads operation (Figure 76), the synchronized Prep Cover and magnet enter the liquid and the magnet is retracted. If the Time setting is set to greater than 0 s, a one-time mix operation is performed. The mix can be customized with the Frequency and Position parameters as described for the mix operation. A Time setting of 0 s leads to the release of beads in the liquid and immediate continuation with the next operation.

The Release beads operation is typically the first operation when the beads are be transferred into a new plate. Without the release beads operation, the magnet is retracted from the Prep Cover before submersion in liquid, which could lead to unwanted side effects.

Operation: Dip beads without release



Figure 77. The Dip beads without release operation.

During the Dip beads without release operation (Figure 77), the synchronized Prep Cover and magnet are moved shortly into the liquid and retracted immediately. The submersion and retraction speeds can be adjusted. This operation is usually used to hydrate beads after a drying step.

6.2.6. Rearranging plates

To rearrange plates go to the **Steps & Plates** tab, all plates are listed under Consumables. In the **More options** menu of the to be moved Plate, select **Rearrange Plate**. The application hides the protocol details for better readability (Figure 78). Use the arrows to move the plate up or down and save the changes with the **Confirm** button.

Press another consumable card to switch to another plate. It is possible to move the plate into the section for the second Prep Cover, if defined. If two cards of the same plate are arranged next to each other in the protocol, they merge. This action can be undone by adding the plate again and moving the desired steps back into it with the rearrange step function (Section 6.2.7).

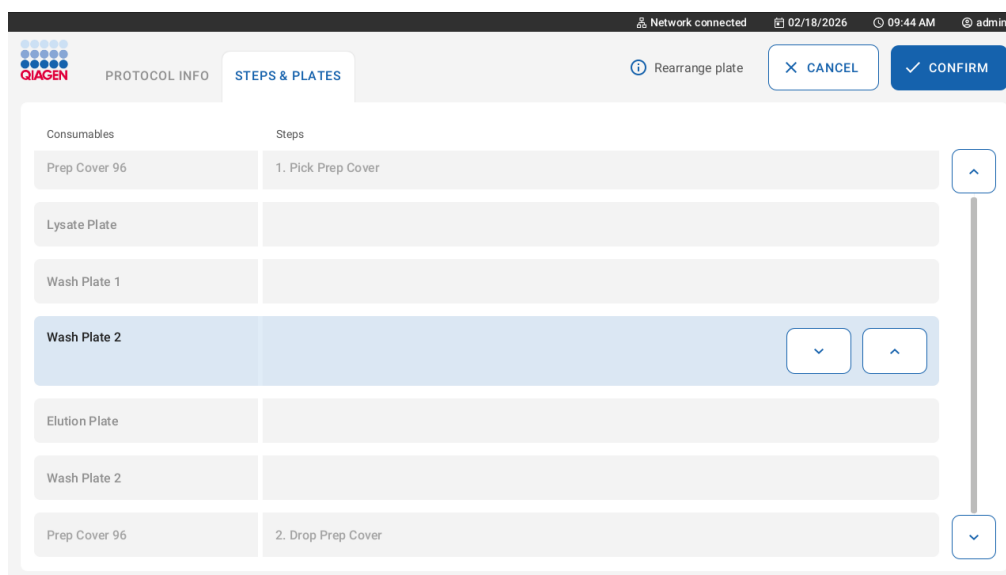


Figure 78. Rearranging plates.

6.2.7. Rearranging steps

Steps can be rearranged within the plate they are in but they can also be moved to a different plate. To rearrange steps, go to the **Steps & Plates** tab, all steps are listed under Steps. In the **More options** menu of the to be moved step, select **Rearrange Plate**. The application hides the protocol details for better readability (Figure 79). Use the arrows to move the plate up or down and save the changes with the **Confirm** button.

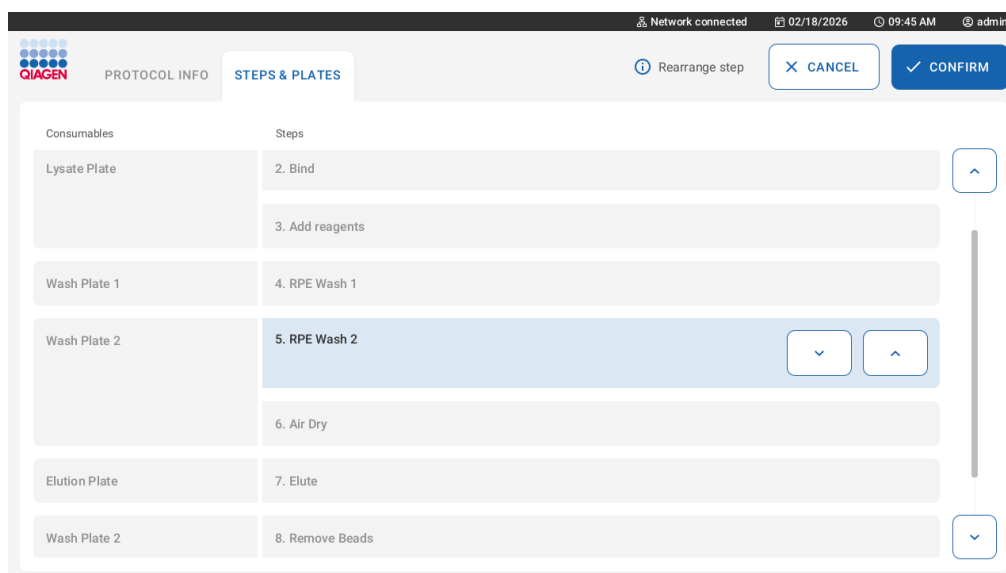


Figure 79. Rearranging steps.

6.2.8. Disabling and enabling steps

Steps can be disabled and enabled. Go to the **Steps & Plates** tab, all steps are listed under Steps. In the **More options** menu of each step, select **Disable step** or **Enable step**.

A disabled step is still displayed in the protocol editor but is grayed out. During a protocol run, disabled steps are ignored by the instrument. If a plate contains only disabled steps, the whole plate is ignored by the instrument.

6.2.9. Duplicating plates and steps

Plates can be duplicated. Go to the **Steps & Plates** tab, all plates are listed under Consumables. In the **More options** menu of the to be duplicated plate, press **Duplicate plate**. This creates a copy of the plate with identical steps. Thus, the added plate is a new plate, not a reuse of the original plate.

6.2.10. Manual instruction steps

There are two special types of manual interaction steps, “Add reagents” and “Pause”, which can be added to a plate by selection in **Step type** in the step dialog. These steps contain their own operations and cannot be expanded with other operations.

Add reagents

When the protocol reaches the Add reagents step, the instrument prompts the user to remove the current plate from the slider and to add the required reagents. After confirmation by the user, the protocol run continues.

The reagents can be defined in the Add reagents operation (Figure 80), which also displays the liquids already present. It is important to define new reagents with the Add reagents step (instead of the Pause step, for example), so that the instrument software can recalculate the mixing columns and monitor the maximum liquid levels of the plates.

Step: Add reagents

Step type: Add reagents

Step name: Add reagents

Manual interaction

Well contents: 830/1000 µl

Color: Content name: Volume:

+

CONTENT

^

↓

Buffer x 20 µl

MagAttract Suspension G 10 µl

Isopropanol 400 µl

SAVE

Figure 80. The Add reagents dialog.

Pause

When the protocol reaches the Pause step, the instrument prompts the user to remove the current plate from the slider and to follow the instructions defined in the Pause step dialog (Figure 81). After confirmation by the user, the protocol run continues. The pause step should not be used for prompting the addition of reagents; use the Add reagents step instead.

Figure 81. The Pause step dialog.

6.3. Two-batch protocol run (run twice)

Protocols that satisfy certain requirements can be run twice in a row by the instrument, so that up to 192 samples can be processed with one instrument loading. It is not possible to combine different protocols for this feature. The protocol card automatically marks suitable protocols with a checkbox, which has to be checked before pressing the **Run** button (Figure 82). In the Protocols screen, the two-batch run can be triggered from the three-dot menu.

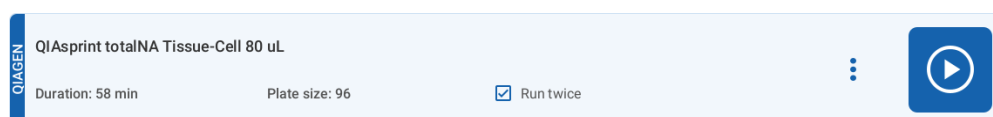


Figure 82. A protocol suitable for a two-batch run.

It is not necessary to mark a protocol as two-batch protocol in the protocol editor. Any protocol with the following disposable numbers is suitable for a two-batch run:

- One Prep Cover
- A maximum of four Prep Plates
- A maximum of one elution plate

A typical protocol for a two-batch run contains the following:

- Prep Cover
- Sample plate
- Up to three wash plates
- Elution plate.

Note: The plate setting “Cool to 10°C after run” is ignored in two-batch runs but executed if the protocol is run as a single-batch run.

7. Maintenance Procedures

This section describes regular and irregular maintenance procedures.

WARNING/ CAUTION



Risk of personal injury and material damage

Only perform maintenance that is specifically described in this user manual.

Important: The maintenance procedures as shown in the table below must be carried out to ensure reliable operation of the QIAasprint Connect. Each maintenance procedure must be performed by qualified personnel.

Type of task(s)	Frequency	Personnel
Regular maintenance	After each run	Laboratory technicians or equivalent
Irregular maintenance	When needed, e.g., when visible contamination is present. Note: Perform this procedure after completing the regular maintenance.	Laboratory technicians or equivalent
Annual maintenance and servicing	Annually or semiannually, depending on your requirements (for more information contact QIAGEN Technical Support).	QIAGEN Instrument Service Specialists only

Optionally, a UV decontamination procedure may be performed as required to reduce pathogen and nucleic acid contamination.

7.1. Cleaning agents

The surfaces and accessories of the QIAasprint Connect must be cleaned and disinfected with compatible detergents and disinfectants. Follow the instructions provided by the manufacturer of such materials to safely clean the instrument. If different disinfectants are used than the recommended ones, ensure that they have the same composition. If you are unsure about the suitability of the detergents or disinfectants to be used with the QIAasprint Connect, do not use them.

Important: Never expose the UV box to flowing liquids. Follow the instructions in Section 7.3.3 for UV box cleaning.

General cleaning of the QIAasprint Connect, with the exception of the hood window, can be done using mild detergents, such as Mikrozid® AF sensitive or 70% ethanol. The hood window should only be cleaned with lint-free tissue moistened with water.

WARNING



Toxic fumes

Do not use bleach to clean or disinfect the QIAasprint Connect or the labware, as bleach in contact with salts from the buffers can produce toxic fumes.

CAUTION



Damage to the instrument

Do not use spray bottles containing alcohol or disinfectant to clean surfaces of the QIAasprint Connect. Spray bottles should be used only to clean items that have been removed from the workdeck and if permitted by local laboratory operating practices.

WARNING**Risk of fire**

After cleaning the QIASprint Connect with alcohol-based disinfectant, leave the instrument door open to allow flammable vapors to disperse. Only clean the QIASprint Connect with alcohol-based disinfectant when workdeck components have cooled down.

WARNING**Risk of fire**

Do not allow cleaning fluid or decontamination agents to come into contact with the electrical parts of the QIASprint Connect.

WARNING**Risk of electric shock**

Do not open any panels on QIASprint Connect.

Risk of personal injury and material damage

Only perform maintenance that is specifically described in this user manual. Any other maintenance or repair may only be carried out by an authorized Field Service Specialist.

WARNING**Risk of fire or explosion**

When using ethanol or ethanol-based liquids on the QIASprint Connect, handle such liquids carefully and in accordance with the required safety regulations. If liquid has been spilled, wipe it off and leave the QIASprint Connect hood open to allow flammable vapors to disperse.

7.1.1. Disinfection

Ethanol-based disinfectants can be used for disinfecting the inner surfaces of the instrument. An example of an ethanol-based disinfectant are Mikrozid AF Liquid (Mikrozid Liquid consists of 25 g ethanol and 35 g 1-propanol per 100 g) or Mikrozid® AF wipes. These are available from Schülke & Mayr GmbH (see www.schuelke.com).

Disinfectants based on quaternary ammonium salt can be used for submerging accessories. An example of such disinfectants are Lysetol® AF or Gigasept® Instru AF (Schülke & Mayr GmbH, see www.schuelke.com). These disinfectants consist of 14 g cocosporylene–diamine–guanidine diacetate, 35 g phenoxypropanol, and 2.5 g benzalkonium chloride per 100 g, with anticorrosion components, fragrance, and 15–30% nonionic surfactants.

Note: If you want to use different disinfectants than the recommended ones, make sure that they have the same composition.

Note: The housing window should only be cleaned with lint-free tissue moistened with water.

CAUTION**Damage to the instrument**

Do not use spray bottles containing alcohol or disinfectant to clean surfaces of the QIASprint Connect. Spray bottles should be used only to clean items that have been removed from the workdeck and if permitted by local laboratory operating practices.

Removing RNase and nucleic acid contamination

The QIA Sprint Connect could be contaminated during operation. To remove the contamination, use appropriate decontamination solutions.

In case of RNase contamination, RNaseZap® RNase Decontamination Solution (Ambion, Inc., cat. no. AM9780) can be used for cleaning surfaces and submerging accessories. RNaseZap can also be used to perform decontamination by spraying accessories items, if they have been removed from the instrument.

In case of nucleic acid contamination, DNA-ExitusPlus™ (AppliChem, cat. no. A7089,0100) can be used for cleaning surfaces and submerging accessories. DNA-ExitusPlus can also be used to perform decontamination by spraying accessories, if they have been removed from the instrument. Cleaning with DNA-ExitusPlus can leave a residue on surfaces. Clean the affected surfaces repeatedly with a wet cloth, or rinse them with running water, until the residue is completely removed.

7.2. Regular maintenance

Regular maintenance is required after each run on the QIA Sprint Connect, particularly after working with potentially infectious agents, such as human blood, serum or plasma (for suitable decontamination agents, see Section 7.1).

WARNING



Moving parts

To avoid contact with moving parts during the operation of the QIA Sprint Connect, the instrument must be operated with the hood closed. The hood is locked during operation for safety reasons and a sensor detects the hood position. If the hood sensor or lock is not functioning correctly, contact QIAGEN Technical Services.

WARNING



Moving parts

Avoid contact with moving parts during operation of the QIA Sprint Connect. Under no circumstances should hands be placed under the processing unit during movement. Do not attempt to remove any plasticware from the workdeck while the instrument is operating.

WARNING/ CAUTION



Risk of personal injury and material damage

Improper use of the QIA Sprint Connect may cause personal injuries or damage to the instrument. The QIA Sprint Connect must only be operated by qualified personnel who have been appropriately trained. Servicing of the QIA Sprint Connect instrument must only be performed by a QIAGEN Field Service Specialist.

WARNING



Samples containing infectious agents

Some samples used with QIA Sprint Connect may contain infectious agents. Handle such samples with the greatest of care and in accordance with the required safety regulations.

Always wear safety glasses, gloves, and a lab coat.

The responsible body (for example, a laboratory manager) must take the necessary precautions to ensure that the surrounding workplace is safe, and that the instrument operators are suitably trained and not exposed to hazardous levels of infectious agents as defined in the applicable Safety Data Sheets (SDSs) or the OSHA,* ACGIH,[†] or COSHH[‡] documents.

Venting for fumes and disposal of waste must be in accordance with all national, state, and local health and safety regulations and laws.

* OSHA — Occupational Safety and Health Organization (United States of America)

[†] ACGIH — American Conference of Government Industrial Hygienists (United States of America)

[‡] COSHH — Control of Substances Hazardous to Health (United Kingdom)

7.2.1. Instrument cleaning and decontamination

The following procedure should be performed after each run to ensure the safe operation of the instrument:

1. Wear appropriate personal protective equipment for the kind of used samples and cleaning agents (such as lab coat, gloves, protective glasses).
2. Remove all accessories (hotels, UV box, thermal adaptors from the thermal adaptor platform) and disposables. Dispose of waste according to your local safety regulations.

Important: Prep Cover frames need to be cleaned after each use.

3. Power down the instrument.
4. Wipe the inner surfaces of the instrument with 70% ethanol or Mikrozyd Liquid/wipes. Ensure that no traces of visible contamination, such as buffer or sample spots, remain. If necessary, carefully move the slider to the side to access the surfaces below.

Important: Do not touch the magnet head to avoid damage to the magnetic rods.

5. Optionally, perform the automatic UV decontamination (Section 5.9).
6. Optionally, treat the inner surfaces with RNaseZap RNase Decontamination Solution or DNA-ExitusPlus, according to manufacturer instructions.
7. Leave the instrument open for some time to allow any vapors to disperse. Only power on the instrument after the vapors have dispersed.

7.2.2. Cleaning and decontamination of accessories

Important: Never expose the UV box to flowing liquids. Follow the instructions in Section 7.3.3 for UV box cleaning.

Hotels, Prep Plate frames, Prep Cover frames, thermal adaptors, and the magnet head guard should be cleaned when visible contamination is present and decontaminated when infectious agents have been used. Prep Cover frames need to be cleaned after every use.

1. Wear appropriate personal protective equipment for the kind of used samples and cleaning agents (such as lab coat, gloves, protective glasses).
2. Remove the accessory from the instrument. In the case of the magnet head guard, use the magnet head guard wizard (Section 5.13).
3. Remove any visible contamination by wiping with a lint-free cloth doused in 70% ethanol or Mikrozyd AF Liquid. Alternatively, Mikrozyd AF wipes can be used.
4. Submerge the accessory for 1 hour in an appropriate decontamination solution (Section 7.1).
5. Rinse the accessory with deionized water and allow to dry before the next run.

7.3. Irregular maintenance

The irregular maintenance should be performed in addition to the regular maintenance when visible contamination is present, a liquid spill has occurred, and the instrument is being prepared for servicing or shipping.

7.3.1. Instrument housing

Clean the hood window carefully by wiping with a lint-free cloth moistened with deionized water. Do not use other cleaning agents or coarse wipes (such as hand towels) to avoid scratching the window.

Clean the rest of the housing and the touchscreen with a lint-free cloth moistened with 70% ethanol or deionized water.

7.3.2. Magnet head

Due to the danger of corrosion and damage to the magnetic rods, the magnet head should only be cleaned and decontaminated when absolutely necessary.

WARNING

Danger of strong magnetic fields



Strong magnetic field – Take care to avoid exposure to a strong magnetic field.

1. Use the magnet head wizard to remove the magnet head from the instrument (Section 5.11).
2. Carefully transfer the magnet head from the storage box into a decontamination bath with a suitable decontamination solution (Section 7.1). Only handle the magnet head at the baseplate and do not touch the magnetic rods.
3. Remove the magnet head no later than 30 min after placing it in the decontamination solution to prevent corrosion.
4. Rinse the magnet head with deionized water and allow to dry.
5. Transfer the magnet head back into the storage box and use the magnet head wizard to install it in the instrument.

Cleaning of the magnet head through wiping should be avoided wherever possible to prevent damage to the magnetic rods. Light contamination with magnetic beads does not affect the function of the magnet head.

7.3.3. UV box

The UV box contains electronic components and must be protected against liquid ingress. To clean the UV box, wipe the blue housing with a lint-free cloth lightly doused in 70% ethanol or deionized water. Do not touch the UV LEDs at the underside of the box. Allow to dry before replacement in the instrument.

7.4. Instrument reboot

For instruments that are powered continuously, it is recommended to perform an instrument restart once a week.

7.5. Servicing

Contact your local QIAGEN Field Service Specialist or your local distributor for more information about flexible Service Support Agreements from QIAGEN.

WARNING/ CAUTION



Risk of personal injury and material damage

Improper use of the QIASprint Connect may cause personal injuries or damage to the instrument. The QIASprint Connect must only be operated by qualified personnel who have been appropriately trained. Servicing of the QIASprint Connect must only be performed by a QIAGEN Field Service Specialist.

8. Troubleshooting

This section provides information about what to do if an error occurs when using the QIASprint Connect system.

If further assistance is required, contact QIAGEN Technical Support using the contact information below:

Website: support.qiagen.com

When contacting QIAGEN Technical Support about an error with the QIASprint Connect instrument, please have the following information ready:

- QIASprint Connect serial number and software versions (Go to the **Tools and data** menu and press the **System information** button. If you cannot log in, press **Help** on the login screen to display the serial number.)
- Timepoint when the error occurred for the first time
- Frequency of error occurrence (i.e., intermittent or persistent error)
- Error messages and error codes
- Detailed description of the steps leading to the error situation
- Photos of the error situation, particularly the state of the instrument when the error occurred
- Exported Support Package

This information helps QIAGEN Technical Support resolve the issue efficiently.

Please note that QIAGEN Technical Support can only assist the troubleshooting of protocol issues if the protocol uses QIAGEN chemistry, for example, when using a QIAGEN kit.

Information about the latest software and protocol versions can be found at www.qiagen.com. In some cases, updates may be available for addressing specific problems.

8.1. Support package and screenshots

Support package

The Support Package containing logfiles, screenshots, reports etc. and can be exported to a FAT32-formatted USB drive. Go to the Tools and Data menu and press the Support Package button, select the desired USB drive and folder, and start the download by pressing the Export support package button. The Support Package is a valuable resource for QIAGEN Technical Services to assist in troubleshooting and should be supplied, if possible, with every support request related to instrument functioning or performance.

Screenshots

Screenshots can be created on the QIASprint Connect instrument by sliding a finger along the dark status bar on top of the display from left to right for about 4 cm. A message appears when a screenshot was created. The screenshots are saved to internal storage and exported together with the Support Package. Screenshots of error messages are not required for troubleshooting, all error messages are logged in the Support Package.

8.2. General troubleshooting measures

If a run is interrupted due to an error, the instrument needs to be returned to a safe state, which includes removal of all disposables and accessories from the paths of the moving axes and successful initialization. When the software detects an unsafe state, it displays a series of cleanup screens to guide the user. A new protocol run can only be started after completing these cleanup workflows to protect the instrument from damage.

- Depending on the severity of the error, the instrument tries to automatically return the disposables to the hotel. If the instrument does not return all disposables to the hotel, restart the instrument. Upon restart, the instrument displays cleanup screens to remove the remaining disposables. Follow the screen instructions and confirm when all disposables were removed. After that, the instrument is ready for another run.
- If the cleanup of the instrument with the help of the instrument software is not possible, power down the instrument and extract accessible disposables manually. Most axes can be moved manually, except the plate handler Z-axis, the magnet head guard axis, and the heater-cooler axis. Objects in the plate handler gripper can be removed by holding the object with one hand and carefully pulling one arm of the gripper to the side to open the gripper and release the object. If a plate is blocked on the slider by the heater-cooler, leave it in the instrument, the heater-cooler is lowered during initialization. Restart the instrument.
- Ensure that all disposables are seated correctly in the hotel slots, the disposables may not extend beyond the front ledge of the hotel slots.
- Ensure that the Prep Plate inserts are inserted correctly into the frames. Tilted inserts can cause collisions with the magnet head guard.
- Verify that the individual Prep Cover rods do not contain contamination such as plastic debris that could lead to collisions with the magnet rods. In doubt, exchange the Prep Cover before continuing.
- Inspect the plate hotels for deformations. Deformed plate hotels can cause plate handling issues.
- If it is unclear how to recover instrument state, contact QIAGEN Technical Support for assistance.

Example in case of a power outage:

After a power outage, turn the instrument back on and log in to the software. The instrument clean-up screen is displayed.

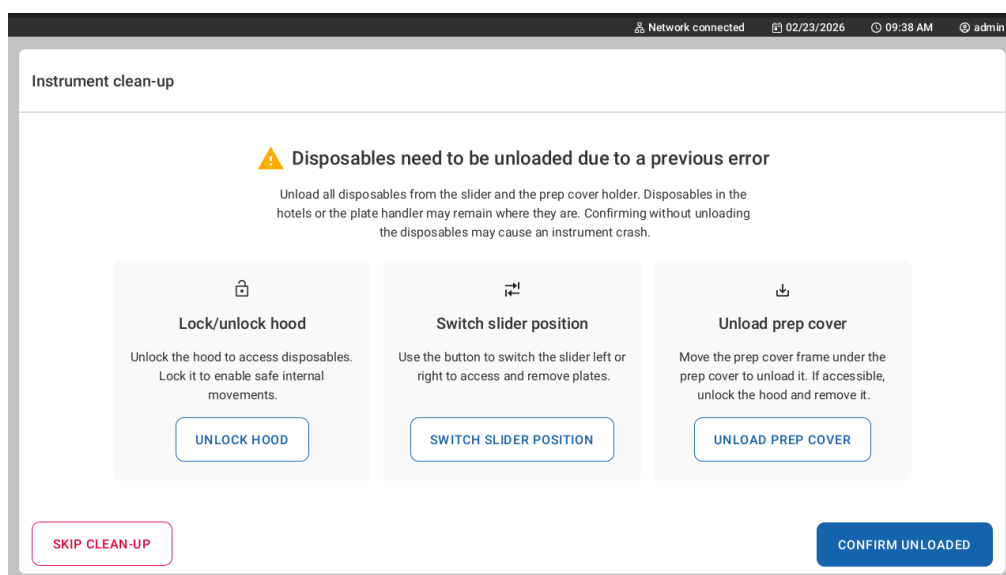


Figure 83. The Instrument clean-up screen.

The Instrument clean-up screen enables the movement of the slider and the unload prep cover function to unload the instrument after unlocking the hood. The hood has to be locked to use either the **Switch Slider Position** or the **Unload Prep Cover** function. To avoid contamination, **Unload Prep Cover** function should only be used when an empty Prep Cover frame is moved into the processing position beneath the Prep Cover. After removing all consumables press **Confirm Unloaded** button.

To make sure that all consumables have been unloaded, an additional message is displayed.

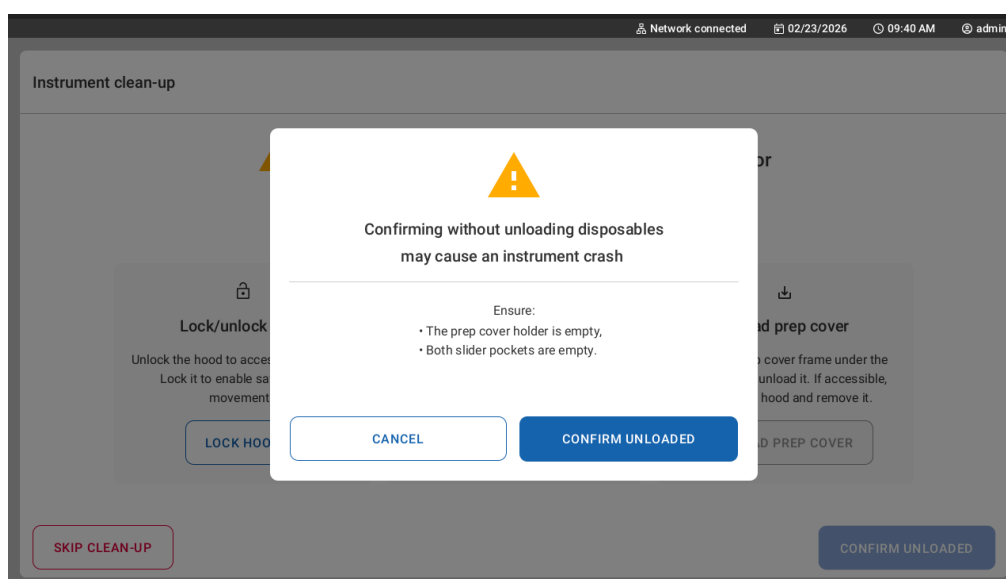


Figure 84. Confirmation screen after the Instrument clean-up screen.

8.3. Help with specific error cases

If one of the error cases in the following table is encountered, follow the recommended corrective actions. If the error is not listed or the suggested measures do not resolve the issue, contact QIAGEN Technical Services.

Error	Measure
The instrument could not be initialized.	In rare cases, the instrument cannot perform a safe automatic initialization due to missing position information for the plate handler axes. Power off the instrument and carefully move the plate handler by hand fully to the left or right, depending on which path is available. Restart the instrument.
Error 3200 (hood lock/unlock error)	Ensure that the hood is fully closed and properly aligned with the instrument enclosure.
Error 3501 (plate handler step loss X-axis)	Ensure that no obstacles are blocking the movement of the plate handler. Verify that all Prep Plate inserts are inserted correctly and that all disposables are fully inserted into the plate hotel slots.
Error 3526 (plate handler step loss Z-axis)	Ensure that no obstacles block the way of the plate handler. Verify that all Prep Plate inserts were inserted correctly and that all disposables were inserted fully into the plate hotel slots.
Error 3556 (slider stalled)	Ensure that there are no obstacles blocking the movement of the slider.
Error 3601 (plate handler dropped item)	Ensure that all disposables were inserted fully into the plate hotel slots. Do not use non-QIAGEN disposables.
Error 3701 (prep cover axis step loss)	Ensure that there are no solid objects in the path of the Prep Cover during mixing or bead collection, such as salt deposits or hard samples in the plate wells. Ensure that the Prep Plate inserts were inserted correctly.
Error 3708 (prep cover axis no home reference)	Ensure that there are no solid objects in the path of the Prep Cover during mixing or bead collection, such as salt deposits or hard samples in the plate wells. Ensure that the Prep Plate inserts were inserted correctly.
Error 3750 (magnet axis step loss)	Ensure that there are no solid objects in the Prep Cover (such as plastic debris). Replace the Prep Cover. Ensure that the Prep Plate inserts were inserted correctly.
Error 3951 (magnet head guard timeout)	Ensure that the Prep Plate inserts were inserted correctly. Check the instrument for obstacles in the movement path of the magnet head guard.

8.4. Recovering a run

Once the instrument was cleaned up, an attempt to continue a failed run can be made.

- Export the run report of the failed run to determine the point of failure in the process.
- Create a copy of the failed protocol (In the Home screen go to the protocol properties card, click on the three dots of the more protocol options menu and select **Copy and edit**) and remove the plates and steps that have been performed already.
- Save the protocol under a new name and run it, following the new loading instructions.

9. Technical Specifications

9.1. Environmental conditions – operating conditions

Description	Requirement
Power	100–240 VAC, 50–60 Hz, 1000 VA (Mains supply voltage fluctuations are not to exceed 10% of nominal supply voltages)
Overvoltage category	II
Fuse	AC Inlet: T4A H 250 V
Air temperature	15–32°C (59–90°F)
Relative humidity	10–75% rH
Altitude	up to 2000 m (6500 ft)
Place of operation	For indoor use only
Pollution level	2
Environmental class	3K21 (IEC 60721-3-3), 3M11 (IEC 60721-3-3)
Average noise level (over 8 hours)	Max 70 dBA
IP code	IP20

9.2. Environmental conditions – transport conditions

Description	Requirement
Air temperature	–25°C to 60°C (5–140°F)
Relative humidity	5–85% rH
Environmental class	2K11 (IEC 60721-3-2), 2M4 (IEC 60721-3-2)

9.3. Environmental conditions – storage conditions

Description	Requirement
Air temperature	5–40°C (41–104°F)
Relative humidity	5–85% rH
Environmental class	1K21 (IEC 60721-3-1), 1M11 (IEC 60721-3-1)

9.4. Mechanical data and hardware features

Description	Requirement
Dimensions	Height: 740 mm Width: 490 mm Depth: 640 mm
Weight	With packaging: 84 kg Without packaging: 62 kg

10. Glossary

Bead	Paramagnetic particle coated with silica that binds nucleic acids in certain environmental conditions (Section 3.1)
Barcode reader	A handheld device that enables scanning of barcodes and conversion of them into data that are transmitted to the QIA Sprint Connect
Consumable	Displayed in the left column of the protocol Defines the type of disposable (Prep Cover plate or Prep Plate, Section 3.4) and the contents of the plates
Elution plate	Plastic disposable (delivered with a lid) used for the elution step (Section 3.4.3)
Elution plate lid	Plastic disposable (delivered with the elution plate) used to cover the elution plate (Section 3.4.3)
Gripper	Part of robotic handling system that securely holds and transports plates during automated workflow
Heater-cooler	Temperature control module that heats or cools plates to hold the required conditions during nucleic acid extraction steps (Section 3.3.3)
Hood lock	Safety mechanism that keeps the instrument hood closed during operation to prevent user access to moving parts
Hotel	The hotels (right and left) are storage modules that hold the plates in designated slots so the robotic handling system can access them during a sample run (Section 3.3).
Hotel platform	Mobile base within the instrument where the hotels are placed and positioned by the system for robotic access to plates (Section 3.3)
Magnet head	Robotic module containing magnet rods used to attract and manipulate magnetic beads during sample processing steps
Magnet head guard	Metal shield that moves in between the plate and the magnet head when the magnet head retracts from the sample to prevent cross-contamination
Magnet head holder	Bracket that the magnet head is mounted to, ensuring accurate alignment with samples during magnetic bead processing
Manual step	A planned interaction of the user with the instrument as part of the protocol (Section 6.2.10)
Operation	Displayed as components of a step Defines instrument instructions for the processing of a plate (Section 6.2.10)
Plate handler	Part of robotic handling system that securely transports plates during automated workflow
Prep Cover	Plastic disposable with a number of hollow sleeves, which is used by the instrument to mix the solutions in the prep/elution plates and to protect the magnets during bead collection (Section 3.4.2)
Prep Cover assembly	Prep Cover placed in a Prep Cover frame (Section 3.4.2)
Prep Cover Frame	Metallic holder for the Prep Cover that keeps the Prep Cover in place

Prep Cover Frame Shields	Disposable paper used to catch magnetic bead spills from the Prep Cover in the Prep Cover Frame To be placed in Prep Cover Frame before loading
Prep Cover gripper	Holds the Prep Cover securely on the prep cover plate during the automated process
Prep Plate	Disposable consisting of a plastic Prep Plate insert and a metal Prep Plate frame Similar to a deep-well plate (Section 3.4.1)
Protocol	A set of instructions for the QIAAsprint Connect that allows the instrument to automate a nucleic acid purification procedure
Report file	A file generated by the QIAAsprint Connect that contains system and run parameters
Robotic handling system	The robotic handling system consists of the arm, the gripper, and an internal barcode reader. (Section 3.3.4)
Slider	Moves a Prep Cover, Prep Plate, or Elution Plate from loading to processing under the magnet head and back (Section 3.3.2)
Slider latch	Retention mechanism to securing the slider in the processing position
Step	Displayed in the right column of the protocol Groups a set of operations into logical units representing a step in the process (e.g., bind, wash, elute, Section 6.2.8)
Thermal adaptor	Metal adaptor placed to the heater-cooler to provide an interface with different plate geometries (Section 3.3.3)
UV box	A light source of ultraviolet light for decontamination (Section 3.3.6).

Appendix A – Technical Data

Waste Electrical and Electronic Equipment (WEEE)

This section provides information about disposal of waste electrical and electronic equipment by users.

The crossed-out wheeled bin symbol (see below) indicates that this product must not be disposed of with other waste; it must be taken to an approved treatment facility or to a designated collection point for recycling, according to local laws and regulations.

The separate collection and recycling of waste electronic equipment at the time of disposal helps to conserve natural resources and ensures that the product is recycled in a manner that protects human health and the environment.



Recycling can be provided by QIAGEN upon request at additional cost. In the European Union, in accordance with the specific WEEE recycling requirements and where a replacement product is being supplied by QIAGEN, free recycling of its WEEE-marked electronic equipment is provided.

To recycle electronic equipment, contact your local QIAGEN sales office for the required return form. Once the form is submitted, you will be contacted by QIAGEN either to request follow-up information for scheduling collection of the electronic waste or to provide you with an individual quote.

California Proposition 65 Warning

This product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

FCC Declaration (US) and Compliance with ICES (Canada)

The "According to United States Federal Communications Commission" (USFCC) (in 47 CFR 15.105) this equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

For Canada, this is a Class A digital apparatus compliant with Canadian ICES-003 "Information Technology Equipment (including Digital Apparatus)" standard.

Liability Clause

QIAGEN shall be released from all obligations under its warranty in the event repairs or modifications are made by persons other than its own personnel, except in cases where the Company has given its written consent to perform such repairs or modifications.

All materials replaced under this warranty will be warranted only for the duration of the original warranty period, and in no case beyond the original expiration date of original warranty unless authorized in writing by an officer of the Company. Read-out devices, interfacing devices, and associated software will be warranted only for the period offered by the original manufacturer of these products. Representations and warranties made by any person, including representatives of QIAGEN, which are inconsistent or in conflict with the conditions in this warranty shall not be binding upon the Company unless produced in writing and approved by an officer of QIAGEN.

Appendix B – Ordering Information

Ordering information

Note: Only use accessories supplied by QIAGEN.

Product	Contents	Cat. no.
QIASprint Connect	Benchtop instrument for automated isolation of nucleic acids; includes 1-year warranty on parts and labor	9001234
QIASprint Connect, Prev Subscription	One on-site Planned Maintenance (PM) visit, including travel, labor and PM parts. Includes a 10% discount on repair services during the Preventive Subscription period.	9246240
QIASprint Connect, Premium Agreement	On-site instrument repair, including travel, labor and parts, for a period of one year. Response time of next business day. Includes one Planned Maintenance during the Premium Agreement period	9246244
QIASprint Connect, Full Agreement	On-site instrument repair, including travel, labor and parts, for a period of one year. Response time of two business days. Includes one Planned Maintenance during the Full Agreement period.	9246243
QIASprint Connect, Basic Agreement	On-site instrument repair including travel, labor, and parts for a period of one year with a 5-business day response time. Also includes one on-site Planned Maintenance (PM) during the agreement period.	9246242
QIASprint Connect, Core Agreement	Core Agreement includes 1 on-site instrument repair including travel, labor, and parts for a period of one year. Response time of 5 business days. Also includes 1 on-site Planned Maintenance (PM) during the agreement period. For additional repair visits in the year, a 10% discount is applied to travel, labor, and spare parts.	9246241
QIASprint Connect, Install & Training	This service combines Installation of the system with Applications Training to provide customers with hands-on experience in operating the instrument hardware, software, and applications using QIAGEN kits and facilitates professional qualification of laboratory staff. Customer needs shall be assessed before the application training.	9246249
QIASprint Connect, IQ/OQ Service	Installation Qualification and Operational Qualification (IQ/OQ) verifies that the instrument has been installed and is working according to the manufacturer's specifications.	9246253
Accessories		
QIASprint Prep Plate Insert (32)	Set of 32 Prep Plate Inserts; for use with QIASprint Connect	582226
QIASprint Prep Plate Frame (2)	Set of 2 QIASprint Prep Plate Frames; for use with QIASprint Connect	582211
QIASprint Prep Cover (8)	Set of 8 QIASprint Prep Covers; for use with QIASprint Connect	582103
QIASprint Prep Cover Frame (2)	Set of 2 QIASprint Prep Cover Frames; for use with QIASprint Connect	582111
QIASprint Elution Plate (10)	Set of 10 QIASprint Elution Plates; for use with QIASprint Connect	583204
QIASprint Frame Shield (100)	Set of 100 QIASprint Frame Shields; for use with QIASprint Connect	580010

For up-to-date licensing and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at www.qiagen.com or can be requested from QIAGEN Technical Support or your local distributor.

Document Revision History

Revision	Description
March 2026	Initial release.

Trademarks: QIAGEN®, Sample to Insight®, QIASphere®, QIASprint® (QIAGEN Group); RNaseZap® (Ambion, Inc.); DNA-ExitusPlus™ (AppliChem); Intel®, Core™ (Intel Corporation); Microsoft Windows® (Microsoft Corporation); Gigasept®, Lysetol®, Mikrozid® (Schülke & Mayr GmbH). Registered names, trademarks, etc. used in this document, even when not specifically marked as such, are not to be considered unprotected by law.

03/2026 HB-3708-001 © 2026 QIAGEN, all rights reserved.

Page left intentionally blank.

Page left intentionally blank.

