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PREP-Assistant

Software manual

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Only for epMotion M5073 and M5073c: NOTICE TO PURCHASER; LIMITED LICENSE FOR RESEARCH USE ONLY.

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1 Operating instructions

1.1 Using this manual

Your epMotion operating manual consists of hardware instructions and software instructions. Short instructions are available for optional software enhancements.

The operating manual is part of the product.

The current version of the operating manual can be found on our webpage: www.eppendorf.com.

- ▶ Read the operating manual in full before using the device.
- ▶ Store the operating manual at an easily accessible location.
- ▶ The device may only be transferred with the operating manual.
- ▶ If the operating manual is lost, replace it immediately. Please contact Eppendorf AG for further details.

1.2 Symbols used

Representation	Meaning
▶	Handling
1. 2.	Actions in the specified order
•	List:
<i>Text</i>	Name of fields in the software
ⓘ	Useful information

2 Product description

2.1 Software description

The *Prep Assistant* is software for epMotion M5073 and M5073c.

The *Prep Assistant* offers incremental workflows for specific applications. No programming experience is required to use the *Prep Assistant*.

An assistant is available for every MagSep kit from Eppendorf AG. The assistants are shown as symbols on the epBlue start screen. Select the assistant that matches your MagSep kit.

MagSep Blood gDNA

- Use the MagSep Blood gDNA kit to carry out the protocol for purification of genomic DNA from whole blood.

MagSep Tissue gDNA

- Use the MagSep Tissue kit to carry out the protocol for purification of genomic DNA from tissue. The assistant can also be used with this reagent kit for cell cultures, yeast or bacteria.

MagSep Viral DNA/RNA

- Use the MagSep Viral DNA/RNA kit to carry out the protocol for purification of viral RNA or DNA from cell-free body fluids.

Purification on the epMotion takes 1 to 2.5 h, depending on the number of samples.

3 Operation

3.1 Preparing applications

3.1.1 Updating the labware library

You can combine a wide variety of plates, vessels and racks and insert them into the epMotion. To use labware, a labware definition must be stored in the labware library.

1. Check to see if the labware definition is available in the labware library.
2. Import the labware definition if necessary.
3. Create a labware combination if necessary.



Information on how to import data into the labware library, and create labware combinations, can be found in the software operating manual.

3.1.2 Preparing samples and vessels

Racks, samples and reagents must be prepared for the application. Information on preparing samples and reagents can be found in the instructions for use of the MagSep kits.

3.1.2.1 Preparing the ReagentRack

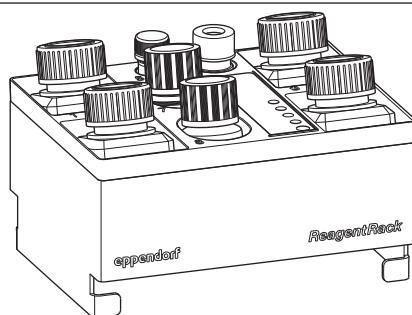


Fig. 3-1: ReagentRack with reagents



NOTICE! Material damage due to sample loss.

When the application is started, epMotion measures the level in the reagent bottle at position 5 (beads). epMotion uses this level to calculate the volume of the reagents in the other reagent bottles.

- ▶ Do not refill the reagent bottles.
- ▶ Only use reagent bottles which belong to the tray. Do not use reagent bottles that belong to other trays.

1. The reagent bottles have numbers and the positions in the trays are numbered. Check to see if the number on each reagent bottle matches the number on the tray.
2. Insert the tray in the ReagentRack so the labels on the tray and ReagentRack point toward the user.
3. Open the reagent bottles.

3.1.2.1 Preparing the PrepRack

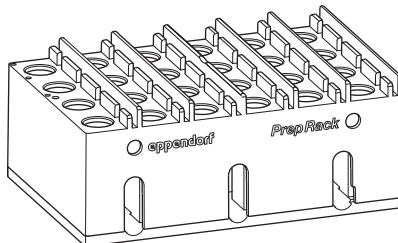


Fig. 3-2: PrepRack



The PrepRack may only be used with the 2.0 mL Safe-Lock tubes delivered with the MagSep kit.

Prerequisites

- Samples were prepared in accordance with the instructions for use of the MagSep kits.

- Place the same number of Safe-Lock tubes in the PrepRack as the number of samples to be processed.
Place the first Safe-Lock tube at position 1 in the upper left hand corner. Position additional Safe-Lock tubes according to the numbering of the rack.
- Open the Safe-Lock tubes.
- Insert the lid of the vessels in the holders next to the vessel positions.

3.1.2.1 Preparing the rack for blood collection tubes

These instructions only apply to MagSep Blood gDNA kits.

Blood samples can be immediately presented in the blood collection tubes.



To process the blood collection tube on the epMotion, the tube must have at least 1 mL of sample material.

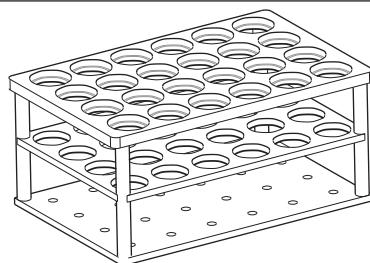


Fig. 3-3: Rack for 24 vessels, suitable for blood collection tubes

- Check to see if the rack/blood collection tube labware combination is in the labware library.
- If necessary, create a rack/blood collection tube labware combination in the labware library.
Additional information on this procedure can be found in the software operating manual.
- Carefully shake the blood collection tube.
- Place the blood collection tube in the rack.
- Place the first blood collection tube at position 1 in the upper left hand corner. Position additional blood collection tubes according to the rack numbering.
- Open the blood collection tube.

3.1.2.1 Preparing the rack for elution vessels

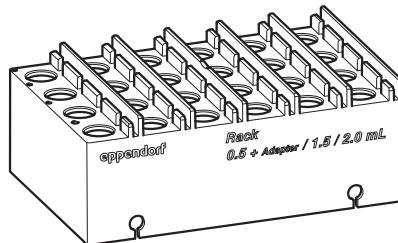


Fig. 3-4: 1.5/2.0 mL rack



Eppendorf AG recommends using the 2.0 mL Safe-Lock tube DNA LoBind from the MagSep kit to collect the eluate.

1. Check to see if the rack/reaction vessels labware combination is available in the labware library.
2. If necessary, create the labware combination in the labware library.
Information on this can be found in the software operating manual.
3. Position the same number of reaction vessels in the rack as the number of samples to be processed.
Place the first reaction vessel at position 1 in the upper left hand corner. Position additional reaction vessels according to the numbering of the rack.
4. Open the reaction vessels.
5. Insert the lid of the reaction vessels in the holders next to the vessel positions.

3.1.2.1 Preparing the plate for collecting the eluate

1. Check to see if the labware definition of the plate is available in the labware library.
2. If necessary, import the labware definition of the plate.
Information on this can be found in the software operating manual.

3.1.2.2 Preparing the liquid waste tub

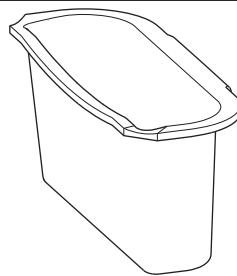


Fig. 3-5: Liquid waste tub

- ▶ Hang the liquid waste tub on the right wall of the waste container.

3.2 Starting and ending the assistant

3.2.1 Starting the assistant

1. Switch on epMotion as described in the software operating manual.

The epBlue start screen appears.

2. Select an application in the *Prep Assistant* area. Click on the application symbol.

The application will open; the start screen appears.

All applications consist of several program steps. Each program step will be shown in a window. All windows have the same appearance.

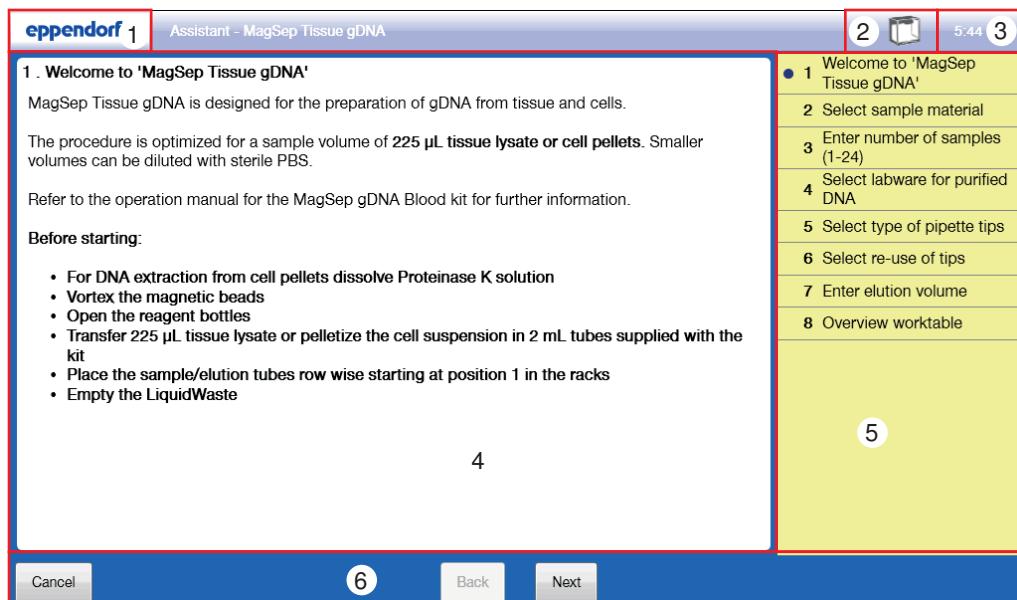


Fig. 3-6: Assistant start screen

1 eppendorf menu

Information on the eppendorf menu can be found in the software operating manual.

4 Work area

Information on the current program step

2 Status area

epMotion status

5 Information area

Access to all program steps. When you click on a program step, it will be shown in the work area.

3 Clock

6 Navigation area

Back button - return to the last step

Next button - go to the next step

Cancel button - end the assistant

3.2.2 Ending the assistant

1. Click on the *Cancel* button to end the assistant.
2. Alternatively, you can click on *Exit to start screen* in the *eppendorf menu*.

3.3 Creating an application

3.3.1 Selecting the sample type

MagSep Tissue gDNA

- ▶ Select the sample type.
 - *Tissue lysate*
 - *Cell/bacteria pellet*

MagSep Viral DNA/RNA

- ▶ Select the nucleic acid you would like to isolate.
 - *Viral DNA*
 - *Viral RNA*
 - *Viral RNA including Proteinase K digest*

3.3.2 Entering the number of samples

1 to 24 samples are processed in an application.

- ▶ Enter the number of samples.

3.3.3 Selecting the source labware (*MagSep Blood gDNA*)

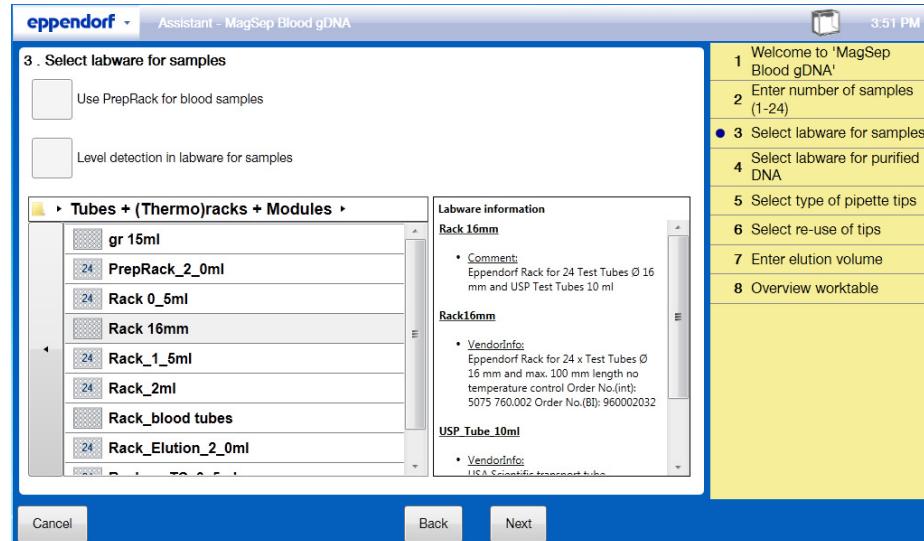


Fig. 3-7: *Select labware for samples* window

Select whether you would like to present the blood samples in 2.0 mL Safe-Lock tubes in the PrepRack, or in blood collection tubes in a rack. Information on the selected labware will be shown at the right. Proceed as follows:

Prerequisites

- Labware is available in the labware library.
- ▶ If you use a rack with blood collection tubes, select labware from the *Tubes + (Thermo)racks+ Modules* list.
- ▶ To determine the liquid level in the blood collection tubes with the optical sensor, check the *Leveldetection in labware for samples* checkbox.
- ▶ If you use the PrepRack with 2.0 mL Safe-Lock tubes, check the *Use PrepRack for blood samples* checkbox.

The *Tubes + (Thermo)racks+ Modules* is grayed out.

3.3.4 Selecting the destination labware

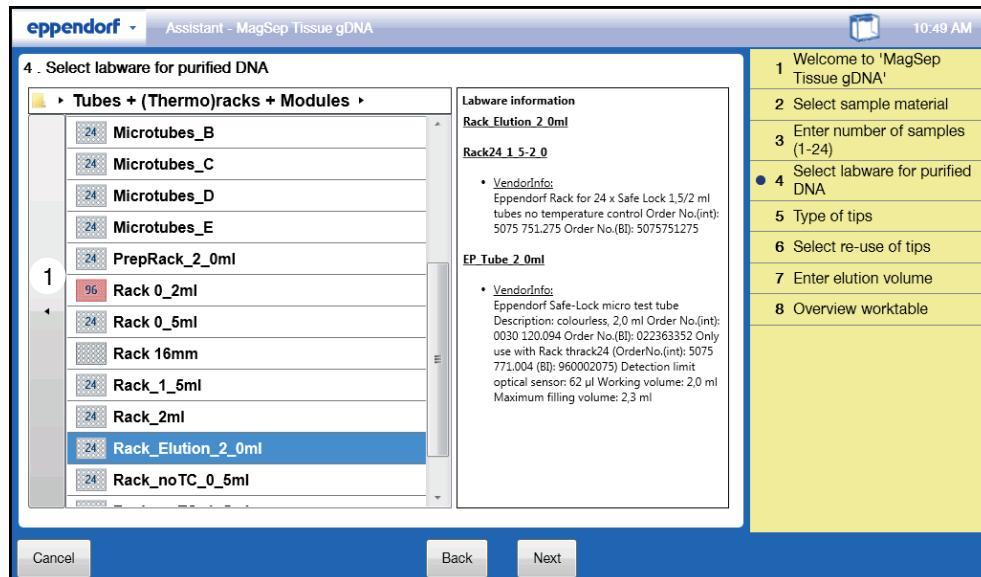


Fig. 3-8: *Select labware for purified DNA* window

1 Selecting other labware types

Select the labware for collecting purified nucleic acid eluate. Proceed as follows:

Prerequisites

- Labware is available in the labware library.

1. Select the labware.

Information on the selected labware will be shown at the right.

2. If you use the elution rack with the supplied 2.0 mL Safe-Lock tubes, select the *Rack_Elution_2_0mL* labware under *Tubes + (Thermo)racks + Modules*.

3.3.5 Selecting pipette tips

You can use pipette tips with or without filters.

At the start of the application, the epMotion checks to see if the pipette tips on the epMotion worktable match the selected pipette tips.

1. Select the pipette tips.
2. If you use pipette tips with a filter, activate the *Use filter tips* option.
3. If you use pipette tips without a filter, deactivate the *Use filter tips* option.

3.3.6 Re-use pipette tips



Only re-use the pipette tips when you work with Eppendorf epT.I.P.S. Motion SafeRacks. SafeRacks have a partition that prevents pipette tips from coming into contact with each other, which prevents contamination.

The epMotion pipette tips can be re-used in order to save pipette tips. Pipette tips that aspirate the wash buffer and transfer it to the liquid waste tub are re-used. One pipette tip is allocated per sample.

- If you use pipette tips multiple times, activate the *Re-use tips* option.
- If you only use pipette tips once, deactivate the *Re-use tips* option.

3.3.7 Entering the elution volume

The volume transferred to the elution vessels is 5 µL smaller than the elution volume entered in the assistant. This prevents carry-over of beads into the elution vessels.

MagSep Blood kit or MagSep Viral DNA/RNA kit

- Enter the volume of the elution buffer (25 µL to 100 µL).

MagSep Tissue kit

- Enter the volume of the elution buffer (25 µL to 200 µL).

3.3.8 Equipping the worktable

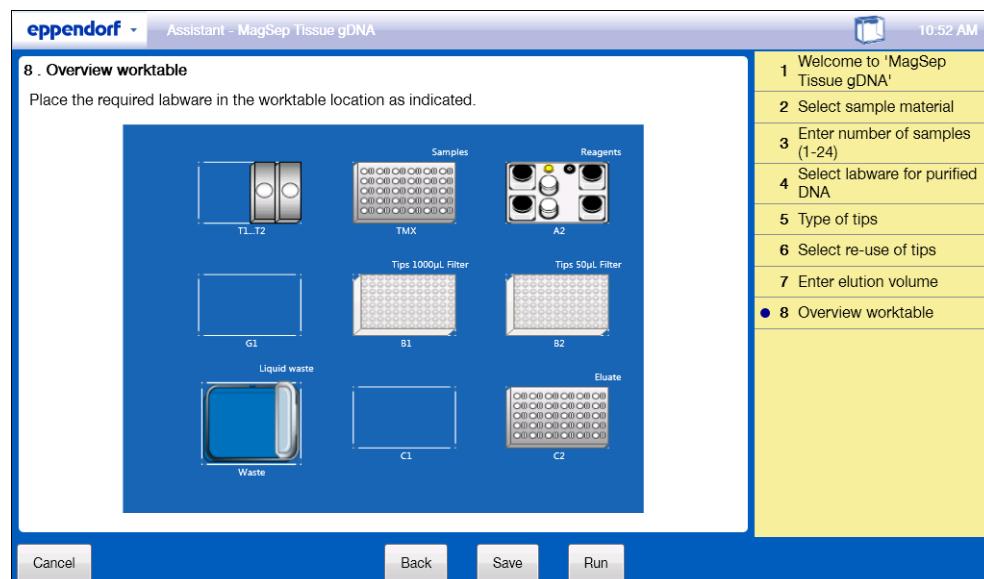


Fig. 3-10: *Overview worktable* window

Cancel button

Abort the application

Back button

Go back one step

Save button

Save application

Run button

Start the application

1. Equip the epMotion worktable in the same manner as the epBlue worktable.
The equipping of the worktable is shown in the *Overview worktable* window.
2. If necessary, place the rack and blood collection tubes at location C1.
3. Position the TS 50 dispensing tool at location T1. Position the TS 1000 dispensing tool at location T2.
4. Empty the waste container and liquid waste tub.

3.3.9 Starting the application

If the entries have been completed, start the application. Proceed as follows:

Prerequisites

- The *Overview worktable* window is open.

1. Click on the *Save* button to save the application under a new name.

Saved applications can be opened and changed in the epBlue Studio. A description of this procedure can be found in the software operating manual.

2. Click on the *Run* button to start the application.

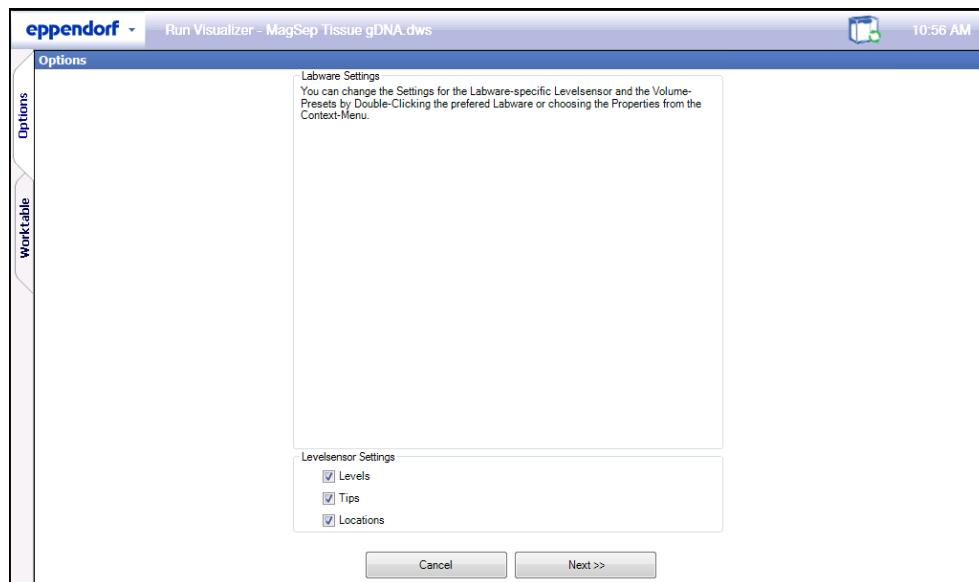


Fig. 3-12: *Options > Level sensor settings* window

The *Options > Level sensor settings* window appears.

3. Select the optical sensor parameters.



Eppendorf AG recommends activating all optical sensor parameters.
Information on setting the optical sensor can be found in the software operating manual.

4. Click on the *Next>>* button.

The *Options > Labware Information* window appears.

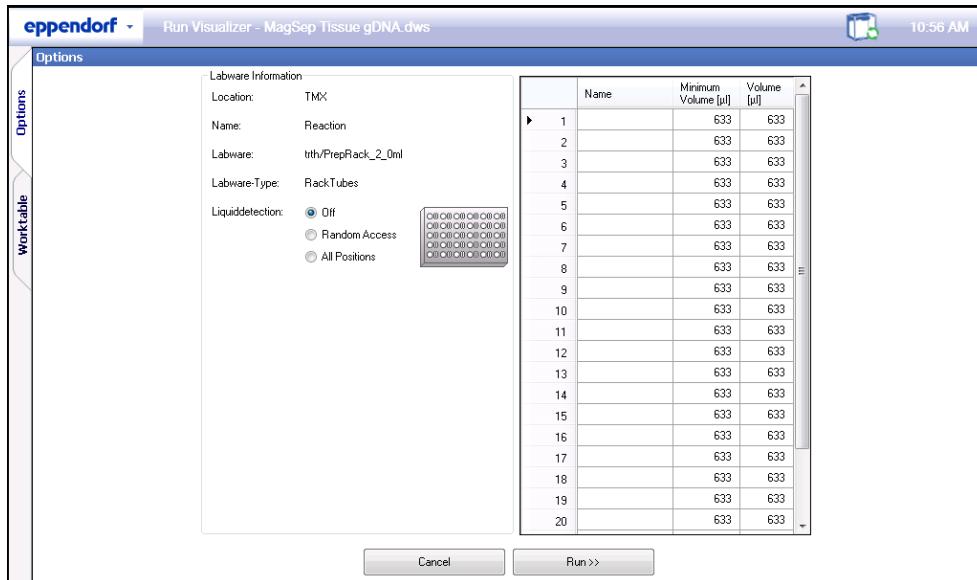


Fig. 3-14: *Options > Labware Information* window

Labware Information area

Information on the optical sensor setting and the PrepRack at the TMX position

Volume table

Minimum Volume = minimum volume required for the application
Volume [µL] = volume in the vessels

The values in the *Volume [µL]* column are larger than the volume that is actually in the vessels. If liquids are aspirated from the vessels, the stroke of the dispensing tool is larger than the volume in the vessels. This means that the liquid which runs off the tube inner walls will also be aspirated. The remaining volume in the vessels will be reduced.

All values in the *Volume [µL]* column must match the first value in the *Minimum Volume [µL]* column.



The *Options > Labware Information* window is only used for viewing. Do not change any settings in this window.

- Click on the *Run >>* button.

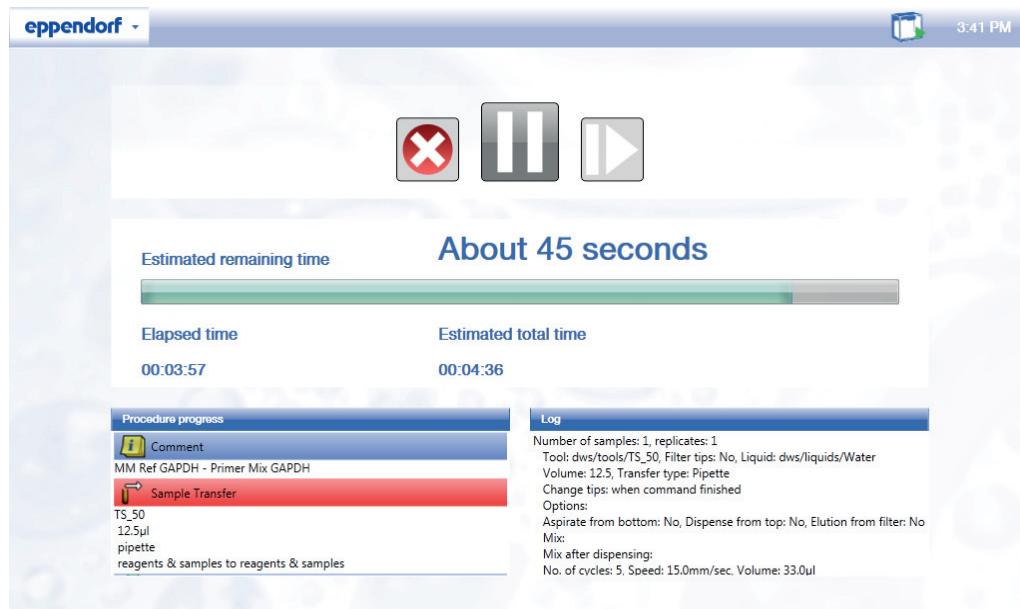


Fig. 3-16: *Run Visualizer* window



End the run. This button is active if the run has been interrupted.



Continue the run. This button is active if the run has been interrupted.



End the run. This button is active if the run has been interrupted.



Execute an individual step. This button is active if the run has been interrupted.

The *Run Visualizer* window appears.

6. Use the buttons to control the application.
7. If the application has ended, click on the *Exit to Start Screen* button.

3.3.10 Displaying and saving the protocol as a PDF file

The software automatically saves the last executed application of each assistant. The existing application will be overwritten when a new application is started.

The protocol of the last application can be viewed and saved.

1. Start *epBlue Studio* by clicking on the *epBlue Studio* symbol on the start screen.

The *Home* tab will open.

2. Select the *Create/edit applications* function in the *Tasks* area.

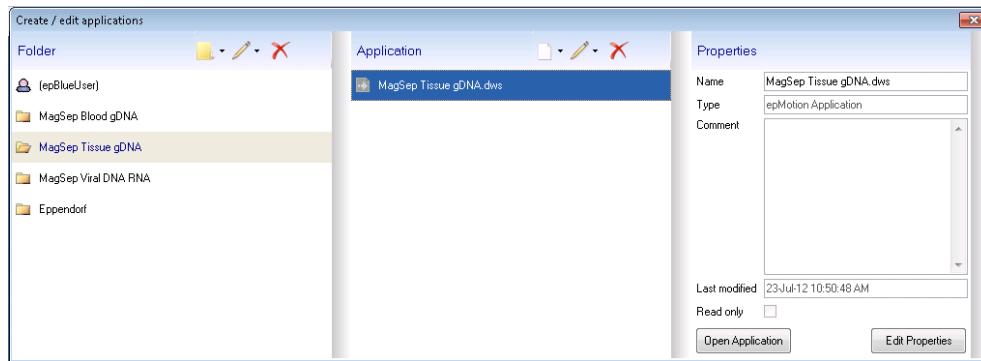


Fig. 3-18: *Create/edit applications* window

3. The *Create/edit applications* window appears.
4. Click on the *Prep Assistant* folder in the *Folder* column.
The last application appears in the *Application* column.
5. Open the application by clicking on the *Open Application* button.
6. Select the *Logs* tab.
7. Select the protocol.
The protocol will be displayed.
8. To save the protocol as a PDF file, following the description in the software operating manual.

4 Troubleshooting

4.1 Error messages

Information on error messages can be found in the software operating manual and the epMotion hardware operating manual.

If an error occurs, check the following items first:

Symptom/message	Cause	Remedy
An error message appears before the start of the application.	<ul style="list-style-type: none"> A volume in the application is larger than the filling volume of the selected vessel. 	<ul style="list-style-type: none"> Select a vessel that holds this volume.
Your labware does not appear in the selection.	<ul style="list-style-type: none"> The labware library does not have a definition of this labware. The labware was deactivated in the labware library. 	<ul style="list-style-type: none"> Import the labware definition into the labware library. Activate the labware in the labware library.
The optical sensor does not detect the level.	<ul style="list-style-type: none"> There is foam is on the liquid. The surface of the liquid is uneven, e.g., due to the meniscus of the liquid or the formation of foam 	<ul style="list-style-type: none"> Briefly centrifuge vessels. Then quickly vortex or shake the vessels.
The optical sensor does not detect the level.	<ul style="list-style-type: none"> There is not enough liquid in the vessel. The detection limit of the optical sensor has not been reached. 	<ul style="list-style-type: none"> Enter the volume manually.

5 Ordering Information

5.1 Recommended equipment

epT.I.P.S. Motion SafeRacks are intended for the re-use of tips within an epMotion application. They feature individual and internal compartments which separates adjacent tips, in order to prevent cross contamination of residual liquid in used tips. Use of epT.I.P.S. Motion SafeRacks is recommended when the *re-use tips* option is selected in the software assistant.

Order no. (International)	Description
0030 014.618	epT.I.P.S. Motion Filter 50 µL 10 SafeRacks with 96 tips each PCR clean
0030 014.650	epT.I.P.S. Motion Filter 1 000 µL 10 SafeRacks with 96 tips each PCR clean

5.2 Alternative equipment

Order no. (International)	Description
0030 014.405 0030 015.207	epT.I.P.S. Motion 50 µL 10 racks with 96 tips each Eppendorf Quality Sterile
0030 014.480 0030 015.240	epT.I.P.S. Motion 1 000 µL 10 racks with 96 tips each Eppendorf Quality Sterile
0030 014.413 0030 015.215	epT.I.P.S. Motion Filter 50 µL 10 racks with 96 tips each PCR clean PCR clean and Sterile
0030 014.499 0030 015.258	epT.I.P.S. Motion Filter 1 000 µL 10 racks with 96 tips each PCR clean PCR clean and Sterile
0030 014.600	epT.I.P.S. Motion 50 µL 10 SafeRacks with 96 tips each Eppendorf Quality
0030 014.642	epT.I.P.S. Motion 1000 µL 10 SafeRacks with 96 tips each Eppendorf Quality

5.3 MagSep Kits

Order no. (International)	Description
0030 450.000	MagSep Tissue gDNA Kit Reagent kit for DNA purification of 4 × 24 tissue and cell samples
0030 451.007	MagSep Blood gDNA Kit Reagent kit for DNA purification of 4 × 24 blood samples
0030 452.003	MagSep Viral DNA/RNA Kit Reagent kit for viral DNA/RNA purification of 4 × 24 cell-free biological fluid samples.

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