invitrogen

EveryPrep™ Universal Vacuum Manifold

USER GUIDE

For rapid, parallel processing of nucleic acids using vacuum assisted elution

Catalog Number K211101

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Revision A.0

The information in this guide is subject to change without notice.

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Revision	Date	Description
A.0	30 September 2016	Replaced discontinued parts.
—	24 March 2009	Baseline for revisions.

Corporate entity: Life Technologies Corporation | Carlsbad, CA 92008 USA | Toll Free in USA 1 800 955 6288

Contents

Kit contents and storage

Shipping and storage

The EveryPrep™ Universal Vacuum Manifold is shipped at room temperature.

Upon receipt, and after each use, store the cleaned and dried manifold at room temperature.

System components

The components included with the EveryPrep™ Universal Vacuum Manifold are listed below.

Component	Quantity
EveryPrep™ Universal Vacuum Manifold Base	1 each
EveryPrep™ Mini Elution Plate	1 each
EveryPrep™ Midi/Maxi Elution Plate	1 each
EveryPrep™ Luer Plate	1 each
EveryPrep™ 96 Well Plate	1 each
Waste Tray	1 each
Waste Cover	1 each
EveryPrep™ Elution Rack	1 each
EveryPrep™ 96 Well Binding Collar	1 each
EveryPrep™ 96 Well Elution Block	1 each
Luer Taps	18
Rubber Stoppers, Mini	24
Rubber Stoppers, Midi/Maxi	8

Additional products

Additional products

The following additional products, including a variety of nucleic acid purification kits, are available for use with the EveryPrep™ Universal Vacuum Manifold.

For more details on these products, visit our website at ww.thermofisher.com, or contact Technical Support.

Product	Quantity	Catalog no.
EveryPrep™ Accessory Kit	1 kit	K211102
ChargeSwitch®-Pro Filter Plasmid Miniprep Kit	10 preps 100 preps	CS31102 CS31103
ChargeSwitch®-Pro Filter Plasmid Midiprep Kit	25 preps	CS31104
ChargeSwitch®-Pro Filter Plasmid Maxiprep Kit	10 preps 25 preps	CS31106 CS31107
ChargeSwitch®-Pro Plasmid Miniprep Kit	10 preps 50 preps 250 preps	CS30010 CS30050 CS30250
ChargeSwitch® PCR Clean-Up Kit	100 preps 960 preps	CS12000 CS1200010
PureLink™ *Pro*Quick96 Plasmid Kit	4 x 96 preps 24 x 96 preps	K2110-04A K2110-24A
PureLink™ 96 Genomic DNA Kit	4 x 96 preps	K182104
PureLink™ *Pro*96 Viral RNA/DNA Kit	4 x 96 preps	12280096A
PureLink™ *Pro*96 Total RNA Purification Kit	384 preps	12173011A
PureLink™ *Pro*96 PCR Purification Kit	4 plates	K310096A

Introduction

Overview

Introduction

The EveryPrep™ Universal Vacuum Manifold is a dual chamber vacuum manifold constructed of red anodized aluminum designed for rapid semiautomated, vacuum assisted purification of nucleic acids using a standard vacuum source. The manifold reduces sample handling to a minimum by allowing direct parallel and simultaneous processing of up to 24 mini columns, 8 midi or maxi columns, and 96 well medium skirted plates. For most protocols using the EveryPrep™ Universal Vacuum Manifold use of vacuum for all steps (including elution) eliminates the need for time-consuming pipetting and centrifugation.

Note: The EveryPrep™ Universal Vacuum Manifold is not designed for use with automated liquid handling systems.

Manifold features

The EveryPrep™ Universal Vacuum Manifold offers the following features and advantages:

- Allows rapid and simultaneous processing of up to 96 samples of nucleic acids
- Compatible with a variety of nucleic acid purification kits (see below)
- Eliminates cross-contamination of samples when properly assembled
- Resistant to routine laboratory chemicals
- Vacuum assisted elution protocol

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Vacuum requirements

The EveryPrep™ Universal Vacuum Manifold can be used with the following vacuum sources:

- House Vacuum (ducted to the laboratory)
- Vacuum Pump (capable of generating 20 in. Hg vacuum)
- Water Aspirator
- 3/8 inch tubing to connect vacuum source to manifold

Manifold applications

The EveryPrep™ Universal Vacuum Manifold is suitable for use with the following nucleic acid purification kits.

Application	Kit
Plasmid Purification	PureLink™ Quick96 Plasmid Kit PureLink™ 96 HQ Mini Plasmid Kit ChargeSwitch®-Pro Filter Plasmid Miniprep Kit ChargeSwitch®-Pro Filter Plasmid Midiprep Kit ChargeSwitch®-Pro Filter Plasmid Maxiprep Kit
RNA Purification	PureLink™ 96 Total RNA Purification Kit
Viral RNA/DNA	PureLink™ 96 Viral RNA/DNA Kit
Genomic DNA Purification	PureLink™ 96 Genomic DNA Kit
PCR Clean-Up	PureLink™ 96 PCR Purification Kit ChargeSwitch® PCR Clean-Up Kit

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Manifold specifications

The EveryPrep™ Universal Vacuum Manifold is suitable for use with the following nucleic acid purification kits:

Part	Dimensions (L x W x H)	Features
Manifold Base	30 cm x 30 cm x 6.5 cm	Dual chambers for washing and elution
Mini Elution Top Plate	19.1 cm x 14.3 cm x 1 cm	Accomodates up to 24 mini columns
Midi/Maxi Elution Top Plate	19.1 cm x 14.3 cm x 1 cm	Accomodates up to 8 midi or maxi columns
96 Well Top Plate	19.1 cm x 14.3 cm x 1 cm	Accomodates 96 well medium skirted plates
Luer Top Plate	17 cm x 12.2 cm x 0.3 cm	Accomodates up to 18 columns
Waste Cover	19.1 cm x 14.3 cm x 2.2 cm	

Chemical properties of the manifold

The table below presents the materials and resistance properties of the EveryPrep™ Universal Vacuum Manifold.

Note: Although the manifold parts are resistant to certain chemicals, we recommend avoiding prolonged exposure to these chemicals. Do not expose the manifold parts to the chemicals listed in the **not resistant** column.

Manifold Part	Part Material	Parts are resistant to:	Parts are <u>not</u> resistant to:
Manifold Base and Top Plates	Anodized aluminum	Dilute Acetic Acid Ethanol Guanidine-HCl Sodium Chloride (NaCl) Dilute Sodium Hydroxide (NaOH) Sodium Dodecyl - Sulfate (SDS)	Acetone Phenol Toluene Chlorine bleach Any apolar organic solvents
Gaskets and o-rings	Silicon rubber		
Waste Tray, Elution Block, Elution Rack, Binding Collar	Polypropylene		
Manifold Toolbar and Valves	Stainless steel, other metals		

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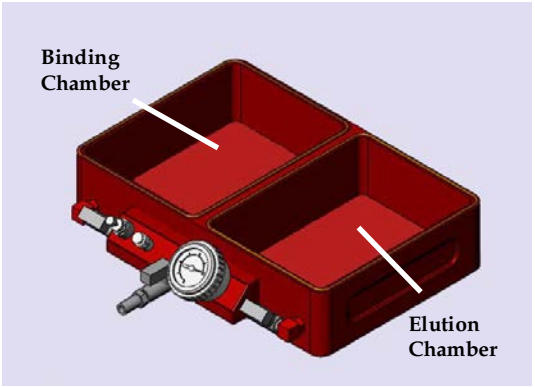
Description of parts

Manifold base

The Manifold Base has a dual chamber design allowing for the separation of binding and washing steps from elution steps during the purification protocol. By convention, the left chamber is designated the binding chamber, while the right chamber is designated the elution chamber. At the front of the manifold base is the toolbar, which contains the valves and gauges.



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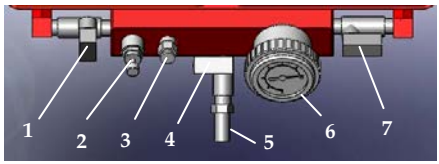
Toolbar description

The toolbar is located at the front of the Manifold Base, and contains valves to control the application of vacuum to the manifold, and a gauge to determine vacuum pressure. The parts of the toolbar are described below:



1. **Valve to Binding Chamber (Valve 1):**

   Valve 1 is used to control vacuum to the binding chamber. Open the valve to apply vacuum to the binding chamber. Close the valve to isolate the binding from the vacuum.

   Refer to the images below to open and close the valve.

Closed   **Open**

2. **Fine Control Valve (Valve 2):**

   The Fine Control Valve is used to adjust the vacuum pressure within a chamber by leaking air into the system at a specific level determined by the operator. To use the valve, close valves 1, 4, and 7. Open valve 2 completely by turning the knob counterclockwise. Open valve 4 to allow vacuum to access the toolbar. Wait until the gauge reads 0 in. Hg. Open the valve to the chamber to be evacuated, and adjust the pressure to the desired level by turning the knob clockwise.

3. **Quick Release Valve (Valve 3):**

   This valve is used for rapid release of the vacuum from the manifold base. Valve 4 must be closed to use the Quick Release Valve. Press and hold the valve until ventilation is complete.

4. **Manifold Valve (Valve 4):**

   Valve 4 attaches to the vacuum line for pressure reduction, and is used to isolate the manifold to release vacuum without having to turn off the pump. Open the valve to apply pressure, and close the valve when the manifold is to be ventilated. See diagram above to open and close the valve.

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Toolbar description, continued

5. **Spigot:**

   The spigot attaches to the vacuum line (3/8 inch tubing) to the vacuum source for pressure reduction.

6. **Vacuum Pressure Gauge:**

   The Vacuum Pressure Gauge measures the pressure difference between the inside of the vacuum manifold and the outside (atmospheric pressure). Units on the gauge are in in. Hg and mbars, and reads from 0–30 in. Hg. Recommended operating range for this device is not greater than 20 in. Hg.

   Note: Pressure conversions are provided on page 11.

7. **Valve to Elution Chamber (Valve 7):**

   Valve 7 is used to control vacuum to the elution chamber. Open the valve to apply vacuum to the elution chamber. Close the valve to isolate the elution chamber from the vacuum. See diagram on previous page to open and close the valve.

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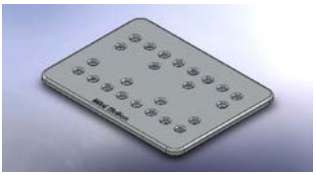
Mini elution top plate

The Mini Elution Top Plate is used to perform mini column based purification protocols. The aluminum top plate fits on top of the manifold base. Up to 24 mini columns can be accommodated in the top plate.

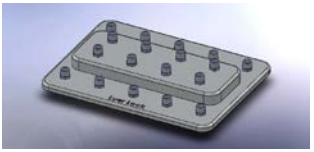


Midi/Maxi elution top plate

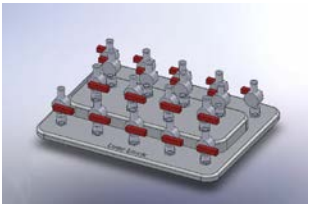
The Midi/Maxi Elution Top Plate is used to perform midi and maxi column based purification protocols. The aluminum top plate fits on top of the manifold base. Up to 8 midi or maxi columns can be accommodated in the top plate.

Luer top plate

The Luer Top Plate is used to perform column based purification protocols. The plate has 18 luer taps, and fits over the binding chamber of the manifold base. The luer taps are universal fittings, and spaced to maximize the number of samples processed while avoiding crowding.



Prior to use, the supplied luer taps should be fitted into the luer plate.



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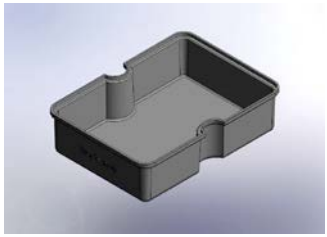
Description of parts, Continued

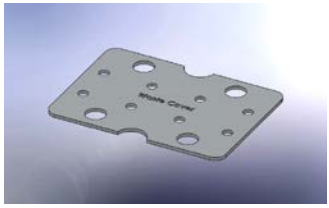
Waste tray

The waste tray is placed inside the binding chamber of the manifold base to collect liquid waste produced during purification.



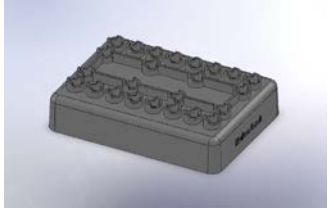
Waste cover

The Waste Cover is used in conjunction with the Midi/Maxi Elution Top Plate to perform midi and maxi column based purification protocols. The aluminum top plate fits over the Waste Tray in the binding chamber to fix the distance that a midi or maxi column can be pushed into the Midi/Maxi Elution Top Plate.



Elution rack

The Elution rack is used during the elution procedure in column based purification protocols. The rack is placed in the elution chamber, and holds up to 24 standard 1.7 ml centrifuge tubes.



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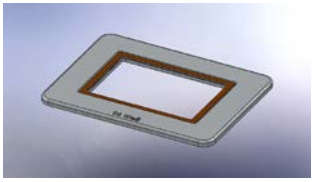
Description of Parts, Continued

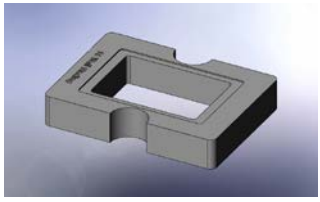
96 well top plate

The 96 Well Top Plate is used to perform 96 well plate based purification protocols. The center opening is fitted with a silicon rubber gasket and fits all 96 well plates.



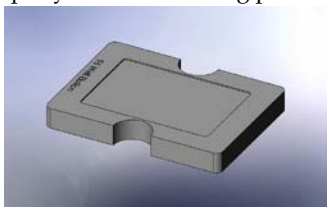
96 well binding collar

The 96 Well Binding Collar is used during the clarification procedure in 96 well based purification protocols. The rack is placed in the binding chamber to support the binding plate so that it fits properly with the clarification plate.



96 well elution block

The 96 Well Elution Block is used during the elution procedure in 96 well based purification protocols. The block is placed in the elution chamber to support the elution plate so that it fits properly with the binding plate.



Methods

General guidelines

Introduction

General guidelines for using the EveryPrep™ Universal Vacuum Manifold are described below. Review this section before using the manifold.

Guidelines for assembling the vacuum manifold for the following applications are described:

- The vacuum manifold operates under pressure. For your protection, wear a laboratory coat, gloves, and safety glasses when operating the manifold.
- The manifold has a maximum vacuum reduction threshold of –800 millibars (mbars) (800 mbars below atmospheric pressure). For safety reasons, do not exceed –800 mbars. **Exceeding –800 mbars of vacuum pressure will void the product warranty.**
- Use only the recommended vacuum pressure stated in your purification kit manual. Using higher than the recommended vacuum pressure may cause sample splattering or inefficient nucleic acid binding, while using a lower than recommended vacuum pressure affects the elution, resulting in lower recovery.

Important

Thermo Fisher Scientific is not responsible for any injury or damage caused by the use of this unit when operated for purposes which it is not intended. **Use of the manifold in a manner not specified in this manual, will void the warranty offered on this unit.** All repairs and service to this unit should be performed by Thermo Fisher Scientific.

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General guidelines, Continued

Follow the recommendations below to obtain the best results when using the EveryPrep™ Universal Vacuum Manifold.

- Always operate the manifold on a secure, flat lab bench or work area.
- Ensure proper use and maintenance of the manifold (see page 21).
- Use the Fine Control Valve during high-throughput processing to attain consistent purification results and achieve specific pressure ranges. Gentle vacuum (<5 in. Hg) is recommended when eluting into 2 ml tubes with volumes in the range of 1.5 to 1.75 ml.
- Do not exceed 1.75 ml elution volume unless using an elution tube with greater than 2 ml capacity in the Elution Rack, as air flow through the column will be obstructed and cause splashing from the elution tube.
- Use the Quick Release Valve to ventilate the vacuum without disconnecting the vacuum source.

Vacuum sources

The EveryPrep™ Universal Vacuum Manifold can be used with the following vacuum sources:

- House Vacuum (ducted to the laboratory)
- Vacuum Pump (capable of generating 20 in. Hg vacuum)
- Water Aspirator

Pressure conversions

The table below provides information to convert pressure from millibars into other commonly used units.

If converting from millibars to…	Then multiply by…
atmospheres (atm)	0.000987
bars	0.001
inches of Mercury (in. Hg)	0.0394
millimeters of Mercury (mm Hg)	0.75
pounds per square inch (psi)	0.0145

Assembly and operation with mini elution plate

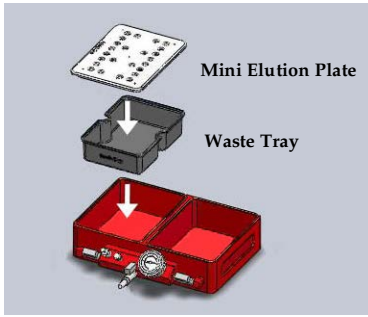
Introduction

A general protocol for the purification of nucleic acids from a cleared lysate solution is given below. The projected time for the procedure is ~10 minutes for 24 columns.

For details on how to perform each step, refer to the manual for the purification kit you are using.

1. Connect the manifold via the spigot to a vacuum source (page 11).
2. **Close** the manifold valve (valve 4) and the valve to the elution chamber (valve 7). **Open** the valve to the binding chamber (valve 1). Turn on the vacuum source.

3. Insert the Waste Tray into the binding chamber of the Manifold Base.
4. Seat the Mini Elution Plate above the Waste Tray on the manifold base.
5. Insert the required number of columns firmly into the plate. Block any remaining holes with the provided mini stoppers (size 0000).
6. Transfer lysates into the columns.



7. **Open** the manifold valve (valve 4) and apply maximum vacuum pressure (15–20 in. Hg) until the liquid has passed through the column.

8. **Close** the manifold valve (valve 4) and ventilate the manifold by pressing the quick release valve (valve 3).

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Assembly and operation with mini elution plate, Continued

9. Add wash buffer to columns.

10. **Open** the manifold valve (valve 4) and apply maximum vacuum pressure (15–20 in. Hg) until the liquid has passed through the column.

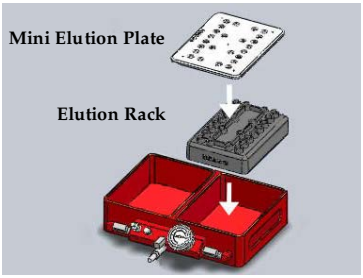
11. **Close** the manifold valve (valve 4) and ventilate the manifold by pressing the quick release valve (valve 3).

12. Repeat wash steps 8–9 as needed.

13. Prepare Elution Rack by placing elution tubes in positions corresponding to the location of columns in the Mini Elution Plate.

14. Insert the Elution Rack into the elution chamber of the Manifold Base.

15. Transfer the Mini Plate to the elution chamber.



16. **Close** the valve to the binding chamber (valve 1), and **open** the valve to the elution chamber (valve 7).

17. Add elution buffer to column.

18. **Open** the manifold valve (valve 4) and apply maximum vacuum pressure until the liquid has passed through the column and into the elution tubes.

19. **Close** the manifold valve (valve 4) and ventilate the manifold by pressing the quick release valve (valve 3).

20. Proceed to **Disassembly** (page 21).

Assembly and operation with midi/maxi elution plate

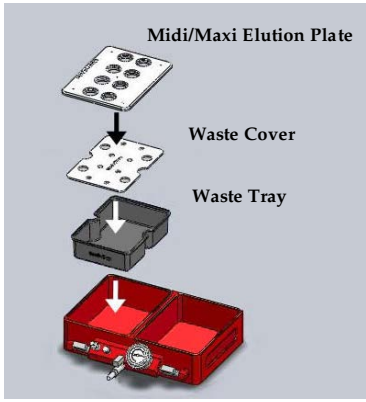
Introduction

A general protocol for the purification of nucleic acids from a cleared lysate solution is given below. The projected time for the procedure is ~10 minutes for 8 columns.

For details on how to perform each step, refer to the manual for the purification kit you are using.

1. Connect the manifold via the spigot to a vacuum source (page 11).
2. **Close** the manifold valve (valve 4) and the valve to the elution chamber (valve 7). **Open** the valve to the binding chamber (valve 1). Turn on the vacuum source.

3. Insert the Waste Tray into the binding chamber of the Manifold Base.
4. Seat the Waste Cover above the Waste Tray on the manifold base.
5. Seat the Midi/Maxi Elution Plate above the Waste Tray on the manifold base.
6. Insert the required number of columns firmly into the plate. Block the remaining holes with the provided midi/maxi stoppers (size 5.5).
7. Transfer lysates into the columns.



8. **Open** the manifold valve (valve 4) and apply maximum vacuum pressure (15–20 in. Hg) until the liquid has passed through the column.

9. **Close** the manifold valve (valve 4) and ventilate the manifold by pressing the quick release valve (valve 3).

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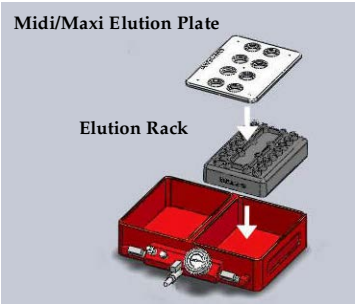
Assembly and operation with midi/maxi elution plate, Continued

10. Add wash buffer to columns.
11. **Open** the manifold valve and apply maximum vacuum pressure (15–20 in. Hg) until the liquid has passed through the column.

12. **Close** the manifold valve and ventilate the manifold by pressing the quick release valve.
13. Repeat wash steps 8–9 as needed.

14. Prepare Elution Rack by placing elution tubes in positions corresponding to the location of columns in the Midi/Maxi Elution Plate.
15. Insert the Elution Rack into the elution chamber of the Manifold Base.
16. Transfer the Midi/Maxi Elution Plate to the elution chamber.



17. **Close** the valve to the binding chamber, and **open** the valve to the elution chamber.
18. Add elution buffer to column.

19. **Open** the manifold valve and apply maximum vacuum pressure until the liquid has passed through the column and into the elution tubes.

20. **Close** the manifold valve and ventilate the manifold by pressing the quick release valve.
21. Proceed to **Disassembly** (page 21).

Assembly and operation with Luer plate

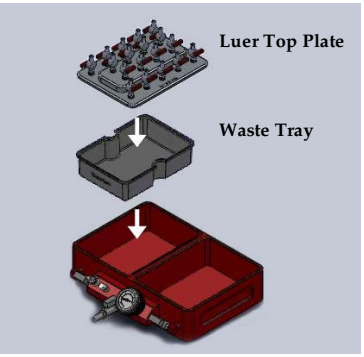
Introduction

A general protocol for the purification of plasmid DNA from a cleared lysate solution is given below. The projected time for the procedure is ~10 minutes for 18 columns.

For details on how to perform each step, refer to the manual for the purification kit you are using.

1. Connect the manifold via the spigot to a vacuum source (page 11).
2. **Close** the manifold valve (valve 4) and the valve to the elution chamber (valve 7). **Open** the valve to the binding chamber (valve 1). Turn on the vacuum source.

3. Insert the Waste Tray into the binding chamber of the Manifold Base.
4. Seat the Luer Plate above the Waste Tray on the manifold base.
5. Insert the required number of columns onto the luer fittings. Open luer taps for positions with columns. All remaining taps should be closed.
6. Transfer lysates into the columns.



7. **Open** the manifold valve (valve 4) and apply maximum vacuum pressure (15–20 in. Hg) until the liquid has passed through the column.

8. **Close** the manifold valve (valve 4) and ventilate the manifold by pressing the quick release valve (valve 3).

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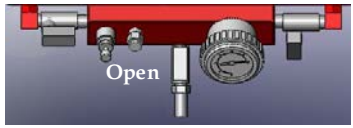
Assembly and operation with Luer plate, Continued

9. Add wash buffer to column.
10. **Open** the manifold valve (valve 4) and apply maximum vacuum pressure (15–20 in. Hg) until the liquid has passed through the column.
11. **Close** the manifold valve (valve 4) and ventilate the manifold by pressing the quick release valve (valve 3).
12. Repeat wash steps 8–9 as needed.
13. Remove the columns from the luer taps. Place the columns into clean 50 ml tubes (midiprep or maxiprep) or microcentrifuge tubes (miniprep) for elution.
14. Add elution buffer to columns.
15. Elute samples by spinning in a swinging bucket centrifuge (midiprep or maxiprep) or microcentrifuge (miniprep).
16. Proceed to **Disassembly** (page 21).



Assembly and operation with 96 well top plate

Introduction

A protocol for the purification of plasmid DNA from lysed cells is given below. The projected time for the procedure is ~23 minutes for each 96 well plate.

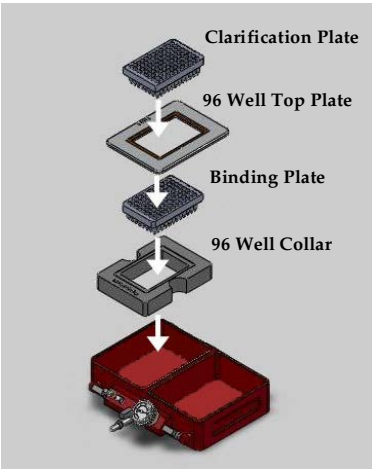
For details on how to perform each step, refer to the manual for the purification kit you are using.

Assembly with 96 Well Top Plate

Instructions for assembling the vacuum manifold for 96 well plate purification protocols are described below.

1. Connect the manifold via the spigot to a vacuum source (page 11). **Close** the manifold valve (valve 4) and the valve to the elution chamber (valve 7). **Open** the valve to the binding chamber (valve 1). Turn on the vacuum source.

2. Place the 96 Well Collar into the binding chamber of the Manifold Base.
3. Seat the binding plate above on 96 Well Collar in the manifold base.
4. Seat the 96 Well Plate above the binding plate.
5. Place the clarification plate onto the gasket of the 96 Well Plate. The nozzles of the clarification plate should align with the corresponding columns of the binding plate to ensure a proper seal.
6. Transfer lysates into the columns carefully. If any positions of the 96 well plate are not used, be sure to seal them with foil to assist in the generation of vacuum.



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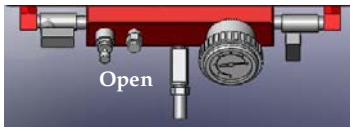
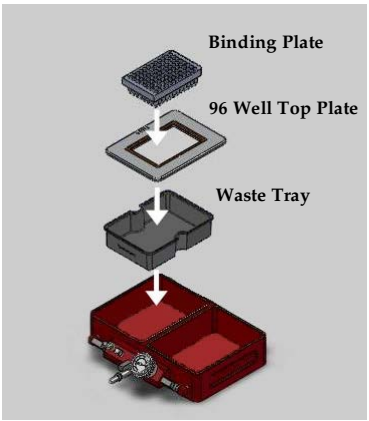
Assembly and operation with 96 well top plate, Continued

7. **Open** the manifold valve (valve 4) and apply maximum vacuum pressure (15–20 in. Hg) until the liquid has passed through the column.

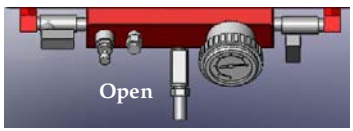


8. **Close** the manifold valve (valve 4) and ventilate the manifold by pressing the quick release valve (valve 3).

9. Discard the clarification plate and remove the 96 Well Plate.
10. Remove the binding plate and 96 Well Collar from the binding chamber.
11. Insert the Waste Tray into the binding chamber of the Manifold Base.
12. Place the 96 Well Plate Top over the binding chamber of the manifold base.
13. Place the binding plate onto the gasket of the 96 Well Plate such that a proper seal is formed between the binding plate and the gasket.
14. Add wash buffer to columns.



15. **Open** the manifold valve (valve 4) and apply maximum vacuum pressure (15–20 in. Hg) until the liquid has passed through the column.

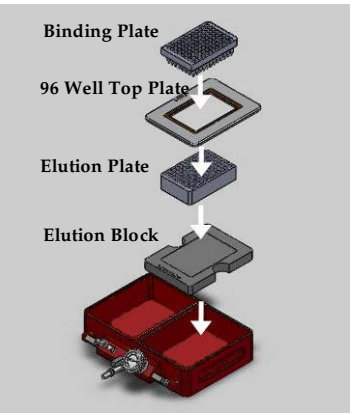


16. **Close** the manifold valve (valve 4) and ventilate the manifold by pressing the quick release valve (valve 3).
17. Repeat wash steps 8–9 as needed.

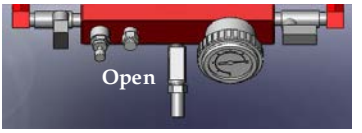
Continued on next page

Assembly and Operation with 96 Well Top Plate, Continued

18. Place the Elution Block into the elution chamber of the Manifold Base.
19. Place the elution plate on top of the Elution Block in the elution chamber.
20. Transfer the 96 Well Top Plate with binding plate to the top of the elution chamber, ensuring that a proper seal is formed between the binding plate and the gasket.



21. **Close** the valve to the binding chamber (valve 1), and **open** the valve to the elution chamber (valve 7).
22. Add elution buffer to column.
23. **Open** the manifold valve (valve 4) and apply maximum vacuum pressure until the liquid has passed through the columns and into the elution tubes.
24. **Close** the manifold valve (valve 4) and ventilate the manifold by pressing the quick release valve (valve 3).
25. Proceed to **Disassembly** (page 21).



Disassembly and care

Disassembly of the EveryPrep™ Universal Vacuum Manifold

- When finished using the EveryPrep™ Universal Vacuum Manifold, turn of the vacuum source, and use the quick release valve (valve 3) to release the vacuum.
- Remove the Top Plate and Wash Tray/Waste Cover from the Binding Chamber.
- Remove the Top Plate and Elution Rack/Block from the Elution Chamber.
- Store purified plasmid DNA at 4° C for immediate use or at –20° C for long-term storage.
- Discard used disposable tubes, plates, and columns.

Care and maintenance of the EveryPrep™ Universal Vacuum Manifold

Care and maintenance guidelines for the EveryPrep™ Universal Vacuum manifold are provided below.

Maintaining the Manifold

- Wash and disassemble the parts of the manifold after each use (see below). **Do not autoclave the manifold or its components.**
- Store the manifold clean and dry, at room temperature.
- Keep the manifold valve clean and dry to ensure optimal vacuum conditions.
- **Do not** exceed –800 mbars of vacuum reduction.
- **Do not** apply silicone or vacuum grease to the gaskets or any other part of the vacuum manifold. If gaskets are damaged, see **Troubleshooting** on page 22.
- Avoid exposing any part of the manifold to harsh chemicals.
- Do not drop the vacuum manifold.

Washing the manifold

1. After each use, disassemble the manifold parts. Salts and buffers can dry behind or underneath a removable part and may prevent the future use or removal of the part, or may damage the manifold.
2. Thoroughly wash all manifold parts after each use with water to remove salts and buffers. **Do not use solvents, abrasives or chlorine bleach when washing the manifold.**
3. Always dry the manifold parts completely with an absorbent towel after use.

Appendix

Troubleshooting

Introduction

The table below describes solutions to possible problems you may experience with the vacuum manifold. For additional assistance, contact Technical Support.

Problem	Cause	Solution
	Vacuum pressure is not adequate	• Press down firmly on the top plate until vacuum is seen by observation of the Vacuum Pressure Gauge. • Make sure the Fine Control Valve is fully closed. • When using the Luer Top Plate, make sure taps with attached columns are open, and taps without columns are closed. • When using the Mini or Midi/Maxi Elution Plates, make sure the appropriate stoppers are fitted snugly into unused positions. • Ensure the valves on the manifold base and vacuum source are clear of debris or salt build-up. • Ensure that the vacuum tubing is not clogged or damaged. • Change to a new vacuum source if the current source is too weak. • Make sure the tubing is securely connected between the spigot and vacuum source.
Inadequate vacuum build-up or vacuum pressure leak	Gasket	• Check to see that the gasket is clean of salts and buffers, and is not damaged. • If the gasket is damaged, contact **Technical Support** for a replacement.

Customer and technical support

Visit **thermofisher.com/support** for the latest in services and support, including:

- Worldwide contact telephone numbers
- Product support, including:
  - Product FAQs
  - Software, patches, and updates
- Order and web support
- Product documentation, including:
  - User guides, manuals, and protocols
  - Certificates of Analysis
  - Safety Data Sheets (SDSs; also known as MSDSs)

Note: For SDSs for reagents and chemicals from other manufacturers, contact the manufacturer.

Purchaser notification

Limited product warranty

Life Technologies Corporation and/or its affiliate(s) warrant their products as set forth in the Life Technologies' General Terms and Conditions of Sale found on Life Technologies' website at www.thermofisher.com/us/en/home/global/terms-and-conditions.html. If you have any questions, please contact Life Technologies at www.thermofisher.com/support.

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30 September 2016