



NucleoVac 96 vacuum manifold

User manual

June 2007/ Rev. 04

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1 Contents

NucleoVac 96	
Cat. No.	740 681
NucleoVac 96 manifold base	1
NucleoVac 96 manifold lid	1
Waste container	2
MN Tube Strips*	2
	2 spacers for "MTP/Multi-96 plates"
Spacer set	2 spacers for "round-well blocks"
	2 spacers for "square-well blocks"
	2 spacers for "microtube rack"
User manual	1

Note:

For processing the NucleoSpin® 8-well strips on the NucleoVac 96 the Starter Set A is required.

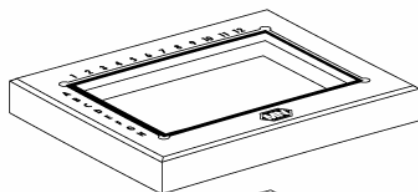
* Set of 1 rack, 12 strips with 8 tubes each.

2 Product description

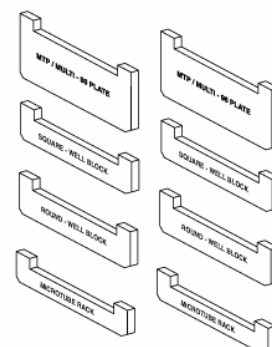
The NucleoVac 96 vacuum manifold is designed for the rapid manual parallel purification of nucleic acids using the 8-well and 96-well NucleoSpin® kits and the NucleoFast kits. The NucleoSpin® 8/96 kits are based on MACHEREY-NAGEL's well known NucleoSpin® silica membrane technology and allow rapid simultaneous purification of high-quality nucleic acids. Time consuming centrifugation and decanting steps are eliminated by use of vacuum. The NucleoFast kits are based on ultrafiltration technology and offer a fast and convenient way of nucleic acid purification. The NucleoVac 96 manifold provides spacer sets to accommodate suitable microtiter plates, deep-well blocks (round-well and square-well blocks), or microtube racks for collecting samples.

2.1 Overview of parts

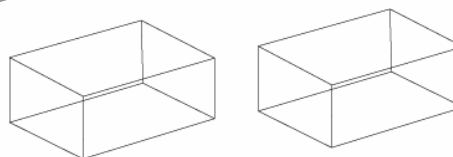
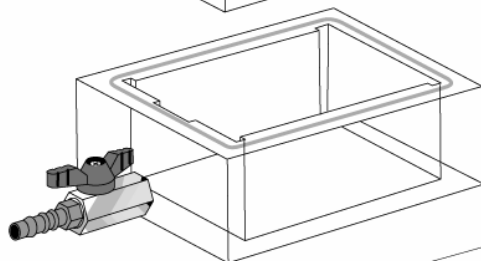
Manifold lid



Spacer set



Manifold base



Waste containers

3 General remarks

3.1 Assembly of the NucleoVac 96 vacuum manifold

Place manifold base on a secure lab bench.

For the use of the **NucleoSpin® 8** kits on the NucleoVac 96 the Starter Kit A is needed (see ordering information). This set contains the Column Holders A and MN Dummy Strips. The Column Holders A are used to hold the desired number of 8-well strips (up to six) during the preparation. The Dummy Strips are used to fill the unused rows of the Column Holders A.

If using a **NucleoSpin® 8** kit with filter and binding strips, please refer to section 4.1 for setup of the vacuum manifold. If the **NucleoSpin® 8** kit contains only binding strips, please see figure 4.2.

For the use of **NucleoSpin® 96** kits no additional hardware is necessary. If using a kit with filter and binding plates, e.g. NucleoSpin® Multi-96 Plus Plasmid, the setup is shown in section 5.1. The setup for NucleoSpin® 96 kits with only binding plates the setup can be found in section 5.2.

Please make sure that you insert the appropriate spacers into the NucleoVac 96 base to rest the binding strip/plate, the MN Wash Plate, the MN Tube Strips or the elution plate in the right distance underneath the outlets of the plate inserted into the manifold top.

For the use of **NucleoFast®** kits, insert a waste container into the manifold base. Close the manifold with the lid. Insert the NucleoFast® Plate into the manifold lid and start procedure according to the kit protocol. Unused wells do not have to be taped. The use of the provided spacers is not necessary. For the detailed setup refer to section 6.1.

3.2 Setting up vacuum

Connect the manifold to a suitable vacuum source like a water aspirator, house vacuum, or vacuum pump (e.g. KNF Laboport vacuum pump NB 840.3). Close the manifold's valve before adjusting vacuum. Adjust vacuum according to the kit protocol by using an appropriate regulator (e.g. Cat. No. 740 641). Alternatively, vacuum can be adjusted by measuring the flow through of samples (see kit protocols).

3.3 Apply vacuum

Load samples into the individual wells of the filter or binding strips/plate. Open valve and if necessary press down the strips/plate shortly until flow starts.

3.4 Ventilate manifold

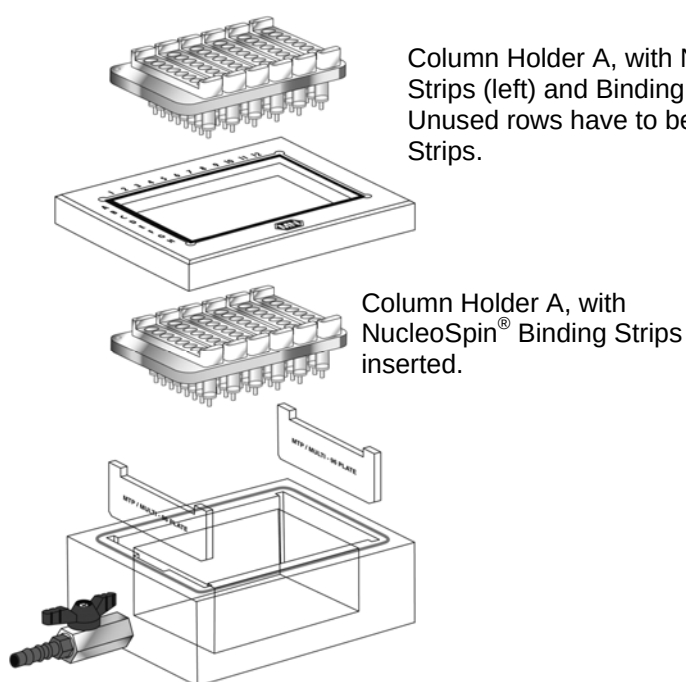
When the samples have passed the wells, close valve and wait about 10 - 20 seconds until the NucleoSpin® 96-well plate or the Column Holder A with the 8-well strips can be removed easily. For NucleoFast plates make sure that the manifold is completely ventilated after each vacuum step. Ventilate for 60 – 90 seconds.

4 Use of NucleoSpin® 8 kits

4.1 NucleoSpin® 8 kits with filter and binding strips

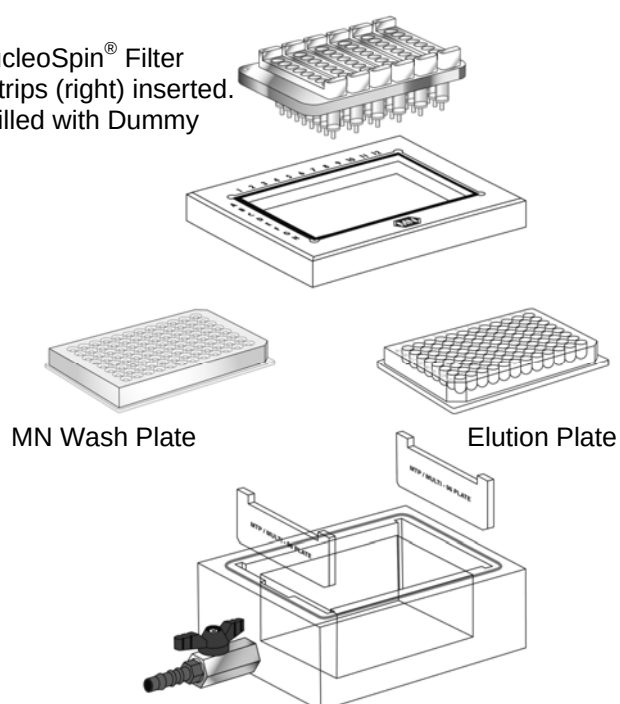
Processing of a NucleoSpin® 8 kit with filter and binding plates, e.g. NucleoSpin® Multi-8 Plus Plasmid, is performed in two steps:

Filtration



Manifold base with spacers "MTP/Multi-96 Plate" inserted.

Binding/Washing/Elution

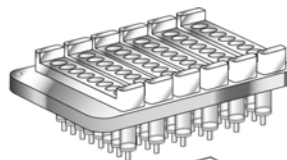


Manifold base with spacers "MTP/Multi-96 Plate" inserted. Optionally, elution can be performed into MN Tube Strips. Insert the appropriate spacers.

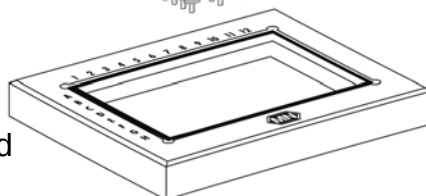
4.2 NucleoSpin® 8 kits with binding strip only

Processing of a NucleoSpin® 8 kit which contains only binding strips, e.g. NucleoSpin® Multi-8 Extract:

Column Holder A, with NucleoSpin® Binding Strips inserted. Unused rows have to be filled with Dummy Strips



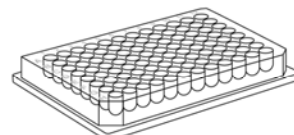
Manifold lid



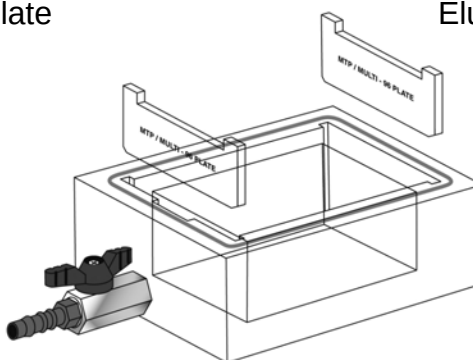
MN Wash Plate



Elution Plate



Manifold base with spacers
“MTP/Multi-96 Plate” inserted



Optionally, elution can be performed into MN Tube Strips. Insert the appropriate spacers.

5 Use of NucleoSpin® 96 kits

5.1 NucleoSpin® 96 kits with filter and binding plate

Processing of a NucleoSpin® 96 kit with filter and binding plates, e.g. NucleoSpin® Multi-96 Plus Plasmid, is performed in two steps:

Filtration

NS Filter Plate

Manifold lid

NS Binding Plate

Manifold base
with spacers "MTP/Multi-96 Plate"
and waste tray inserted

Binding, washing, and elution

NS Binding Plate

Manifold lid

MN Wash Plate

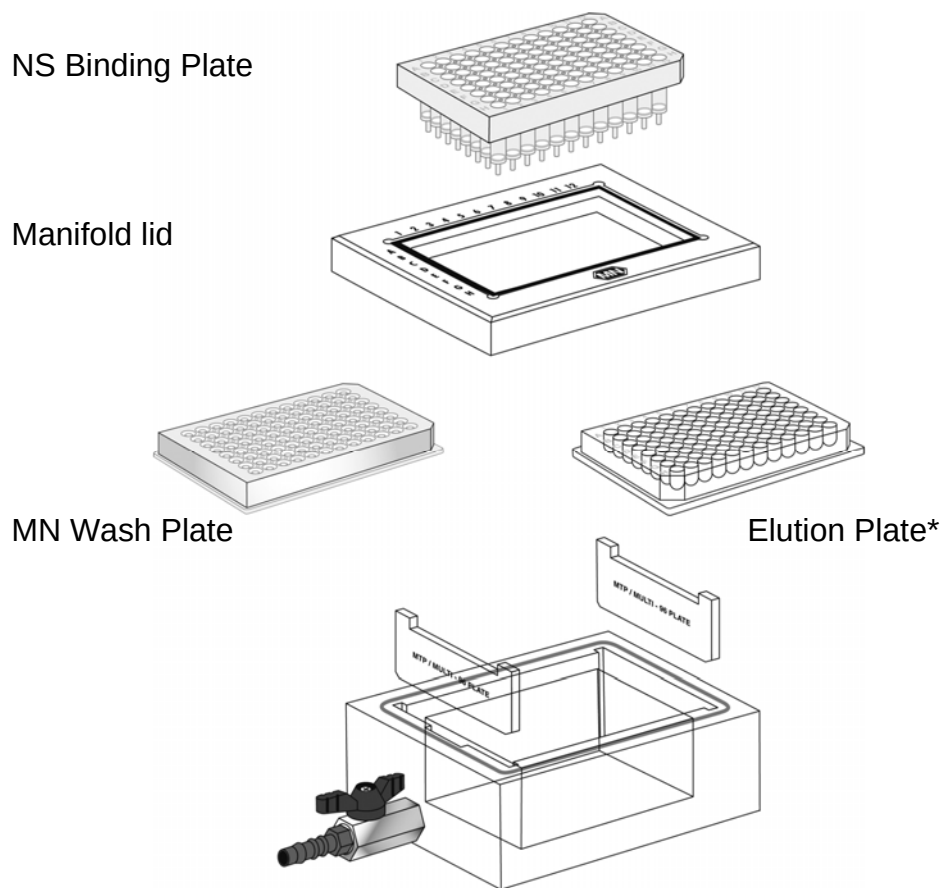
Elution Plate

Manifold base
with spacers "MTP/Multi-96 Plate"
and waste tray inserted

*Alternatively, a round-well block, square-well block, or MN Tube Strips can be used for elution. Use the appropriate spacers.

5.2 NucleoSpin® 96 kits with binding plate only

Processing of a NucleoSpin® kit which contains only binding plates, e.g. NucleoSpin® Multi-96 Extract:



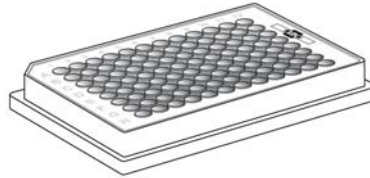
Manifold base
with spacers "MTP/Multi-96 Plate" and
waste tray inserted

*Alternatively, a round-well block, square-well
block, or MN Tube Strips can be used for elution.
Use the appropriate spacers.

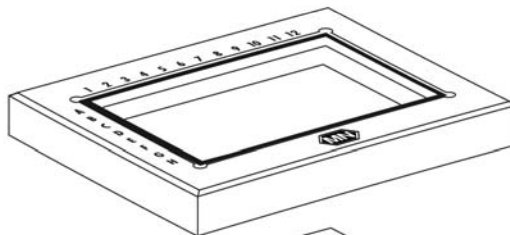
6 Use of NucleoFast kits

NucleoFast kits, e.g. NucleoFast 96 PCR, can easily be used on the NucleoVac 96. The spacers provided with the NucleoVac 96 manifold are not used, inside the vacuum chamber only the waste container is placed.

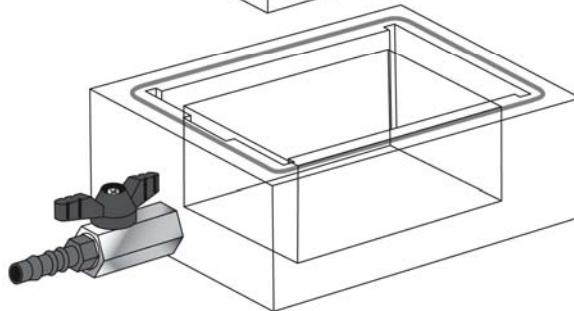
NucleoFast Plate



Manifold lid



Manifold base
with waste tray inserted



7 Appendix

7.1 Pressure conversions

1 mbar = 100 Pa = 0.987×10^{-3} atm = 0,750 mm Hg = 14.504×10^{-3} psi

7.2 Manifold care

The manifold consists of an acrylic base and spacers, a PVC cover lid, and a valve made of stainless steel and other metals. Do not autoclave either manifold or cover lid. The parts of the manifold are resistant to diluted acetic acid, ethanol, guanidine-HCl, NaCl, NaOH, SDS. However, prolonged exposure of the manifold to these chemicals should be avoided. Therefore, after DNA purification rinse all parts of the manifold (particularly the valve) carefully with water and dry them thoroughly. The manifold must not come in contact with acetone, phenol, toluene, or other apolar organic solvents.

7.3 Troubleshooting

Problem	Possible cause and suggestions
Vacuum is not build up properly	<i>Gasket</i> • Insert a microtiter plate with closed, rectangular bottom into the manifold lid. The gasket of the vacuum manifold must be covered completely by the microtiter plate. Apply vacuum to the manifold and test the vacuum. The MTP should be fixed now by vacuum.
	<i>The vacuum manifold</i> • Are there any cracks on the surface of the vacuum manifold? • Check the main valve: is it tightly fixed into the vacuum manifold? • Are there any cracks around the valve?

7.4 Ordering information

Product	Cat. No.	Pack of
Starter Set A, for processing the NucleoSpin® 8 Strips on the NucleoVac 96	740 682	1 set
Dummy Strips	740 685	6
Vacuum regulator	740 641	1
Replacement parts for the NucleoVac 96 are available upon request		
Square-well blocks	740 678	20
Self-adhering PE foil	740 676	50 sheets
Gas-permeable foil	740 675	50 sheets
MN tube strips (1 rack, 12 strips/8 tubes each)	740 637	5 racks

7.5 Product Use Restriction / Warranty

NucleoVac 96 vacuum manifold kit components were developed, designed, distributed and sold **for RESEARCH PURPOSES ONLY**.

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