

# Vacuum Manifolds

---

**Cat. # BT2102 Universal Vacuum Manifold**

**Cat. # BT2103 Double-Layer Vacuum Manifold**

**Cat. # BT2104 Luer Inlet Vacuum Manifold**

INTRODUCTION.....	3
ORDERING INFORMATION.....	3
SUPPLIED PARTS.....	3
MANIFOLD ILLUSTRATIONS.....	4
UNIVERSAL VACUUM MANIFOLD.....	4
DOUBLE-LAYER VACUUM MANIFOLD.....	4
LUER INLET VACUUM MANIFOLD.....	4
OPERATING INSTRUCTIONS.....	5
CONNECTION OF THE VACUUM MANIFOLD AND VACUUM PUMP.....	5
96 WELL PLATE SUCTION / FILTRATION OPERATION.....	5
96 WELL PLATE FILTRATION AND BINDING.....	6
96 WELL PLATE ELUTION.....	6
SPIN COLUMN SUCTION FILTRATION.....	6
CLEANING & MAINTENANCE.....	7
CHEMICAL COMPATIBILITY.....	7
RECOMMENDED VACUUM PRESSURE.....	8
WARRANTY.....	8
TECHNICAL SUPPORT.....	8

Before using the instrument, please read the operation instruction handbook carefully. We recommend that all the components and accessories be cleaned with a suitable laboratory cleaner and rinsed thoroughly with distilled water before use.

## INTRODUCTION

BT Lab Systems' Vacuum manifolds are designed for high throughput applications, such as nucleic acid extraction, solid phase extraction, protein precipitation and Oligo Synthesis, compatible with 48/96/384 well plates and luer-inlet spin columns. The use of negative pressure avoids repeated pipetting and centrifugation and simplifies the nucleic acid extraction process.

Made of integrated anti-corrosion material and firm design, the Vacuum manifolds have excellent stability, flow rate and reproducibility. The following models are available:

- **Universal Vacuum Manifolds** are applicable to nucleic acid purification, solid phase extraction, QuEChERS, protein precipitation, and removal of matrix such as phospholipids.
- **Double-Layer Vacuum Manifolds** enable filtration and extraction at the same time, applicable to nucleic acid purification, solid phase extraction, protein precipitation and removal of matrix such as phospholipids
- **Luer-Inlet Vacuum Manifolds** applicable to large-volume nucleic acid purification.

## ORDERING INFORMATION

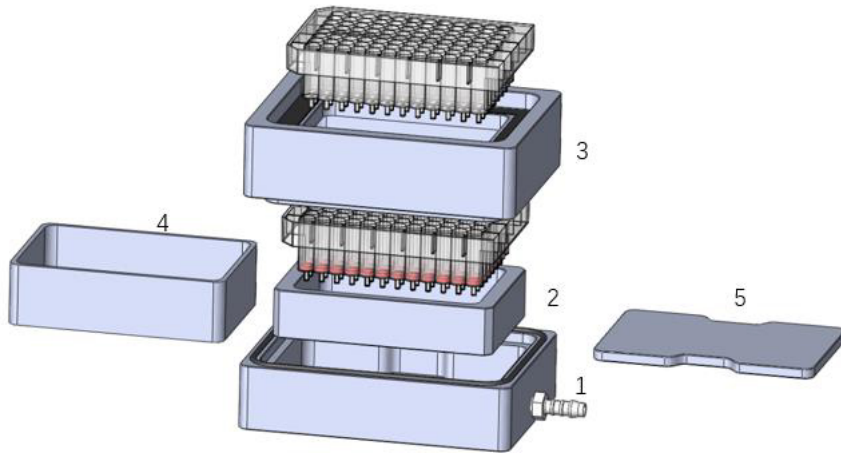
Cat. #	Description
BT2102	Universal Vacuum Manifold
BT2103	Double-Layer Vacuum Manifold
BT2104	Luer Inlet Vacuum Manifold

## SUPPLIED PARTS

Product Component	Universal Vacuum Manifold (BT2102)	Double-Layer Vacuum Manifold (BT2103)	Luer Inlet Vacuum Manifold (BT2104)
Vacuum Manifold Base	1	1	1
Waste Reservoir	1	1	1
Top Plate Support	1	2	-
Bottom Plate Support	1	1	1
6 mm Pad	1	1	-
15 mm Pad	1	1	-
12-Position Spin Column Lid	-	-	1
12-Position Collection Tube Rack	-	-	1
Connecting Tube	-	-	12
Sealing Plugs	-	-	12
Vacuum Gauge	1	1	1
Connecting pipe 1	1	1	1
Connecting pipe 1	1	1	1

## MANIFOLD ILLUSTRATIONS

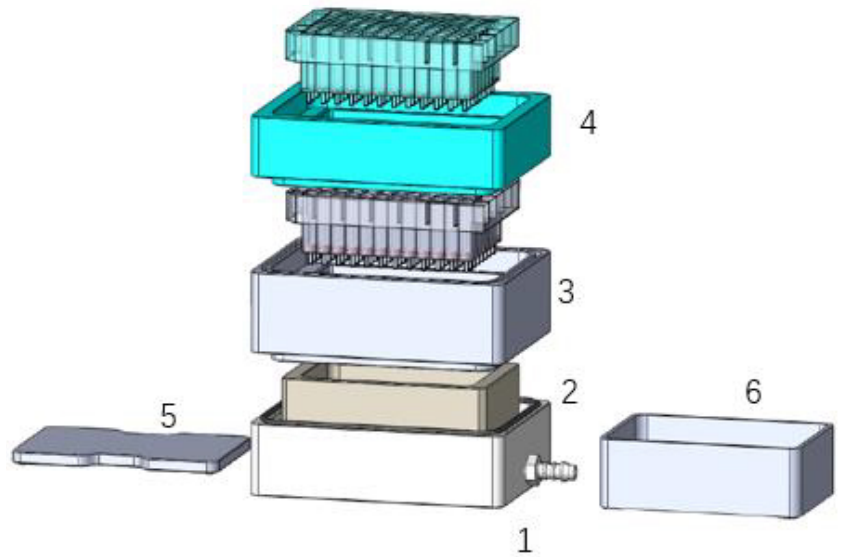
### Universal Vacuum Manifold



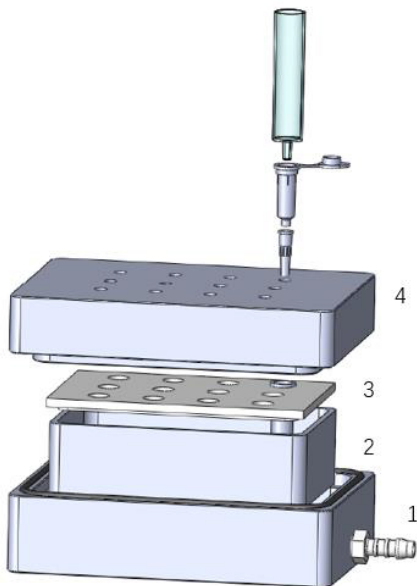
1. Base
2. Bottom plate support
3. Top Plate Support
4. Waste reservoir
5. Base Pad

### Double-Layer Vacuum Manifold

1. Base
2. Bottom Plate Support
3. Top Plate Support #1
4. Top Plate Support #2
5. Base Pad
6. Waste Reservoir



### Luer Inlet Vacuum Manifold



1. Base
2. Waste Reservoir
3. 12-position collection tube rack
4. 12 position spin column lid

1. Vacuum pump plug
2. Adjusting Knob
3. Manifold plug
4. Vacuum Control Switch



## OPERATING INSTRUCTIONS

### **Connection of the Vacuum Manifold and vacuum pump.**

Below are two methods to connect the manifold to vacuum pump:

1. Connect the manifold directly to circulating water vacuum pump or oil-free vacuum pump (or other vacuum pump) through connecting pipe 1/2.
2. Connect vacuum pump plug (1) of vacuum gauge to circulating water vacuum pump oil-free vacuum pump(or other vacuum pump) through connecting pipe 1, and connect vacuum gauge manifold plug (3) to manifold through connecting pipe 2.
  - a. Vacuum Gauge Adjusting knob (2) can be used for adjusting internal pressure and the vacuum gauge vacuum control switch (4) can be used for relieving pressure.

**NOTE:** The vacuum manifold internal pressure can be monitored by the vacuum gauge. By adjusting vacuum gauge, the extraction process can be better controlled to achieve the best effect.

### **96 Well Plate Suction / Filtration Operation.**

**NOTE:** 96 well plates suction/filtration are mainly applicable to the washing process of nucleic acid extraction, this process can be operated with universal or double layer vacuum manifold.

1. Put the waste reservoir into the base and place the top plate support over the base;
2. Place 96 well extraction plate on the top plate support, ensure that the 96 well plate is firmly connected with the manifold;
3. Add washing buffer into 96 well extraction plate, turn on the pump and adjust pressure to suck out all solution, then turn off the pump and take out and keep the 96 well plates for subsequent operation;
4. Discard the flow-through, wash all the parts with clean water and dry them.

### **96 well Plate Filtration and Binding**

**NOTE:** 96 well plates filtration and binding is mainly applicable to filtration and binding process of nucleic acid extraction, this process can be operated with double layer vacuum manifold.

1. Put the bottom plate support into the base and put 96 well extraction plate on the top plate support 1, and put the top plate support 1 over the base. Put 96 well plate filtration plates on top support 2. Place support 2 over support 1, and ensure that the 96 well plates are firmly connected with the manifold;
2. Add your lysed solution into 96 well extraction plates and adjust the pressure to suck all the solution into 96 well extraction plates and turn off the pump, remove the 96 well filtration plates and keep the 96 well extraction plates for subsequent operation;
3. Wash all the parts with clean water and dry them.

### **96 well Plate Elution**

**NOTE:** 96 well plates elution is mainly applicable to elution process of nucleic acid extraction.

1. Put the collection plate (6mm pad and 15 mm pad can be selected as needed) into the base and place the top plate support over the base;
2. Put 96 well extraction plate on the top plate support, ensure that the 96 well plates be firmly connected;
3. Add elution solution into 96 well extraction plate, turn on the pump and adjust pressure to suck out all solution into 96 well collection plates, then turn off the pump, remove the 96 well extraction plates and keep the 96 well plates for subsequent operation;
4. Wash all the parts with clean water and dry them.

### **Spin column Suction filtration**

**NOTE:** Spin column suction filtration is mainly applicable to rinsing process of nucleic acid extraction.

1. Put the waste reservoir into the base and place the 12-position spin column lid over the base;
2. Connect the spin column with the connector to avoid cross-contamination between samples;
3. Add rinsing solution into spin column, turn on the pump and adjust pressure to suck out all solution into waste reservoir, then turn off the pump, keep the spin column for subsequent operation;
4. Discard the flow-through, wash all the parts with clean water and dry them.

## CLEANING & MAINTENANCE

1. Keep Vacuum manifold dry and clean. All parts can be washed with clean water and dried with clean tissue or towel.
2. Vacuum manifold is not resistant to alcohols reagents such as ethanol and methanol. Do not put the acrylic material parts (such as top plate support, bottom plate support and waste reservoir) in alcohols for long time in case erosion and cracking. The manifold base is not resistant to phenol or chloroform, please wash it with water if these reagents fall on it.
3. To ensure the performance of Vacuum manifold, do not use silicon resin or vacuum grease on any part of the manifold

## CHEMICAL COMPATIBILITY

Chemical	Solvent Compatibility
Chlorine bleach (12%)	Compatible
Hydrochloric acid	
Sodium chloride	
Sodium hydroxide	
Urea	
Acetic acid	Not Compatible
Acetone	
Chromic acid	
Phenol	
Concentrated alcohols	
Benzene	
Chloroform	
Ethers	
Toluene	

## RECOMMENDED VACUUM PRESSURE

Application	Vacuum Pressure	
	mbar	mm Hg
<b>Luer-Inlet Vacuum Manifold</b>		
Plasmid Miniprep	800-900	600-675
<b>Universal Vacuum Manifold</b>		
Ultrapure Plasmid Miniprep	200-300	150-225
High-purity Plasmid Miniprep	40-200	30-150
Routine Plasmid Miniprep	200-300	150-225
PCR Cleanup	100-600	75-450
RNA Miniprep	800-900	600-675

## WARRANTY

The instrument is warranted against defects in materials and workmanship for 1 year. If any defects occur in the instrument or accessories during this warranty period, BT Lab Systems will repair or replace the defective parts at its discretion without charge.

For any inquiry or request for repair service, contact your local BT Lab Systems office. Inform BT Lab Systems of the model and serial number of your instrument.

## TECHNICAL SUPPORT

BT Lab Systems offers technical support for all of its products. If you have any questions about the product's use or, operation, please contact BT Lab Systems at the following info.

E-Mail: [info@BTLabSystems.com](mailto:info@BTLabSystems.com)