

Laboratory Filtration  
Laboratory Pump  
Life Sciences / Water Test



## Company Overview

ROCKER is a Taiwan-based leading manufacturer specialized in the development, manufacturing and sales of laboratory filtration equipments \ heating control devices etc mainly used in the fields of food, water testing, microbiology, molecular biology and purification of various materials. Besides being awarded ISO 9001: 2008 certificate, our main products are of CE or CSA approved quality and have obtained multiple patents in recent years. Thanks to which ROCKER are proud of having built up an ever-growing sales network covering over 50 countries worldwide and becoming the world's leading brand in lab filtration apparatus.



## Company Philosophy

### Passion

Enthusiasm to succeed at everything we do

### Innovation

Creating new ways to solve challenges

### Integrity

Consistently providing solutions according to our values

### Insight

Full understanding of what the customer and user requires

ROCKER Scientific Co., Ltd.

President

William Horng, Sep. 2016

## CONTENTS

### LABORATORY PUMP

Oil Free Vacuum Pump

Guide [P.2](#)

Rocker 300/300DC [P.3](#)

Rocker 400/410 [P.4](#)

Rocker 800/801 [P.5](#)

Rocker 810/811 [P.6](#)

Rocker 430 [P.7](#)

Rocker 300C [P.8](#)

Chemical Resistant Vacuum Pump

Chemker 300/400 [P.9](#)

Chemker 410/411 [P.10](#)

Rotary Vane Vacuum Pump

Tanker 130/150/215/230 [P.11](#)

Accessories [P.12](#)

Oil Free Compressor

Rocker 320/420 [P.13](#)

Air Supply System

Rocker 440 [P.14](#)

### LABORATORY FILTRATION

Filtration Set

Selection Guide [P.16](#)

VF 5 / VF 8 / VF 6 / VF 7 [P.17](#)

VF 3 / VF 10 / VF 12 / VF 15 [P.19](#)

V2 / VF 11 [P.21](#)

LF 30 / LF 32 / LF 33 / MF 31 [P.22](#)

Filter Holder

S.S. filter holder [P.24](#)

LF 3 / LF 3a / LF 5 / LF 5a [P.25](#)

MF 3 / MF 3a / MF 5 / MF 5a [P.26](#)

Vacuum Filtration System

Lafil 400 - LF 30/32 [P.27](#)

Lafil 400 - LF 5a - 500 [P.28](#)

Rocker 300 - LF 30 / MF 31 [P.29](#)

Rocker 300C - VF 12 [P.30](#)

Manifold

BioVac 330/320/330B [P.31](#)

MultiVac 310-MS / MS-T [P.33](#)

MultiVac 300-MB / 600-MB [P.35](#)

MultiVac 300-MS / 600-MS [P.36](#)

MultiVac assembly [P.37](#)

MultiVac 300-MB-T / 600-MB-T [P.39](#)

WaterVac 100 [P.40](#)

Waste bottle accessories [P.43](#)



### LIFE SCIENCES

Portable Suction System

BioDolphin [P.46](#)

Lafil 100 [P.47](#)

BioVac 225 Plus/240 Plus [P.49](#)

Lafil 400 Plus [P.50](#)

Disposable funnel [P.51](#)

Accessories [P.52](#)

ELISA Washer

BioWasher 200/100 [P.54](#)

Microplate Vacuum Manifold

WelVac 200/210 [P.55](#)

Lab Burner

Dragon 100/200/220 [P.57](#)

Dragon 300/320 [P.58](#)

Dry Bath

Sahara 310/320 [P.59](#)

Colony Counter

Galaxy 330 [P.60](#)

### WATER TEST

Suspended Solid Test System

Rocker 300 - LF30 - SS [P.62](#)

COD Test System

COD Reactor CR 25 [P.63](#)

COD Detector CD 200 [P.64](#)

Portable Water Test Meter

EC-200/210/220/230 [P.65](#)

Accessories [P.66](#)

### CLEANING TECHNOLOGY

Ultrasonic cleaner

Soner 203/203H/206/206H [P.68](#)

Soner 210/210H/220/220H [P.69](#)

Accessories [P.70](#)

### Table

Table [P.71](#)

# LABORATORY PUMP

Oil Free Vacuum Pump

Rocker 300/300DC

Rocker 400/410

Rocker 800/801/810/811

Rocker 430 / Lafil 400

Rocker 300C

Chemical Resistant Vacuum Pump

Chemker 300/400

Chemker 410/411

Rotary Vane Vacuum Pump

Tanker 150/215/230

Accessories

Oil Free Compressor

Rocker 320/420

Rocker 440

# Oil Free Vacuum Pump Guide

## Oil Free Vacuum Pump

	<b>Rocker 300</b> Max. vacuum : - 680 mmHg Max. flow rate : 23 (20) l/min
	<b>Rocker 300DC</b> Max. vacuum : - 650 mmHg Max. flow rate : 25 l/min
	<b>Rocker 400</b> Max. vacuum : - 680 mmHg Max. flow rate : 37 (34) l/min
	<b>Rocker 410</b> Max. vacuum : - 735 mmHg Max. flow rate : 23 (20) l/min
	<b>Rocker 800</b> Max. vacuum : - 670 mmHg Max. flow rate : 100 (84) l/min
	<b>Rocker 801</b> Max. vacuum : - 670 mmHg Max. flow rate : 80 (68) l/min
	<b>Rocker 810</b> Max. vacuum : - 735 mmHg Max. flow rate : 60 (50) l/min
	<b>Rocker 811</b> Max. vacuum : - 735 mmHg Max. flow rate : 48 (40) l/min
	<b>Rocker 430</b> Max. vacuum : - 630 mmHg Max. flow rate : 34 (28) l/min Max. pressure : 80 psi

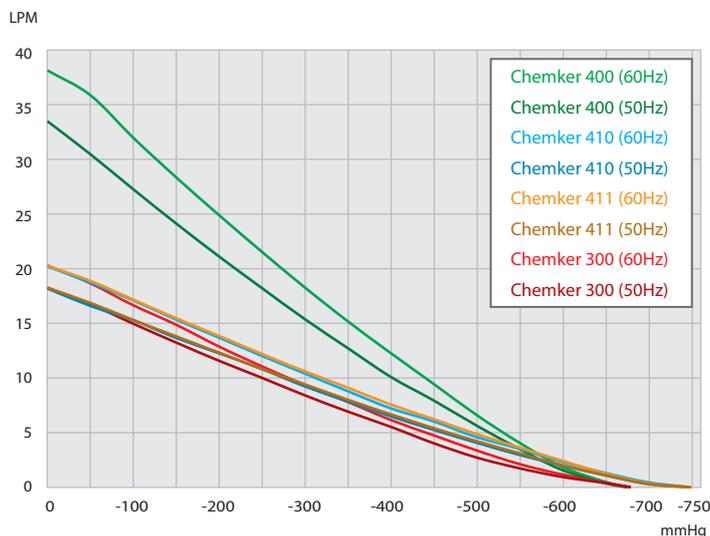
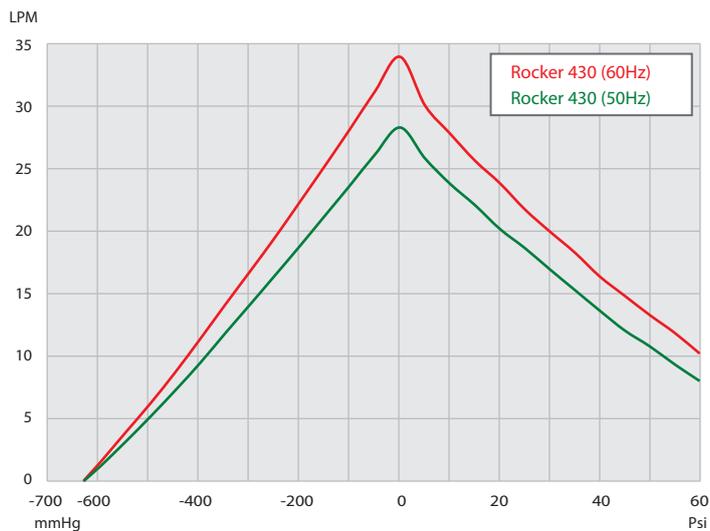
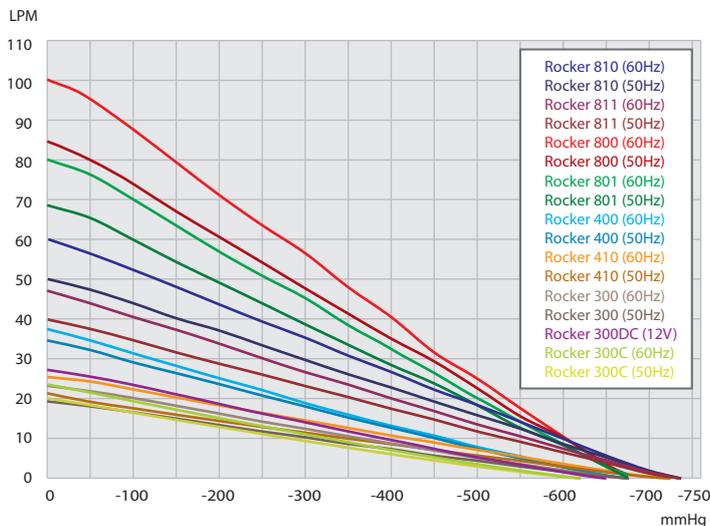
## PTFE Coated Chemical Resistant Vacuum Pump

	<b>Rocker 300C</b> Max. vacuum : - 630 mmHg Max. flow rate : 23 (20) l/min
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## Chemical Resistant Vacuum Pump

	<b>Chemker 300</b> Max. vacuum : - 670 mmHg Max. flow rate : 20 (18) l/min
	<b>Chemker 400</b> Max. vacuum : - 670 mmHg Max. flow rate : 38 (33) l/min
	<b>Chemker 410</b> Max. vacuum : - 750 mmHg Max. flow rate : 20 (18) l/min
	<b>Chemker 411</b> Max. vacuum : - 750 mmHg Max. flow rate : 20 (18) l/min

## Pumping Speed Graph



\*\*The value in ( ) is the max. flow rate at 50Hz

# Oil Free Vacuum Pump

Two-Year Warranty

## Features

### ➤ No air pollution, maintenance free

Rocker series pumps are driven by piston, without the need of lubricant, regular oil changes and maintenance; with no oil pollution.

### ➤ Prote™ overflow protection

Rocker series pumps are equipped with Prote™ overflow protection which can prevent a large amount of liquid from being sucked into the pump.

### ➤ Moisture trap with filter cartridge

Rocker series pumps are equipped with filter cartridge in air inlet to filter particle and moisture to prolong the life of pump.

### ➤ Vacuum regulator

Rocker series pumps are equipped with vacuum regulator to adjust vacuum.

### ➤ Thermal protection device

Every motor of Rocker series pumps has a built-in thermal protection device to shut off the pump automatically when overheated and then resume working when the temperature cools down.

### ➤ International safety certification

CE certification  
 CSA certification  
 IP 30 protection (Rocker 300)  
 ROHS certification (Rocker 300)

## Applications

- Filtration for microbiology test
- Air sampling
- Suspended solid test
- Vacuum filtration

## Ordering Information

### 167300-11(22)

Rocker 300, Vacuum Pump  
 AC110V, 60Hz (AC220V, 50Hz)

### 167330-00

Rocker 300DC, DC Power Vacuum Pump ( DC12 V)



Rocker 300



Rocker 300DC

## Specification

Model	Rocker 300		Rocker 300DC
Voltage	110V/60Hz	220V/50Hz	DC 12V
Max. power (W)	65	60	35
Max. current (A)	0.7	0.3	3
Max. vacuum	- 680 mmHg		- 650 mmHg
Max. flow rate	23 l/min	20 l/min	25 l/min
Moisture Trap / Vacuum Regulator	Yes		Yes
Overflow protection	Yes		Yes
Motor rotation	1750 RPM	1450 RPM	1800 RPM
Horse power	1/8 HP		1/8 HP
Noise level	50 dB		50 dB
Hose barb	5/16 inch (8 mm)		5/16 inch (8 mm)
Net weight	4.1 Kg		3.5 Kg
Dimension (LxWxH)	26.8 x 13.5 x 20.4 cm		27.2 x 12.1x 16.5 cm

PS: 1 mmHg ≅ 0.1333 kPa ≅ 1.333 mbar , 1 l/min ≅ 0.035CFM

# Oil Free Vacuum Pump

Two-Year Warranty

## Features

### ➤ No air pollution, maintenance free

Rocker series pumps are driven by piston, without the need of lubricant, regular oil changes and maintenance; with no oil pollution.

### ➤ Prote™ overflow protection

Rocker series pumps are equipped with Prote™ overflow protection which can prevent a large amount of liquid from being sucked into the pump.

### ➤ Moisture trap with filter cartridge

Rocker series pumps are equipped with filter cartridge in air inlet to filter particle and moisture to prolong the life of pump.

### ➤ Vacuum regulator

Rocker series pumps are equipped with vacuum regulator to adjust vacuum.

### ➤ Thermal protection device

Every motor of Rocker series pumps has a built-in thermal protection device to shut off the pump automatically when overheated and then resume working when the temperature cools down.

### ➤ International safety certification

CE certification  
 CSA certification  
 IP 30 protection (Rocker 400/410)  
 ROHS certification (Rocker 400/410)

## Applications

- Filtration for microbiology test
- Air sampling
- Suspended solid test
- Vacuum filtration

## Ordering Information

### 167400-11(22)

Rocker 400, Vacuum Pump  
 AC110V, 60Hz (AC220V, 50Hz)

### 167410-11(22)

Rocker 410, Vacuum Pump  
 AC110V, 60Hz (AC220V, 50Hz)



Rocker 400



Rocker 410

## Specification

Model	Rocker 400		Rocker 410	
Voltage	110V/60Hz	220V/50Hz	110V/60Hz	220V/50Hz
Max. power (W)	100	80	100	80
Max. current (A)	1.0	0.4	1.0	0.4
Max. vacuum	- 680 mmHg		- 735 mmHg	
Max. flow rate	37 l/min	34 l/min	23 l/min	20 l/min
Moisture Trap / Vacuum Regulator	Yes		Yes	
Overflow protection	Yes		Yes	
Motor rotation	1750 RPM	1450 RPM	1750 RPM	1450 RPM
Horse power	1/6 HP		1/6 HP	
Noise level	52 dB		52 dB	
Hose barb	5/16 inch (8 mm)		5/16 inch (8 mm)	
Net weight	5.2 Kg		5.2 Kg	
Dimension (LxWxH)	31.0 x 13.5 x 20.4 cm		31.0 x 13.5 x 20.4 cm	

PS: 1 mmHg ≅ 0.1333 kPa ≅ 1.333 mbar , 1 l/min ≅ 0.035CFM

# Oil Free Vacuum Pump

Two-Year Warranty

## Features

➤ **No air pollution, maintenance free**

Rocker series pumps are driven by piston, without the need of lubricant, regular oil changes and maintenance; with no oil pollution.

➤ **Prote™ overflow protection**

Rocker 801 pump is equipped with Prote™ overflow protection which can prevent a large amount of liquid from being sucked into the pump.

➤ **Moisture trap with filter cartridge**

Rocker 801 pump is equipped with filter cartridge in air inlet to filter particle and moisture to prolong the life of pump.

➤ **Vacuum regulator**

Rocker series pumps are equipped with vacuum regulator to adjust vacuum.

➤ **Thermal protection device**

Every motor of Rocker series pumps has a built-in thermal protection device to shut off the pump automatically when overheated and then resume working when the temperature cools down.

➤ **International safety certification**

CE certification

## Applications

- Filtration for microbiology test
- Air sampling
- Suspended solid test
- Vacuum filtration

## Ordering Information

**167800-11(22)**

Rocker 800, Vacuum Pump  
AC110V, 60Hz (AC220V, 50Hz)

**167801-11(22)**

Rocker 801, Vacuum Pump  
AC110V, 60Hz (AC220V, 50Hz)



Rocker 800



Rocker 801

## Specification

Model	Rocker 800		Rocker 801	
Voltage	110V/60Hz	220V/50Hz	110V/60Hz	220V/50Hz
Max. power (W)	220	200	220	200
Max. current (A)	2	0.9	2	0.9
Max. vacuum	- 670 mmHg		- 670 mmHg	
Max. flow rate	100 l/min	80 l/min	80 l/min	68 l/min
Vacuum Regulator	Yes		Yes	
Overflow protection	No		Yes	
Motor rotation	1750 RPM	1450 RPM	1750 RPM	1450 RPM
Horse power	1/3 HP		1/3 HP	
Noise level	68 dB		68 dB	
Hose barb	3/8 inch (10 mm)		3/8 inch (10 mm)	
Net weight	7.6 Kg		7.9 Kg	
Dimension (LxWxH)	34.5 x 17.5 x 20.0 cm		34.5 x 17.5 x 20.0 cm	

PS: 1 mmHg ≅ 0.1333 kPa ≅ 1.333 mbar , 1 l/min ≅ 0.035CFM

# Oil Free Vacuum Pump

Two-Year Warranty

## Features

### ❖ No air pollution, maintenance free

Rocker series pumps are driven by piston, without the need of lubricant, regular oil changes and maintenance; with no oil pollution.

### ❖ Prote™ overflow protection

Rocker 811 pump is equipped with Prote™ overflow protection which can prevent a large amount of liquid from being sucked into the pump.

### ❖ Moisture trap with filter cartridge

Rocker 811 pump is equipped with filter cartridge in air inlet to filter particle and moisture to prolong the life of pump.

### ❖ Vacuum regulator

Rocker series pumps are equipped with vacuum regulator to adjust vacuum.

### ❖ Thermal protection device

Every motor of Rocker series pumps has a built-in thermal protection device to shut off the pump automatically when overheated and then resume working when the temperature cools down.

### ❖ International safety certification

CE certification

## Applications

- ❖ Filtration for microbiology test
- ❖ Air sampling
- ❖ Suspended solid test
- ❖ Vacuum filtration

## Ordering Information

### 167810-11(22)

Rocker 810, Vacuum Pump  
AC110V, 60Hz (AC220V, 50Hz)

### 167811-11(22)

Rocker 811, Vacuum Pump  
AC110V, 60Hz (AC220V, 50Hz)



Rocker 810



Rocker 811

## Specification

Model	Rocker 810		Rocker 811	
Voltage	110V/60Hz	220V/50Hz	110V/60Hz	220V/50Hz
Max. power (W)	220	200	220	200
Max. current (A)	2	0.9	2	0.9
Max. vacuum	- 735 mmHg		- 735 mmHg	
Max. flow rate	60 l/min	50 l/min	48 l/min	40 l/min
Vacuum Regulator	Yes		Yes	
Overflow protection	No		Yes	
Motor rotation	1750 RPM	1450 RPM	1750 RPM	1450 RPM
Horse power	1/3 HP		1/3 HP	
Noise level	68 dB		68 dB	
Hose barb	3/8 inch (10 mm)		3/8 inch (10 mm)	
Net weight	7.6 Kg		7.9 Kg	
Dimension (LxWxH)	34.5 x 17.5 x 20.0 cm		34.5 x 17.5 x 20.0 cm	

PS: 1 mmHg ≅ 0.1333 kPa ≅ 1.333 mbar, 1 l/min ≅ 0.035CFM

# Oil Free Vacuum/Pressure Pump

## Features

Two-Year Warranty

➤ **No air pollution, maintenance free**

Rocker series pumps are driven by piston, without the need of lubricant, regular oil changes and maintenance; with no oil pollution.

➤ **Prote™ overflow protection**

Rocker 430 pump is equipped with Prote™ overflow protection which can prevent a large amount of liquid from being sucked into the pump.

➤ **Moisture trap with filter cartridge**

Rocker 430 pump is equipped with filter cartridge in air inlet and outlet to filter particle and moisture to prolong the life of pump.

➤ **Vacuum and pressure regulators**

Rocker 430 pump is equipped with vacuum and pressure regulators to adjust vacuum and pressure.

➤ **Thermal protection device**

Every motor of Rocker series pumps has a built-in thermal protection device to shut off the pump automatically when overheated and then resume working when the temperature cools down.

➤ **International safety certification**

CE certification  
IP 30 protection (Rocker 430)  
ROHS certification (Rocker 430)

## Applications

- Filtration for microbiology test
- Air sampling
- Suspended solid test
- Vacuum filtration

## Ordering Information

**167430-11(22)**

Rocker 430, Vacuum Pump  
AC110V, 60Hz (AC220V, 50Hz)



## Specification

Model	Rocker 430	
Voltage	110V/60Hz	220V/50Hz
Max. power (W)	147	125
Max. current (A)	1.5	0.6
Max. vacuum	- 630 mmHg	
Max. pressure	80 psi	
Max. flow rate	34 l/min	28 l/min
Vacuum Regulator	Yes	
Pressure Regulator	Yes	
Overflow protection	Yes	
Motor rotation	1750 RPM	1450 RPM
Horse power	1/6 HP	
Noise level	52 dB	
Hose barb	5/16 inch (8 mm)	
Net weight	5.5 Kg	
Dimension (LxWxH)	24.7x23.5x20.4 cm	

PS: 1 mmHg ≅ 0.1333 kPa ≅ 1.333 mbar , 1 l/min ≅ 0.035CFM

# PTFE Coated Chemical Resistant Vacuum Pump

## Features

### ➤ No air pollution, maintenance free

Rocker 300C vacuum pump is driven by diaphragm, without the need of lubricant, regular oil changes and maintenance with no oil pollution.

### ➤ Good chemical resistance

The diaphragm chamber of Rocker 300C coated with PTFE and the SS # 316 valve plate can offer good resistance to a wide range of corrosive gases.

### ➤ Thermal protection device

Every motor of Rocker series pumps has a built-in thermal protection device to shut off the pump automatically when overheated and then resume working when the temperature cools down.

### ➤ International safety certification

CE certification

IP 30 protection (Rocker 300C)

ROHS certification (Rocker 300C)

## Applications

- Vacuum filtration
- Solid-Phase Extraction (SPE)
- Solvent purification

## Ordering Information

### 189300-11(22)

Rocker 300C, PTFE Coated Chemical Resistant Vacuum Pump  
AC110V, 60Hz (AC220V, 50Hz)



Rocker 300C

## Specification

Model	Rocker 300C	
Voltage	110V/60Hz	220V/50Hz
Max. power (W)	65	60
Max. current (A)	0.7	0.3
Max. vacuum	- 630 mmHg	
Max. flow rate	23 l/min	20 l/min
Moisture Trap / Vacuum Regulator	Yes	
Overflow protection	No	
Motor rotation	1750 RPM	1450 RPM
Horse power	1/8 HP	
Noise level	50 dB	
Hose barb	5/16 inch (8 mm)	
Net weight	4.1 Kg	
Dimension (LxWxH)	28.5x13.5x20.4 cm	

PS: 1 mmHg  $\approx$  0.1333 kPa  $\approx$  1.333 mbar , 1 l/min  $\approx$  0.035CFM

# Chemical Resistant Vacuum Pump

## Features

### High chemical resistant

All wetted parts of Chemker series pump are made of PTFE material which can resist most of corrosive gases.

### No air pollution, maintenance free

Chemker series pumps are driven by Diaphragm, without the need of lubricant, regular oil changes and maintenance; with no oil pollution.

### Quiet and low vibration

Driven direct by motor with no additional belt-driven transmission; the quality vibration-proof assembly makes Chemker series run at the lowest noise level among all other equivalent pumps.

### Thermal protection device

Every motor of Chemker series pumps has a built-in thermal protection device to shut off the pump automatically when overheated and then resume working when the temperature cools down.

### International safety certification

CE certification

## Applications

- Vacuum filtration
- Gel electrophoresis
- Solid-Phase Extraction (SPE)
- Solvent purification

## Ordering Information

### 169300-11(22)

Chemker 300, Vacuum Pump  
AC110V, 60Hz (AC220V, 50Hz)

### 169400-11(22)

Chemker 400, Vacuum Pump  
AC110V, 60Hz (AC220V, 50Hz)



## Specification

Model	Chemker 300		Chemker 400	
	110V/60Hz	220V/50Hz	110V/60Hz	220V/50Hz
Max. power (W)	70	60	90	90
Max. current (A)	0.8	0.32	1.1	0.5
Max. vacuum	- 670 mmHg		- 670 mmHg	
Max. flow rate	20 l/min	18 l/min	38 l/min	33 l/min
Motor rotation	1700 RPM	1450 RPM	1700 RPM	1450 RPM
Horse power	1/8 HP		1/6 HP	
Noise level	50 dB		50 dB	
Hose barb	5/16 inch (8 mm)		5/16 inch (8 mm)	
Net weight	5.0 Kg		7.0 Kg	
Dimension (LxWxH)	20.3x11.2x20.9 cm		26.7x11.2x18.1 cm	

PS: 1 mmHg  $\approx$  0.1333 kPa  $\approx$  1.333 mbar , 1 l/min  $\approx$  0.035CFM

# Chemical Resistant Vacuum Pump

## Features

### ➤ High chemical resistant

All wetted parts of Chemker series pump are made of PTFE material which can resist most of corrosive gases.

### ➤ No air pollution, maintenance free

Chemker series pumps are driven by Diaphragm, without the need of lubricant, regular oil changes and maintenance; with no oil pollution.

### ➤ Quiet and low vibration

Driven direct by motor with no additional belt-driven transmission; the quality vibration-proof assembly makes Chemker series run at the lowest noise level among all other equivalent pumps.

### ➤ Thermal protection device

Every motor of Chemker series pumps has a built-in thermal protection device to shut off the pump automatically when overheated and then resume working when the temperature cools down.

### ➤ International safety certification

CE certification

## Applications

- Vacuum filtration
- Gel electrophoresis
- Solid-Phase Extraction (SPE)
- Rotary evaporator
- Solvent purification

## Ordering Information

### 169410-11(22)

Chemker 410, Vacuum Pump  
AC110V, 60Hz (AC220V, 50Hz)

### 169411-11(22)

Chemker 411, Vacuum Pump  
AC110V, 60Hz (AC220V, 50Hz)



\* Glass Moisture Trap / Vacuum Regulator doesn't include filter cartridge

## Specification

Model	Chemker 410		Chemker 411	
	110V/60Hz	220V/50Hz	110V/60Hz	220V/50Hz
Voltage	110V/60Hz	220V/50Hz	110V/60Hz	220V/50Hz
Max. power (W)	90	90	90	90
Max. current (A)	1.2	0.5	1.2	0.5
Max. vacuum	- 750 mmHg		- 750 mmHg	
Max. flow rate	20 l/min	18 l/min	20 l/min	18 l/min
Motor rotation	1700 RPM	1450 RPM	1700 RPM	1450 RPM
Horse power	1/6 HP		1/6 HP	
Noise level	50 dB		50 dB	
Hose barb	5/16 inch (8 mm)		5/16 inch (8 mm)	
Net weight	7.0 Kg		7.4 Kg	
Dimension (LxWxH)	26.2x14.8x18.2 cm		26.2x23.6x19.3 cm	
Glass vapor trap	—		Yes	
Glass Vapor Trap / Vacuum Regulator	—		Yes	

PS: 1 mmHg ≅ 0.1333 kPa ≅ 1.333 mbar, 1 l/min ≅ 0.035CFM

# Rotary Vane Vacuum Pump

## Features

### ➤ High vacuum, high flow rate

Tanker series pumps are driven by rotary vane, with high flow, vacuum can reach over 0.1 Torr. Suitable for the laboratory that needs high / medium volume and vacuum for experiment.

### ➤ Quiet and low vibration

Tanker series pumps feature low noise level, low vibration and long product life.

### ➤ Thermal protection device

Every motor of Tanker series pumps has a built-in thermal protection device to shut off the pump automatically when overheated and then resume working when the temperature cools down.

### ➤ International safety certification

CE certification

## Applications

- Vacuum filtration
- Vacuum drying
- Vacuum oven
- Various vacuum applications

## Ordering Information

### 187130-11(22)

Tanker 130, Vacuum Pump  
AC110V, 60Hz (AC220V, 50Hz)

### 187150-11(22)

Tanker 150, Vacuum Pump  
AC110V, 60Hz (AC220V, 50Hz)

### 187215-11(22)

Tanker 215, Vacuum Pump  
AC110V, 60Hz (AC220V, 50Hz)

### 187230-11(22)

Tanker 230, Vacuum Pump  
AC110V, 60Hz (AC220V, 50Hz)

### 187100-30 Exhaust Filter

### 187100-25 Oil mist outlet

### 187100-05 Lubricant (500ml / PK)



### Exhaust filter (optional)

Exhaust filter with stainless steel housing can be used to prevent oil mist from being sprayed into the room and keep laboratory clean.

### Oil mist outlet (optional)

It is used to exhaust the oil mist out of a room by connecting an optional hose barb (Thread 1/8 PT) and a proper tube.

## Specification

Model	Tanker 130		Tanker 150		Tanker 215		Tanker 230	
Power	110V/60Hz	220V/50Hz	110V/60Hz	220V/50Hz	110V/60Hz	220V/50Hz	110V/60Hz	220V/50Hz
Max. power (W)	250	250	375	375	250	250	375	375
Max. current (A)	4.2	2.5	6.5	3	4.2	2.5	6.5	3
Max. vacuum (Torr)	0.1		0.1		0.05		0.05	
Max. flow CFM (L/min)	3 (85)	2.5 (70)	5 (142)	4.5 (127)	1.5 (42)	1.3 (36)	3 (85)	2.5 (70)
Motor rotation (RPM)	1725	1440	1725	1440	1725	1440	1725	1440
Horse power	1/3 HP		1/2 HP		1/3 HP		1/2 HP	
Hose barb	3/8 inch (9.5 mm)							
Noise level	52 dB		52 dB		52 dB		52 dB	
Net weight	9.6 Kg		13 Kg		11.4 Kg		14 Kg	
Dimension (LxMxH)	31.5x12.0x36 cm		33.5x12.5x37.5 cm		31.5x12.0x36 cm		33.5x12.5x37.5 cm	

PS: 1 mmHg = 0.1333 kPa = 1.333 mbar, 1 l/min = 0.035CFM

# Pump Accessories

**Hose Barb**



Cat. No.:	167300-20	167300-21	167300-63	167300-23	167300-24	187100-32	187100-31	187100-34
Barb:	3/8 inch	5/16 inch	1/4 inch	3/16 inch	1/8 inch	1/2 inch	3/8 inch	1/4 inch
	9.5 mm	8 mm	6.4 mm	4.8 mm	3.2 mm	12.7 mm	9.5 mm	6.4 mm
Thread:	1/8 PT	1/4 SAE	1/4 SAE	1/4 SAE				

**Chemical Resistant Hose Barb**



169300-20  
5/16 inch  
8 mm  
1/4 MPT

**Vapor Trap / Vacuum Regulator**



169311-06 (Glass)    169300-06 (PC)  
For Chemker            For Chemker  
300/400/410            300/400/410

**Glass Vapor Trap**



169301-06  
For Chemker  
300/400/410

**Moisture Trap / Vacuum Regulator**



167301-06 (PC)  
For Rocker  
300/400/410/430

**Moisture Trap / Vacuum Regulator**



167801-06 (PC)  
For Rocker  
801/811

**Filter Cartridge**



167301-07            167801-07  
For Rocker 300/400/  
410/430 (with Prote™  
overflow protection)    (without Prote™  
overflow protection)

**Air Outlet ( Copper Muffler )**



167300-42            167600-42  
For Rocker            For Rocker  
300/400/410/430    800/801/810/811

**Silicone Tube**



167200-38  
Inner diameter: 6 mm  
Outer diameter: 12 mm  
Length: 1m

**Universal Foot Switch**



167200-41            167200-41-1  
Momentary type      Maintained type

# Oil Free Compressor

Two-Year Warranty

## Features

### ➤ No pollution, maintenance free

Rocker series pumps are driven by Piston, without the need of lubricant, regular oil changes and maintenance; with no oil pollution.

### ➤ Quiet and low vibration

Driven direct by motor with no additional belt-driven transmission; the quality vibration-proof assembly makes Rokcer series run at the lowest noise level among all other equivalent pumps.

### ➤ Thermal protection device

Every motor of Rocker series pumps has a built-in thermal protection device to shut off the pump automatically when overheated and then resume working when the temperature cools down.

### ➤ Air outlet filter device

Every Rocker series compressor is equipped with filter cartridge in air outlet to filter particle, moisture and supply clean air.

### ➤ International safety certification

CE certification  
CSA certification

## Applications

- Aeration
- Pressure filtration

## Ordering Information

### 167320-11(22)

Rocker 320, Compressor  
AC110V, 60Hz (AC220V, 50Hz)

### 167420-11(22)

Rocker 420, Compressor  
AC110V, 60Hz (AC220V, 50Hz)



Rocker 320



Rocker 420

## Specification

Model	Rocker 320		Rocker 420	
	110V/60Hz	220V/50Hz	110V/60Hz	220V/50Hz
Max. power (W)	90	85	147	125
Max. current (A)	0.9	0.4	1.5	0.6
Max. pressure (w/o moisture trap)	100 psi		100 psi	
Max. pressure (w. moisture trap)	80 psi		80 psi	
Max. flow rate	14 l/min	12 l/min	27 l/min	25 l/min
Moisture trap	Yes		Yes	
Motor rotation	1700 RPM	1400 RPM	1700 RPM	1400 RPM
Horse power	1/8 HP		1/6 HP	
Noise level	50 dB		52 dB	
Hose barb	5/16 inch (8 mm)		5/16 inch (8 mm)	
Net weight	4.1 Kg		5.2 Kg	
Dimension (LxWxH)	27.2x 13.6x16.5 cm		29.8x14.3x17.2 cm	

PS: 1 l/min ≅ 0.035 CFM, 1 psi ≅ 0.0698 bar ≅ 0.07 kg/cm<sup>2</sup>

# Air Supply System

Two-Year Warranty

## Features

- **No pollution, maintenance free**

Rocker series pumps are driven by Piston, without the need of lubricant, regular oil changes and maintenance; with no oil pollution.
- **Quiet and low vibration**

Driven direct by motor with no additional belt-driven transmission; the quality vibration-proof assembly makes Rokcer series run at the lowest noise level among all other equivalent pumps.
- **Thermal protection device**

Every motor of Rocker series pumps has a built-in thermal protection device to shut off the pump automatically when overheated and then resume working when the temperature cools down.
- **Air outlet filter device**

Every Rocker series compressor is equipped with filter cartridge in air outlet to filter particle, moisture and supply clean air.
- **International safety certification**

CE certification  
CSA certification

## Applications

- Fermenter
- Bioreactor
- Gas Chromatograph

## Ordering Information

**167440-11(22)**

Rocker 440, Air Supply System  
AC110V, 60Hz (AC220V, 50Hz)



Rocker 440

\* Air tank capacity of 2.5 liters, made of SUS304 stainless steel.

## Specification

Model		Rocker 440					
Voltage		110V/60Hz			220V/50Hz		
Max. power (W)		147			125		
Max. current (A)		1.5			0.6		
Pressure range		40 - 60 psi			40 - 60 psi		
Motor rotation		1700 RPM			1400 RPM		
Max. flow rate (without air tank)		27 l/min			25 l/min		
Max. flow rate with air tank	20 psi	0-15 sec. 40 l/min	15-30 sec. Decreasing	after 30 sec. 27 l/min	0-15 sec. 40 l/min	15-30 sec. Decreasing	after 30 sec. 25 l/min
	40 psi	0-10 sec. 52 l/min	10-25 sec. Decreasing	after 25 sec. 27 l/min	0-10 sec. 50 l/min	10-25 sec. Decreasing	after 25 sec. 25 l/min
	60 psi	0-8 sec. 65 l/min	8-22 sec. Decreasing	after 22 sec. 27 l/min	0-8 sec. 60 l/min	8-22 sec. Decreasing	after 22 sec. 25 l/min
Moisture trap		Yes			Yes		
Horse power		1/6 HP			1/6 HP		
Noise level		52 dB			52 dB		
Hose barb		Quick coupling			Quick coupling		
Net weight		8.4 Kg			8.4 Kg		
Dimension (LxWxH)		29.3x31.1x25.1 cm			29.3x31.1x25.1 cm		

PS: The pressure can be changed to 60-80 psi

# LABORATORY FILTRATION

## Filtration Set Selection Guide

### Filtration Glass Set

VF5 / VF8 / VF6 / VF7

VF3 / VF10 / VF 12 / VF2 / VF11

LF 30 / LF 32 / LF 33 / MF 31

### Filter Holder

LF 3 / LF 3a / LF 5 / LF 5a

MF 3 / MF 3a / MF 5 / MF 5a

### Stainless Steel funnel

### Filtration System

Lafil 400 - LF 30 / Lafil 400 - LF 32

Lafil 400 - 5a - 500

Rocker 300 - LF 30 / Rocker 300 - MF 31 /  
Rocker 300C - VF 12 / Chemker300 - VF 12

### Manifold

BioVac 330 / BioVac 320 / 330B

MutilVac 310-MS / MutilVac 310-MS-T

MutilVac 300-MB / MutilVac 300-MB-T

MutilVac 600-MB / MutilVac 600-MB-T

### Filtration System

WaterVac 100-MS / WaterVac 100-MB

BioVac 321B / BioVac 321C

BioVac 330B / BioVac 630B

# Filtration Set Selection Guide

	Φ 25 mm	Φ 47 mm	Φ 90 mm	
PES (Polyethersulfone)		 <p>LF 30 P.23</p> <p>MF 31 P.23</p>		<p>PES filter holder</p>  <p>LF 3 P.25    LF 3a P.25</p> <p>LF 5 P.25    LF 5a P.25</p>
Stainless Steel 316		 <p>LF 32 P.22</p> <p>LF 33 P.22</p> <p>VF2 P.21</p> <p>VF11 P.21</p>		<p>Magnetic filter holder</p>  <p>MF 3 P.26    MF 3a P.26</p> <p>MF 5 P.26    MF 5a P.26</p>
Glass	 <p>VF5 P.17</p> <p>VF8 P.17</p>	 <p>VF3 P.19</p> <p>VF7 P.18</p> <p>VF12 P.20</p>	 <p>VF10 P.19</p>	<p>S.S. filter holder</p>  <p>100ml P.24</p> <p>300ml P.24</p> <p>500ml P.24</p>

\*\* Filter holders are used for Φ 47 mm membrane

# 25 mm Glass Microanalysis Filtration Sets



VF5



VF8

## Applications

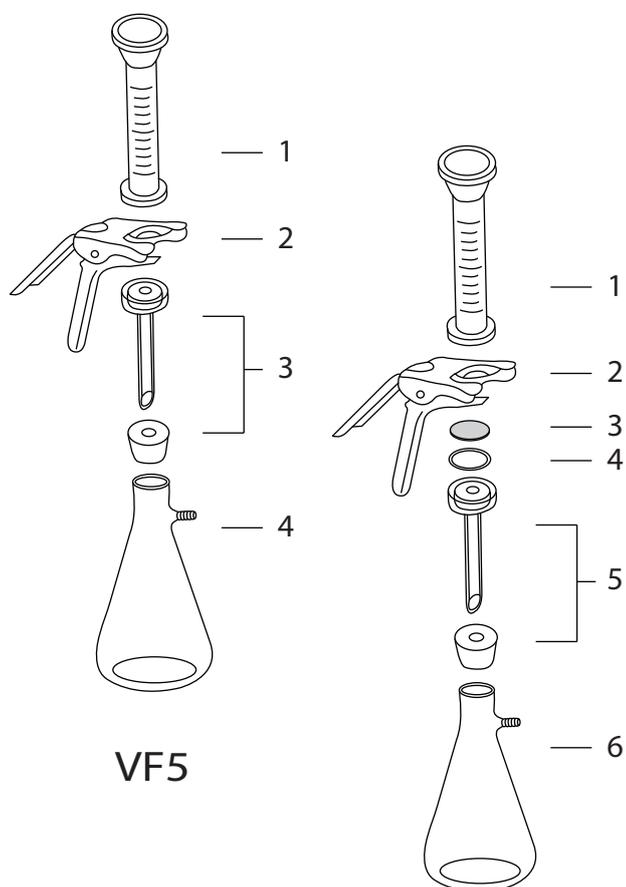
Ideal for small volume vacuum filtration for biological or particulate contamination analysis.

## Specifications

Material	VF5	VF8
Filter funnel	Borosilicate glass	Borosilicate glass
Funnel support base	Borosilicate glass	Borosilicate glass
Membrane support	Sintered glass	S.S. screen with PTFE seal
Clamp	Anodized aluminum	Anodized aluminum
Stopper	Silicone rubber (No.5)	Silicone rubber (No.5)
Receiver flask	Borosilicate glass	Borosilicate glass

## Specifications

Funnel capacity	15 ml	15 ml
Flask capacity	125 ml	125 ml
Filter diameter	25 mm	25 mm
Effective filtration area	2.2 cm <sup>2</sup>	2.2 cm <sup>2</sup>
Hose barb	5/16 inch (8 mm)	5/16 inch (8 mm)



VF5

VF8

## Ordering Information

VF5, 25mm Glass Microanalysis Filtration Set 167200-05

15 ml Glass filter holder (1+2+3) 167120-32

1	Glass funnel, 15 ml	167220-15
2	Anodized aluminum clamp	167240-05
3	Glass support base (Including No.5 silicone stopper)	167230-04

4 Receiver flask, 125 ml 167250-05

VF8, 25 mm Glass Microanalysis Filtration Set 167200-08

15 ml Glass filter holder (1+2+3+4+5) 167120-34

1	Glass funnel, 15 ml	167220-15
2	Anodized aluminum clamp	167240-05
3	Stainless steel support screen	167230-32
4	PTFE gasket	167230-42
5	Glass support base (Including No.5 silicone stopper)	167230-08

6 Receiver flask, 125 ml 167250-05

# 47 mm Glass Filtration Sets



VF6



VF7

## Applications

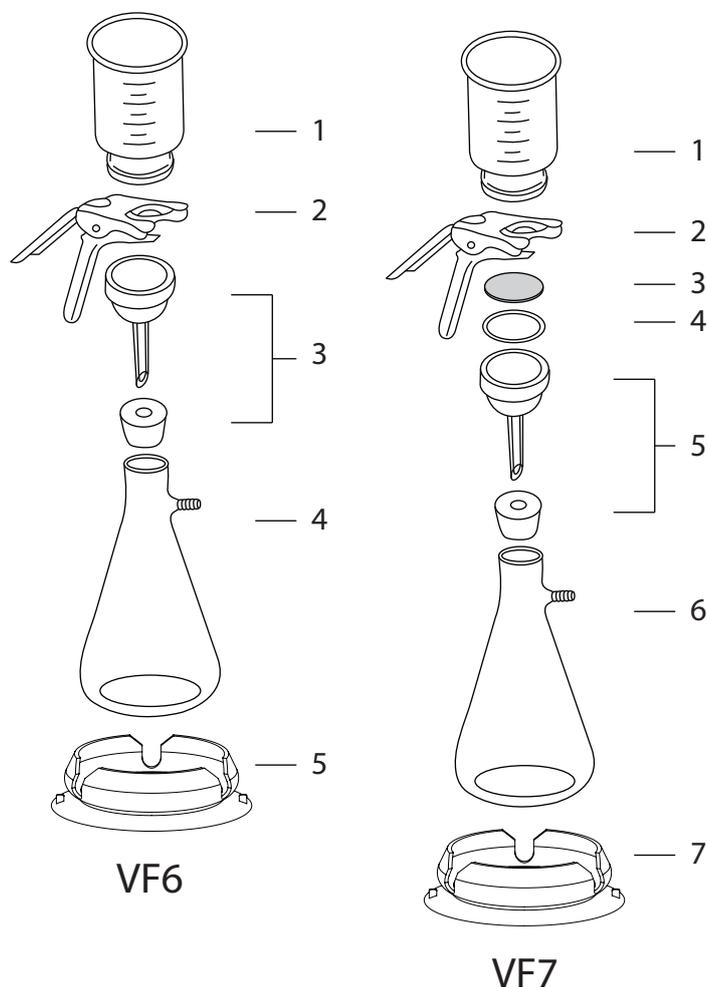
Ideal for solvent purification and general filtration for microbiology, suspended solid analysis etc.

## Specifications

Material	VF6	VF7
Filter funnel	Borosilicate glass	Borosilicate glass
Funnel support base	Borosilicate glass	Borosilicate glass
Membrane support	Sintered glass	S.S. screen with PTFE seal
Clamp	Anodized aluminum	Anodized aluminum
Stopper	Silicone rubber (No.8)	Silicone rubber (No.8)
Receiver flask	Borosilicate glass	Borosilicate glass

## Specifications

Funnel capacity	300 ml	300 ml
Flask capacity	1000 ml	1000 ml
Filter diameter	47 mm	47 mm
Effective filtration area	9.6 cm <sup>2</sup>	9.6 cm <sup>2</sup>
Hose barb	5/16 inch (8 mm)	5/16 inch (8 mm)



VF6

VF7

## Ordering Information

<b>VF6, 47 mm Glass Filtration Set</b>	<b>167200-06</b>
300 ml Glass filter holder (1+2+3)	167120-31
1 Glass funnel, 15 ml	167210-03
2 Anodized aluminum clamp	167240-01
3 Glass support base (Including No.8 silicone stopper)	167230-03
4 Receiver flask, 1000 ml	167250-03
5 Silicone fixing sucker	167200-45
<b>VF7, 47 mm Glass Filtration Set</b>	<b>167200-07</b>
300 ml Glass filter holder (1+2+3+4+5)	167120-33
1 Glass funnel, 300 ml	167210-03
2 Anodized aluminum clamp	167240-01
3 Stainless steel support screen	167230-31
4 PTFE gasket	167230-41
5 Glass support base (Including No.8 silicone stopper)	167230-07
6 Receiver flask, 1000 ml	167250-03
7 Silicone fixing sucker	167200-45

# 47 mm, 90 mm Glass Filtration Sets



VF3



VF10

## Applications

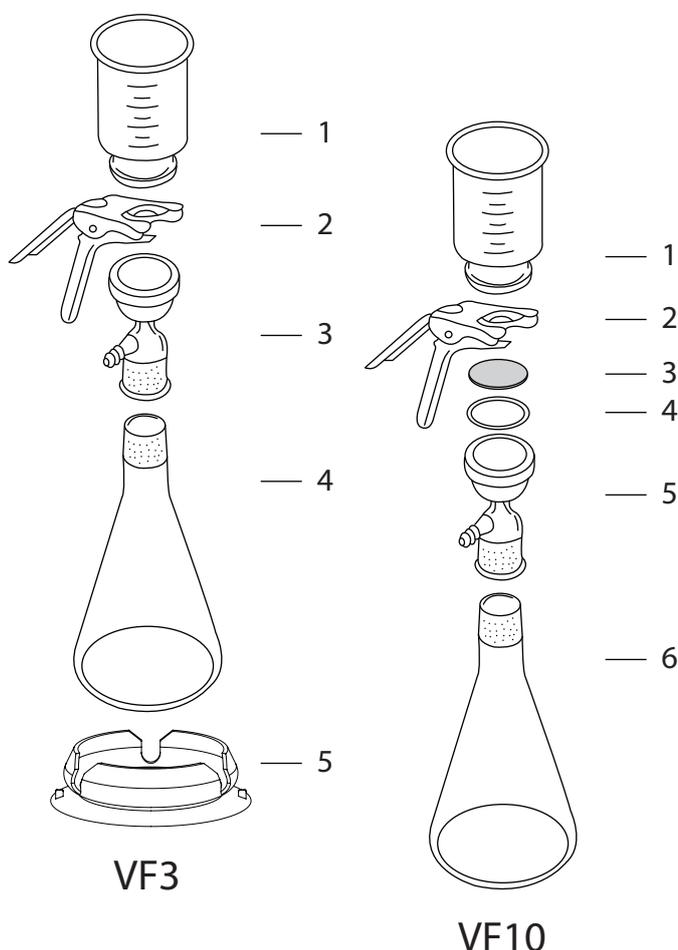
Ideal for the purification of organic, corrosive liquid such as solvent (mobile phase) for HPLC analysis .

## Specifications

Material	VF3	VF10
Filter funnel	Borosilicate glass	Borosilicate glass
Funnel support base	Borosilicate glass	Borosilicate glass
Membrane support	Sintered glass	Copper support screen with PTFE coating
Clamp	Anodized aluminum	Anodized aluminum
Receiver flask	Borosilicate glass	Borosilicate glass

## Specifications

Funnel capacity	300 ml	1000 ml
Flask capacity	1000 ml	4000 ml
Filter diameter	47 mm	90 mm
Effective filtration area	9.6 cm <sup>2</sup>	40.6 cm <sup>2</sup>
Hose barb	5/16 inch (8 mm)	5/16 inch (8 mm)



VF3

VF10

## Ordering Information

VF3, 47 mm Glass Filtration Set 167200-03

300 ml Glass filter holder (1+2+3) 167120-30

1	Glass funnel, 300 ml	167210-03
2	Anodized aluminum clamp	167240-01
3	Glass support base & tubulated cap	167230-01

4	Ground joint flask, 1000 ml	167250-01
5	Silicone fixing sucker	167200-45

VF10, 90 mm Glass Filtration Set 167200-10

1000 ml Glass filter holder (1+2+3+4+5) 167120-35

1	Glass funnel, 1000 ml	167210-10
2	Anodized aluminum clamp	167240-02
3	Copper support screen with PTFE coating	167230-33
4	PTFE gasket	167230-43
5	Glass support base & tubulated cap	167230-09

6	Ground joint flask, 4000 ml	167250-06
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# 47 mm, 90 mm Glass Filtration Sets



VF12



VF15

## Features

- Unique filtration adaptor design can connect with GL45 storage bottle.
- VF12 can filtrate and store solution directly in GL45 storage bottle without the need of being transferred from the filtering flask.

## Applications

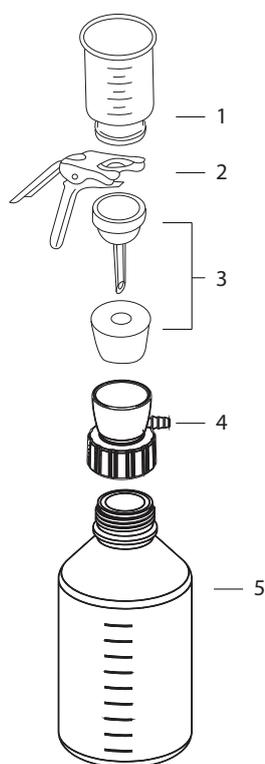
Ideal for the purification of organic, corrosive liquid such as solvent (mobile phase) for HPLC analysis.

## Specifications

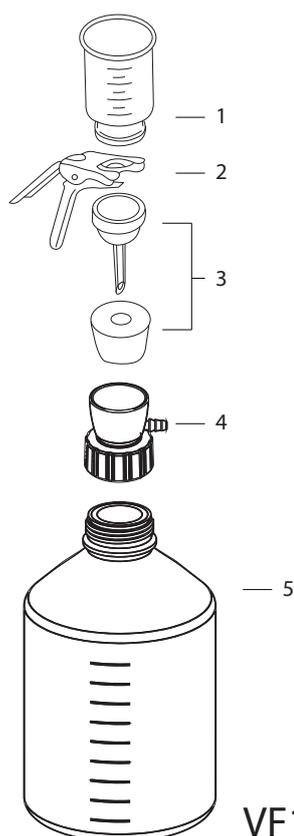
Material	VF12	VF15
Filter funnel	Borosilicate glass	Borosilicate glass
Funnel support base	Borosilicate glass	Borosilicate glass
Membrane support	Sintered glass	Sintered glass
Clamp	Anodized aluminum	Anodized aluminum
Filtration Adaptor	PP (Autoclavable)	PP (Autoclavable)
Storage Bottle	Borosilicate glass	Borosilicate glass

### Specifications

Funnel capacity	300 ml	1000ml
Flask capacity	1000 ml	5000 ml
Filter diameter	47 mm	90 mm
Effective filtration area	9.6 cm <sup>2</sup>	40.6 cm <sup>2</sup>
Hose barb	5/16 inch (8 mm)	5/16 inch (8 mm)



VF12



VF15

## Ordering Information

<b>VF12, 47 mm Glass Filtration Set</b>		<b>167200-12</b>
300 ml Glass filter holder (1+2+3)		167120-31
1	Glass funnel, 300 ml	167210-03
2	Anodized aluminum clamp	167240-01
3	Glass support base (Including No.8 silicone stopper)	167230-03
4	Filtration Adaptor	197000-65
5	1000ml Storage Bottle	197000-59
<b>VF15, 90 mm Glass Filtration Set</b>		<b>167200-15</b>
1000 ml Glass filter holder (1+2+3)		167120-37
1	Glass funnel, 1000 ml	167210-10
2	Anodized aluminum clamp	167240-02
3	Glass support base (Including No.8 silicone stopper)	167230-10
4	Filtration Adaptor	197000-65
5	5000ml Storage Bottle	197000-55

# 47 mm Stainless Steel Filtration Sets



VF2



VF11

## Applications

For filtration requiring the sterilization such as microbiology test or use for purification of corrosive liquid, solvent etc.

## Specifications

Material	VF2	VF11
Filter funnel	SUS316	SUS316
Funnel support base	SUS316	SUS316
Membrane support	SUS316	SUS316
Stopper	Silicone rubber (No.16)	Silicone rubber (No.18)
Receiver flask	Borosilicate glass	Borosilicate glass
Drain hose	Rubber (non-autoclavable)	Rubber (non-autoclavable)
<b>Specifications</b>		
Funnel capacity	100 ml	500 ml
Flask capacity	1000 ml	2000 ml
Filter diameter	47 mm / 50 mm	47 mm / 50 mm
Effective filtration area	9.6 cm <sup>2</sup>	9.6 cm <sup>2</sup>
Hose barb	5/16 inch (8 mm)	5/16 inch (8 mm)

## Ordering Information

VF2, 47 mm Stainless Steel Filtration Set 167200-02

100 ml Stainless steel filter holder (1+2+3+4) 167103-10

1	Stainless steel funnel, 100 ml	167103-61
2	Stainless steel support screen	167100-31
3	Stainless steel support base	167103-60
4	Silicone stopper (No.16)	167110-17

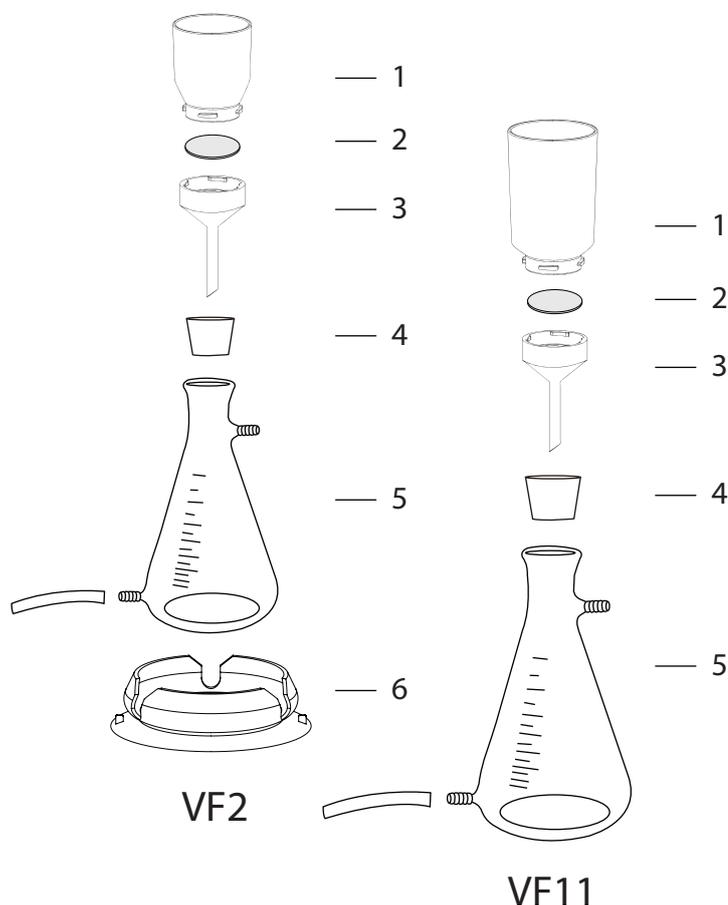
5	Receiver flask with drain, 1000 ml	167300-08
6	Silicone fixing sucker	167200-45

VF11, 47 mm Stainless Steel Filtration Set 167200-11

500 ml Stainless steel filter holder (1+2+3+4) 167103-50

1	Stainless steel funnel, 500 ml	167103-65
2	Stainless steel support screen	167100-31
3	Stainless steel support base	167103-60
4	Silicone stopper (No.18)	167110-18

5	Receiver flask with drain, 2000 ml	167200-13
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# 47 mm Stainless Steel Filtration Sets



video



LF 32



LF 33

## Features

- Spin-lock connection facilitates fast and stable installation without clamp.
- Stainless steel funnel offers excellent chemical resistance and can be fastly sterilized by flame.
- Built-in overflow protection to keep the filtrate from overflowing when waste bottle is full.

## Specifications

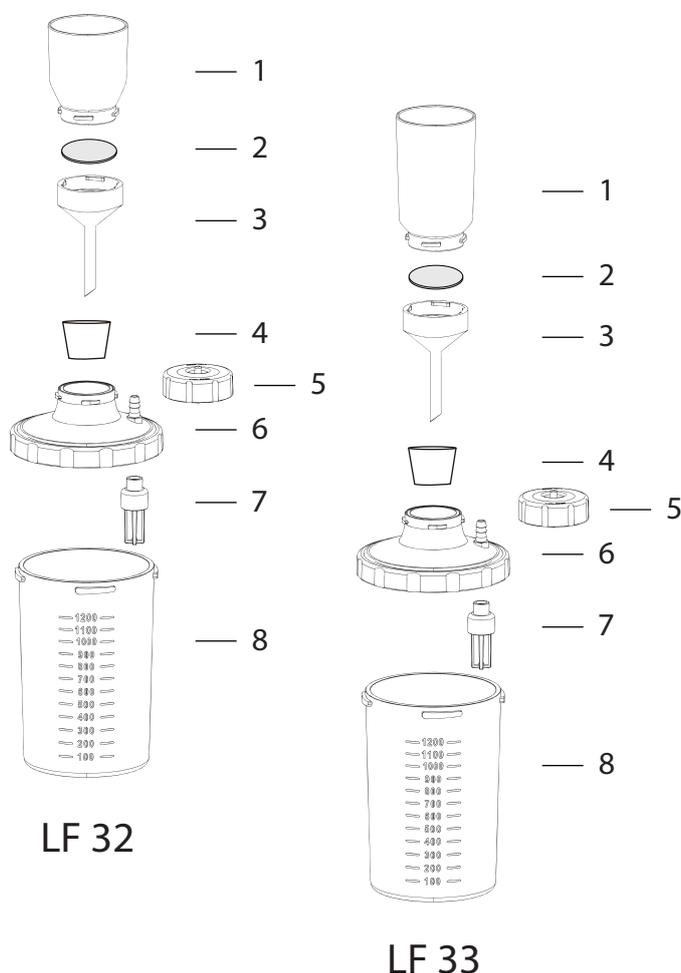
Material	LF 32	LF 33
Filter funnel	SUS316	SUS316
Funnel support base	SUS316	SUS316
Membrane support	SUS316	SUS316
Waste bottle	PC	PC

Specifications	LF 32	LF 33
Funnel capacity	100 ml	300 ml
Flask capacity	1200 ml	1200 ml
Filter diameter	47 mm / 50 mm	47 mm / 50 mm
Effective filtration area	9.6 cm <sup>2</sup>	9.6 cm <sup>2</sup>
Hose barb	5/16 inch (8 mm)	5/16 inch (8 mm)
Funnel graduation	50 ml / 100ml	100 ml / 300ml

## Ordering Information

<b>LF 32, 47 mm Stainless Steel Filtration Set</b>		<b>197010-32</b>
100 ml Stainless steel filter holder (1+2+3+4)		167103-10
1	Stainless steel funnel, 100 ml	167103-61
2	Stainless steel support screen	167100-31
3	Stainless steel support base	167103-60
4	Silicone stopper (No.16)	167110-17
PC waste bottle with cover, 1200 ml (5+6+7+8)		197000-11-PC
5	Black PP cap	197000-40
6	PC cover	197000-32-PC
7	Overflow protection	197000-39
8	PC bottle, 1200 ml	197000-31-PC
<b>LF 33, 47 mm Stainless Steel Filtration Set</b>		<b>197010-33</b>
300 ml Stainless steel filter holder (1+2+3+4)		167103-30
1	Stainless steel funnel, 300 ml	167103-63
2	Stainless steel support screen	167100-31
3	Stainless steel support base	167103-60
4	Silicone stopper (No.16)	167110-17
PC waste bottle with cover, 1200 ml (5+6+7+8)		197000-11-PC
5	Black PP cap	197000-40
6	PC cover	197000-32-PC
7	Overflow protection	197000-39
8	PC bottle, 1200 ml	197000-31-PC



LF 32

LF 33

# 47 mm Filtration Sets



LF 30  
Video



MF 31  
Video



LF 30



MF 31

## Features

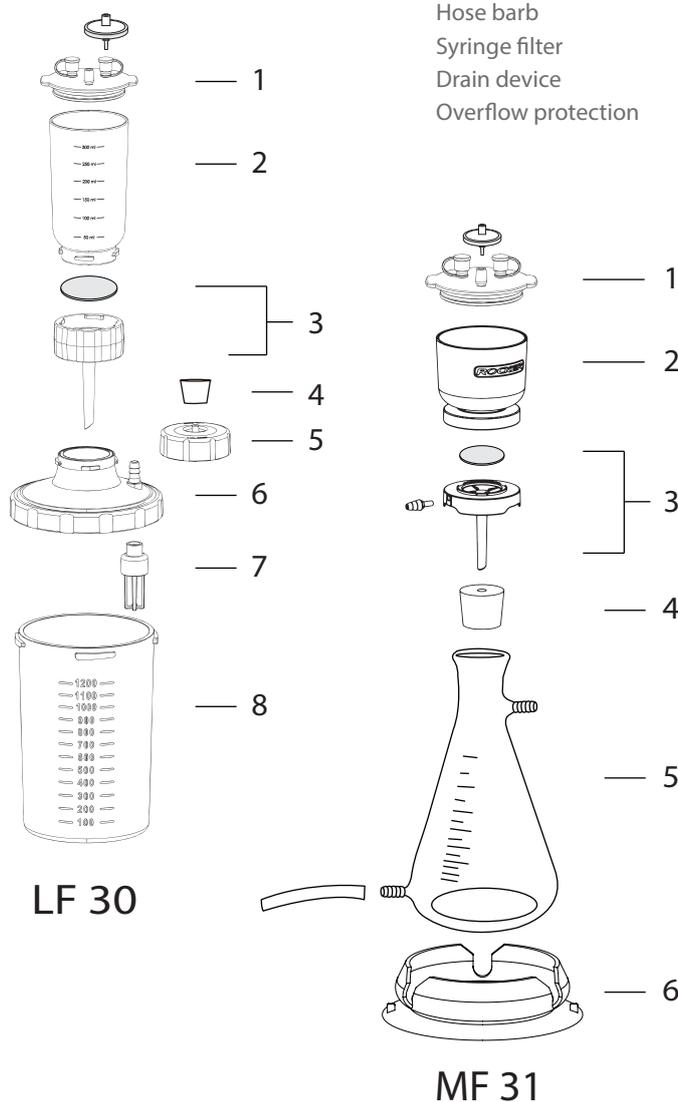
- LF 30 spin-lock connection facilitates fast and stable installation without clamp.
- MF 31 strong magnetic seal allows one-handed operation
- Excellent smash, high temperature resistance and autoclavable.
- Funnel graduated in 50ml, receiver in 100ml increments for easy measurement.

## Specifications

Material	LF 30	MF 31
Filter funnel	PES	PES
Funnel support base	PC	PES
Membrane support	PP	PES
Syringe filter	PTFE	PTFE
Receiver flask	PC	Borosilicate glass
Drain hose	—	Rubber (non-autoclavable)

## Specifications

Funnel capacity	300 ml	300 ml
Flask capacity	1200 ml	1000 ml
Filter diameter	47 mm / 50 mm	47 mm / 50 mm
Effective filtration area	12.5 cm <sup>2</sup>	13.1 cm <sup>2</sup>
Hose barb	5/16 inch (8 mm)	5/16 inch (8 mm)
Syringe filter	25 mm, 0.2 µm	25 mm, 0.2 µm
Drain device	—	Yes
Overflow protection	Yes	—



## Ordering Information

LF 30, 47 mm Filtration Set 197010-30

LF 3, PES filter holder (300 ml) 197000-01  
(1+2+3+4)

1	PP lid kit	197000-36
2	PES funnel, 300 ml	197000-34
3	PC support base	197000-35
4	Silicone stopper (No.16)	167110-17

PC waste bottle with cover, 1200 ml 197000-11-PC  
(5+6+7+8)

5	Black PP cap	197000-40
6	PC cover	197000-32-PC
7	Overflow protection	197000-39
8	PC bottle, 1200 ml	197000-31-PC

MF 31, 47 mm Filtration Set 200320-31

MF 3, Magnetic filter holder (300ml) 200300-01  
(1+2+3+4)

1	PP lid kit for Magnetic funnel	200300-36
2	PES magnetic funnel, 300ml	200300-30
3	PES support base	200300-32
4	Silicone stopper (No.16)	167110-17

5	Receiver flask with drain, 1000 ml	167300-08
6	Silicone fixing sucker	167200-45

# 47 mm Stainless Steel Filter Holder



## Features

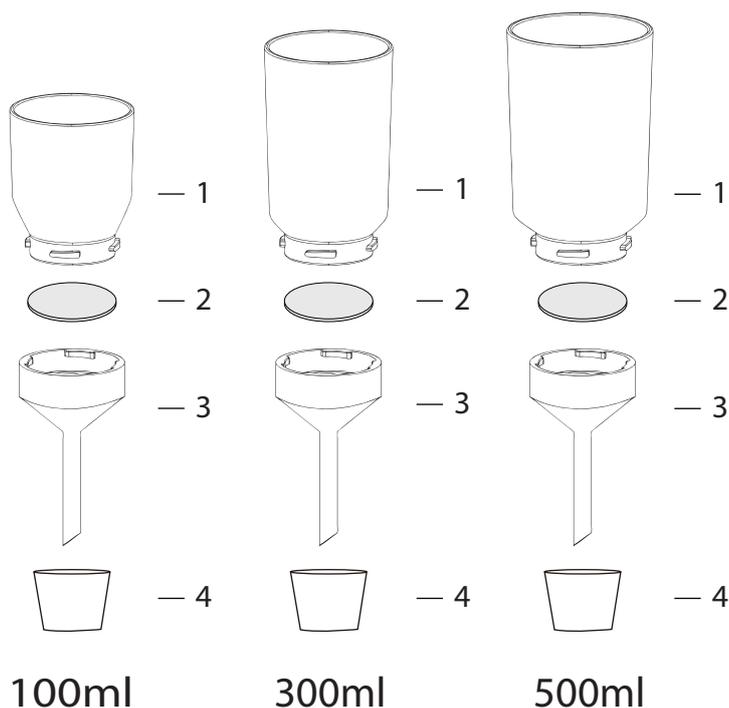
- Spin-lock connection facilitates fast and stable installation without clamp.
- Stainless steel funnel offers excellent chemical resistance and can be fastly sterilized by flame.

## Specifications

Material	167103-10	167103-30	167103-50
Filter funnel	SUS316	SUS316	SUS316
Funnel support base	SUS316	SUS316	SUS316
Membrane support	SUS316	SUS316	SUS316
Funnel lid	SUS316	SUS316	SUS316

## Specifications

Funnel capacity	100 ml	300 ml	500 ml
Filter diameter	47 mm / 50 mm	47 mm / 50 mm	47 mm / 50 mm
Effective filtration area	9.6 cm <sup>2</sup>	9.6 cm <sup>2</sup>	9.6 cm <sup>2</sup>



## Ordering Information

### 100 ml, 47 mm Stainless Steel Filter Holder 167103-10

1	Stainless steel funnel, 100 ml	167103-61
2	Stainless steel support screen	167100-31
3	Stainless steel support base	167103-60
4	Silicone stopper (No.16)	167110-17

### 300 ml, 47 mm Stainless Steel Filter Holder 167103-30

1	Stainless steel funnel, 300 ml	167103-63
2	Stainless steel support screen	167100-31
3	Stainless steel support base	167103-60
4	Silicone stopper (No.16)	167110-17

### 500 ml, 47 mm Stainless Steel Filter Holder 167103-50

1	Stainless steel funnel, 500 ml	167103-65
2	Stainless steel support screen	167100-31
3	Stainless steel support base	167103-60
4	Silicone stopper (No.16)	167110-17

### Stainless Steel Lid

100 ml Stainless steel lid	167103-11
300 ml Stainless steel lid	167103-13
500 ml Stainless steel lid	167103-15

# 47 mm PES Filter Holder

(Polyethersulfone)



## Features

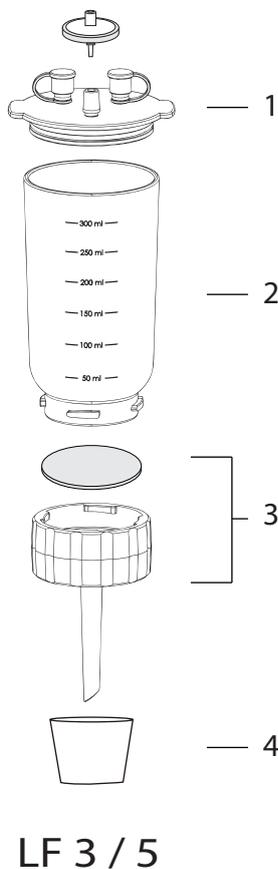
- ◆ Spin-lock connection facilitates fast and stable installation without clamp.
- ◆ PES structure offers excellent smash, high temperature (180°C) resistance and autoclavable.
- ◆ Reusable, friendly to the earth and save your money.
- ◆ Funnel graduated in 50ml increments for easy measurement.
- ◆ LF 3/5 equips with No.16 stopper that allows it to fit other receiver flasks.
- ◆ LF 3a/5a is available to fit different tissue bottle.

## Specifications

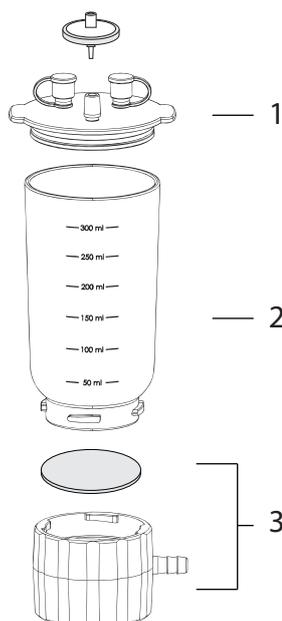
Material	LF 3 / LF 5	LF 3a / LF 5a
Filter funnel	PES	PES
Funnel support base	PC	PC
Membrane support	PP	PP
Funnel lid	PP	PP
Cap of lid	Silicone	Silicone
Syringe filter	PTFE	PTFE

## Specifications

	LF 3 / LF 5	LF 3a / LF 5a
Funnel capacity	300 ml / 500 ml	300 ml / 500 ml
Filter diameter	47 mm / 50 mm	47 mm / 50 mm
Effective filtration area	12.5 cm <sup>2</sup>	12.5 cm <sup>2</sup>
Syringe filter	25 mm, 0.2 µm	25 mm, 0.2 µm
Lid inlet fitting diameter	7 mm	7 mm



LF 3 / 5



LF 3a / 5a

## Ordering Information

LF 3, 47 mm PES Filter Holder (300ml)	197000-01
LF 5, 47 mm PES Filter Holder (500ml)	197000-06
1 LF 3, PP lid kit	197000-36
LF 5, PP lid kit	200300-36
2 PES funnel, 300 ml	197000-34
PES funnel, 500 ml	197000-56
3 PC support base	197000-35
4 Silicone stopper (No.16)	167110-17
LF 3a, 47 mm PES Filter Holder (300ml)	197000-02
LF 5a, 47 mm PES Filter Holder (500ml)	197000-07
1 LF 3, PP lid kit	197000-36
LF 5, PP lid kit	200300-36
2 PES funnel, 300 ml	197000-34
PES funnel, 500 ml	197000-56
3 Storage bottle adaptor	197000-38

# 47 mm PES Magnetic Filter Holder

(Polyethersulfone)



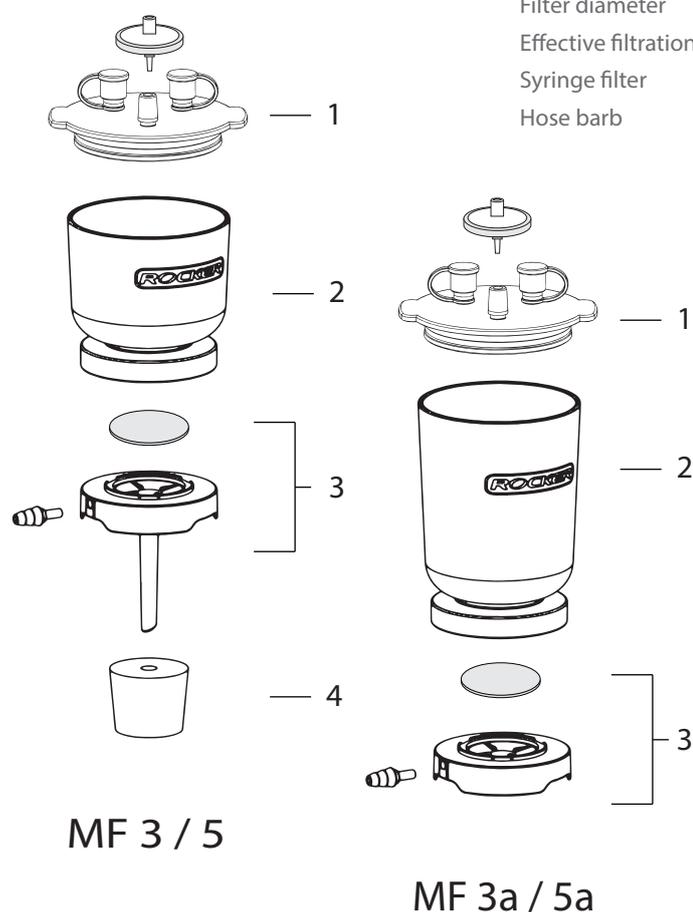
## Features

- ◆ Compatible with various kinds of bottle, vacuum flask with or without side arm to collect filtrate directly.
- ◆ Strong magnetic seal allows one-handed operation, prevents possible twisting and tearing of the membrane. Membrane guide on the base helps position membrane easily.
- ◆ PES (Polyether sulfone) construction, resistant to a wide range of chemicals and high temperature, sturdy and unbreakable.
- ◆ Withstands autoclave cycles (121°C, 20 minutes).
- ◆ MF magnetic filter holder was awarded the United States and Taiwan invention patent.

## Specifications

Material	MF 3 / MF 5	MF 3a / MF 5a
Filter funnel	PES	PES
Funnel support base	PES	PES
Membrane support	PES	PES
Funnel lid	PP	PP
Hose barb	PES	PES
Syringe filter	PTFE	PTFE

Specifications	MF 3 / MF 5	MF 3a / MF 5a
Funnel capacity	300 ml / 500 ml	300 ml / 500 ml
Filter diameter	47 mm	47 mm
Effective filtration area	13.1 cm <sup>2</sup>	13.1 cm <sup>2</sup>
Syringe filter	25 mm, 0.2 μm	25 mm, 0.2 μm
Hose barb	4-8 mm	4-8 mm



## Ordering Information

MF 3, 47 mm PES Magnetic Filter Holder (300ml) 200300-01

MF 5, 47 mm PES Magnetic Filter Holder (500ml) 200500-01

- 1 PP lid kit for Magnetic funnel 200300-36
- 2 PES magnetic funnel, 300ml 200300-30
- 2 PES magnetic funnel, 500ml 200500-30
- 3 PES support base 200300-32
- 4 Silicone stopper (No.16) 167110-17

MF 3a, 47 mm PES Magnetic Filter Holder (300ml) 200310-01

MF 5a, 47 mm PES Magnetic Filter Holder (500ml) 200510-01

- 1 PP lid kit for Magnetic funnel 200300-36
- 2 PES magnetic funnel, 300ml 200300-30
- 2 PES magnetic funnel, 500ml 200500-30
- 3 PES support base 200310-32

# Vacuum Filtration System

Two-Year Warranty

## Features

### Compact and safe operation

Lafil 400 series is a unique filtration system by combining vacuum source with filtration ware. Its compact design can save much bench space than the traditional ones. With a fence-like platform design, it can prevent user's negligence from tipping over the waste bottle.

### The patented spin-lock design

The filter holder can be connected with waste bottle by patented spin-lock connection giving a fast and stable installation without clamp.

### Overflow protection

Waste bottle comes with a built-in overflow protection to keep the filtrate from overflowing when waste bottle is full.

### Autoclavable

Waste bottle and filter holder is made of engineering plastics which are shatterproof, high temperature resistance and autoclavable.

### International safety certification

CE certification

## Applications

- Filtration for microbiology test
- Suspended solid test
- Vacuum filtration

## Ordering Information

### 197401-11(22)

Lafil 400 - LF 30, Vacuum Filtration System, AC110V, 60Hz (AC220V, 50Hz)

### 197402-11(22)

Lafil 400 - LF 32, Vacuum Filtration System, AC110V, 60Hz (AC220V, 50Hz)

### 197400-11(22)

Lafil 400, Vacuum Pump  
AC110V, 60Hz (AC220V, 50Hz)



video

Lafil 400 - LF 30



video

Lafil 400 - LF 32

## Specification

Model	Lafil 400 - LF 30		Lafil 400 - LF 32	
	110V/60Hz	220V/50Hz	110V/60Hz	220V/50Hz
Max. power (W)	100	80	100	80
Max. current (A)	1.0	0.4	1.0	0.4
Max. vacuum	- 720 mmHg		- 720 mmHg	
Max. flow rate	25 l/min	22 l/min	25 l/min	22 l/min
Motor rotation	1750 RPM	1450 RPM	1750 RPM	1450 RPM
Hose barb	5/16 inch (8 mm)		5/16 inch (8 mm)	
Dimension (LxWxH)	33.5 x 23 x 45 cm		33.5 x 23 x 40 cm	
Part	Material		Material	
Filter funnel	PES ( 300 ml, 47 mm / 50 mm )		SUS316 ( 100 ml, 47 mm / 50 mm )	
Waste bottle	PC ( 1200 ml )		PC ( 1200 ml )	
Funnel support base	PP ( for Φ47 mm / Φ50 mm membrane )		SUS316 ( for Φ47 mm / Φ50 mm membrane )	
Funnel lid	PP ( Containing PTFE syringe filter, ) 25 mm, 0.2 μm		—	
Overflow protection	PP		PP	

# Vacuum Filtration System

**Two-Year Warranty**

## Features

### Compact and safe operation

Lafil 400 series is a unique filtration system by combining vacuum source with filtration ware. Its compact design can save much bench space than the traditional ones. With a fence-like platform design, it can prevent user's negligence from tipping over the waste bottle.

### The patented spin-lock design

The filter holder can be connected with waste bottle by patented spin-lock connection giving a fast and stable installation without clamp.

### Autoclavable

LF 5a is made of engineering plastics which shatterproof, high temperature resistance and autoclavable.

### International safety certification

CE certification

## Applications

- Sample pretreatment
- Medium and buffer purification
- Vacuum filtration

## Ordering Information

### 197404-11(22)

Lafil 400 - LF 5a - 500, Vacuum Filtration System, AC110V, 60Hz (AC220V, 50Hz)

### 197400-11(22)

Lafil 400, Vacuum Pump  
AC110V, 60Hz (AC220V, 50Hz)

### ROU-1152-RLS

Autofil, 500ml Disposable Funnel, 24PK

### ROU-1153-RLS

Autofil, 1000ml Disposable Funnel, 24PK



## Specification

Model	Lafil 400 - LF 5a - 500	
Voltage	110V/60Hz	220V/50Hz
Max. power (W)	100	80
Max. current (A)	1.0	0.4
Max. vacuum	- 720 mmHg	- 720 mmHg
Max. flow rate	25 l/min	22 l/min
Motor rotation	1750 RPM	1450 RPM
Hose barb	5/16 inch (8 mm)	
Dimension (LxWxH)	33.5 x 23 x 43 cm	
Part	Material	Material
Filter funnel	PES ( 500ml )	PE ( 500ml, 1000ml )
Storage bottle	Borosilicate glass ( 500 ml )	Borosilicate glass ( 500 ml, *1000 ml )
Funnel support base	PP ( for Φ47 mm / Φ50 mm membrane )	
Membrane filter	—	PES ( 0.22 μm, Φ90 mm )
Funnel lid	PP	PE

\* 1000ml tissue bottle is optional

# Vacuum Filtration System

Two-Year Warranty

## Features

➤ **No air pollution, maintenance free**

Rocker series pumps are piston-driven, no need of lubricant, regular oil changes and maintenance; with no oil pollution.

➤ **The patented spin-lock design**

Rocker 300 - LF 30 filter holder can be connected with waste bottle by patented spin-lock connection giving a fast and stable installation without clamp.

➤ **The patented magnetic design**

Rocker 300 - MF 31 strong magnetic seal allows one-handed operation, prevents possible twisting and tearing of the membrane.

➤ **Overflow protection**

Rocker 300 - LF 30 waste bottle comes with a built-in overflow protection to keep the filtrate from overflowing when waste bottle is full.

## Applications

- Air sampling
- Suspended solid test
- Vacuum Filtration

## Ordering Information

**167305-11(22)**

Rocker 300 - LF 30, Vacuum Filtration System, complete set includes :

- \* Rocker 300, Vacuum Pump
- \* LF 30, Filtration Set
- \* Silicone Tube (1m)

**167311-11(22)**

Rocker 300 - MF 31, Vacuum Filtration System, complete set includes :

- \* Rocker 300, Vacuum Pump
- \* MF 31, Filtration Set
- \* Silicone Tube (1m)

### Rocker 300 - LF 30



### Rocker 300 - MF 31



## Specification

Model	Rocker 300 - LF 30		Rocker 300 - MF 31	
Voltage	110V/60Hz	220V/50Hz	110V/60Hz	220V/50Hz
Max. flow rate	23 l/min	20 l/min	23 l/min	20 l/min
Max. vacuum	- 680 mmHg		- 680 mmHg	
Capacity (Funnel / Waste bottle)	300 ml / 1200 ml		300 ml / 1000 ml	
Filter diameter	47 mm / 50 mm		47 mm / 50 mm	
Effective filtration area	12.5 cm <sup>2</sup>		13.1 cm <sup>2</sup>	
Hose barb	5/16 inch (8 mm)		5/16 inch (8 mm)	
Part	Material		Material	
Filter funnel	PES		PES	
Funnel support base	PC		PES	
Membrane support	PP		PES	
Waste bottle	PC		Borosilicate glass	
Funnel lid	PP		PP	
Overflow protection	PP		-	

# Vacuum Filtration System

## Features

### ❖ No air pollution, maintenance free

Rocker 300C vacuum pump is driven by diaphragm, no need of lubricant, regular oil changes and maintenance; with no oil pollution.

### ❖ Save Time

VF 12 can filtrate and store solution directly in GL45 storage bottle without the need of being transferred from the filtering flask.

### ❖ Suitable for all GL45 storage bottle

Unique filtration adaptor design can connect with GL45 storage bottle (1000ml, 2000ml, 5000ml...etc.)

## Applications

❖ Ideal for the purification of organic, corrosive liquid such as solvent (mobile phase) for HPLC analysis.

## Ordering Information

### 189302-11(22)

Rocker 300C - VF 12, Vacuum Filtration System, complete set includes :

- \* Rocker 300C, Vacuum Pump
- \* VF 12, Filtration Set
- \* Silicone Tube (1m)

### 169302-11(22)

Chemker 300 - VF 12, Vacuum Filtration System, complete set includes :

- \* Chemker 300, Vacuum Pump
- \* VF 12, Filtration Set
- \* Silicone Tube (1m)



## Specification

Model	Rocker 300C - VF12		Chemker 300 - VF12	
Voltage	110V/60Hz	220V/50Hz	110V/60Hz	220V/50Hz
Max. flow rate	23 l/min	20 l/min	20 l/min	18 l/min
Max. vacuum	- 630 mmHg		- 670 mmHg	
Capacity (Funnel / Waste bottle)	300 ml / 1000 ml		300 ml / 1000 ml	
Filter diameter	47 mm		47 mm	
Effective filtration area	9.6 cm <sup>2</sup>		9.6 cm <sup>2</sup>	
Hose barb	5/16 inch (8 mm)		5/16 inch (8 mm)	
Part	Material		Material	
Filter funnel	Borosilicate glass		Borosilicate glass	
Funnel support base	Borosilicate glass		Borosilicate glass	
Membrane support	Borosilicate glass		Borosilicate glass	
Clamp	Anodized aluminum		Anodized aluminum	
Filtration Adaptor	PP		PP	
Storage Bottle	Borosilicate glass		Borosilicate glass	

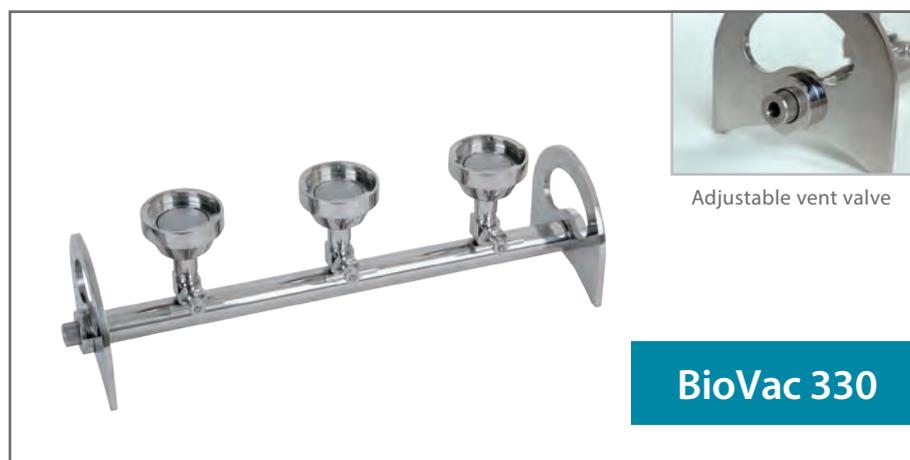
# Multi-Branch Manifold

## Features

- **The whole set is made of SUS316**  
All parts of BioVac 330, 320 manifold are made of SUS316.
- **Adjustable vent valve design**  
The adjustable vent valve design can avoid "Water Hammer" and help to drain residual liquid off the tube.
- **Individual control valve**  
Each branch permits individual control.
- **The patented spin-lock design**  
BioVac 330 manifold uses a patented spin-lock connection which allows for fast and stable installation without clamp.
- **Compatible with different sizes of funnels**  
BioVac 330 manifold is available for Rocker standard 100, 300, 500ml S.S. funnel at option.



\* Rocker standard S.S. funnels



BioVac 330



BioVac 320

## Applications

- Filtration for microbiology test
- Chemistry Experiments
- General laboratory filtration

## Ordering Information

**167103-23** BioVac 330, 3 Places Stainless Steel Manifold (without S.S. funnel)

**167110-23** BioVac 320, 3 Places Stainless Steel Manifold

**167103-61** 100ml Stainless Steel Funnel

**167103-63** 300ml Stainless Steel Funnel

**167103-65** 500ml Stainless Steel Funnel

**200300-01** MF 3, 300ml Magnetic filter holder with lid kit

**200500-01** MF 5, 500ml Magnetic filter holder with lid kit

## Specification

Model	BioVac 330	BioVac 320
Number of branch	3	3
Filter diameter	47 mm / 50 mm	Optional
Funnel capacity	100 ml / 300 ml / 500 ml	Optional
Effective filtration area	9.6 cm <sup>2</sup>	Optional
Hose barb	5/16 inch (8 mm)	5/16 inch (8 mm)
Dimension (LxWxH)	44.5 x 12.9 x 12.5 cm	44.5 x 12.9 x 15 cm
Part	Material	Material
Body	SUS316	SUS316
Control valve	SUS316	SUS316
Funnel support base	SUS316	SUS316
Handle	SUS316	SUS316
Connector	SUS316	SUS316

# Vacuum Filtration System

Two-Year Warranty

## Features

### Special design for microbiology filtration

BioVac 330B is designed for a large number of samples filtration in microbiology test. The complete system includes vacuum pump, manifold, burner, waste bottle and filter.

### The manifold is made of SUS316

All parts of manifold are made of SUS316 which offer excellent chemical resistance and can be fast sterilized by flame, steam and oven etc. .

### The patented spin-lock design

The manifold uses a patented spin-lock connection which allows for fast and stable installation without clamp.

### 4 liter PP waste bottle with drain

The large capacity of 4000ml waste bottle with drain offers convenience of collecting and draining waste solution.

### Adjustable vent valve design

The adjustable vent valve design can avoid "Water Hammer" and help to drain residual liquid off the tube.



BioVac 330B



The adjustable vent valve design can avoid "Water Hammer" and help to drain residual liquid off the tube.

## Applications

- Filtration for microbiology test
- Chemical experiment
- General laboratory filtration

## Ordering Information

### 167403-11(22)

BioVac 330B, Vacuum Filtration System, complete set includes :

- \* Rocker 400, Oil Free Vacuum Pump
- \* BioVac 331, 3 Places Stainless Steel Manifold Set
- \* 4000 ml PP Waste Bottle with drain
- \* Dragon 100, Torch Burner
- \* MCE Membrane, 47 mm, 0.45 μm, 200/PK
- \* Silicone Tube (2m)

## Specification

Model	BioVac 330B	
Voltage	110V/60Hz	220V/50Hz
Max. flow rate	37 l/min	34 l/min
Max. vacuum	- 680 mmHg	
Waste bottle	4000 ml, made of PP with drain	
Number of branch	3	
Filter diameter	47mm / 50mm	
Funnel capacity	100ml	
Effective filtration area	9.6 cm <sup>2</sup>	
Hose barb	5/16 inch (8 mm)	
Manifold Part	Material	
Body	SUS316	
Control valve	SUS316	
Filter funnel	SUS316	
Funnel support base	SUS316	
Connector	SUS316	

# Alumium Multi-Branch Manifold

## Features

➤ **Light and handy aluminum design**

All parts of MultiVac 310-MS are made of anodized aluminum which is light, cost-effective and autoclavable.

➤ **Quick-Fit hose barb**

Detachable hose barb can be connected to either side of the manifold quickly towards the vacuum source.

➤ **Individual control valve**

Each branch permits individual control.

➤ **Compatible with different sizes of filter holders**

MultiVac 310-MS manifold include no.8 silicone stoppers which can accept various types of filter holders at option.



## Applications

- Filtration for suspended solid test
- Filtration for microbiology test
- General laboratory filtration



The tubing to the vacuum source can be connected to the other side of manifold.

## Ordering Information

**180310-01**

MultiVac 310-MS, 3 Places Aluminum Manifold with No. 8 stopper x 3

### Specification

Model	MultiVac 310-MS
Number of branch	3
Filter diameter	Optional
Funnel capacity	Optional
Effective filtration area	Optional
Hose barb	5/16 inch (8 mm)
Dimension (LxWxH)	47 x 13 x 16 cm
Part	Material
Body	aluminum
Control valve	aluminum
Handle	aluminum
Hose barb	aluminum

# Vacuum Filtration System

**Two-Year Warranty**

## Features

- **Special design for large number samples**

MultiVac 310-MS-T is an economical model for large sample filtration. This system includes vacuum pump, manifold, waste bottle and filter holders.
- **Light and handy aluminum design**

The manifold is made of anodized aluminum which is autoclavable, light and cost-effective.
- **Magnetic filter holder is included**

Magnetic filter holder allows for one-handed operation, and can prevent the membrane from being twisted or torn.
- **4 liter PP waste bottle with drain**

The large capacity of 4000ml waste bottle with drain offers convenience of collecting and draining waste solution.



## Applications

- Filtration for suspended solid test
- Filtration for microbiology test
- General laboratory filtration

## Ordering Information

### 180311-11(22)-T

MultiVac 310-MS-T, Vacuum Filtration System, complete set includes :

- \* Rocker 400, Oil Free Vacuum Pump
- \* MultiVac 310-MS, 3 Places Aluminum Manifold
- \* MF 3, 300ml Magnetic Filter Holder with lid kid (3 pcs)
- \* 4000 ml PP Waste Bottle with drain
- \* Silicone Tube (2m)

## Specification

Model	MultiVac 310-MS-T	
Voltage	110V/60Hz	220V/50Hz
Max. flow rate	37 l/min	34 l/min
Max. vacuum	- 680 mmHg	
Waste bottle	4000 ml, made of PP with drain	
Number of branch	3	
Filter diameter	47mm	
Funnel capacity	300ml	
Effective filtration area	13.1 cm <sup>2</sup>	
Hose barb	5/16 inch (8 mm)	
Manifold Part	Material	
Body	aluminum	
Control valve	aluminum	
Handle	aluminum	
Hose barb	aluminum	

# Stainless Steel Spin-Lock Design Multi-Branch Manifold

## Features

### Quick-assembly and disassembly

Each component can be removed easily by hand for cleaning and autoclaving to prevent biofilms and eliminate sources of contamination.

### Convertible funnel adaptor

Convertible funnel adaptor design allows user to fit the desired funnel (reusable or disposable) easily.

### Innovative vent valve design

An adjustable vent valve integrated with the pipe can eliminate water hammer phenomenon and help drain out residual waste water.

### Quick-Fit hose barb

Detachable hose barb can be connected to either side of the manifold quickly towards the vacuum source.

### Individual control valve

Each branch permits individual control.

### Compatible with different sizes of funnels

MultiVac 300-MB / 600-MB manifolds can accept Rocker standard S.S. 100, 300, 500ml funnel at option.

## Applications

- ▶ Filtration for microbiology test
- ▶ Chemical experiment
- ▶ General laboratory filtration

## Ordering Information

### 180300-02

MultiVac 300-MB, 3 Places S.S. Manifold with Rocker S.S. funnel adaptor

### 180600-02

MultiVac 600-MB, 6 Places S.S. Manifold with Rocker S.S. funnel adaptor

**167103-61** 100ml S.S. Funnel

**167103-63** 300ml S.S. Funnel

**167103-65** 500ml S.S. Funnel



## Specification

Model	MultiVac 300-MB	MultiVac 600-MB
Number of branch	3	6
Filter diameter	47 mm / 50 mm	47 mm / 50 mm
Funnel capacity	100 ml / 300 ml / 500 ml	100 ml / 300 ml / 500 ml
Effective filtration area	9.6 cm <sup>2</sup>	9.6 cm <sup>2</sup>
Hose barb	5/16 inch (8 mm)	5/16 inch (8 mm)
Dimension (LxWxH)	48 x 13 x 11 cm	85 x 13 x 11 cm
Part	Material	Material
Body	SUS316	SUS316
Control valve	SUS316	SUS316
Funnel support base	SUS316	SUS316
Membrane support	SUS316	SUS316
Handle/Knob	aluminum	aluminum
Connector	SUS316	SUS316

# Stainless Steel Multi-Branch Manifold

## Features

- **Quick-assembly and disassembly**

Each component can be removed easily by hand for cleaning and autoclaving to prevent biofilms and eliminates sources of contamination.
- **Convertible funnel adaptor**

Convertible funnel adaptor design allows user to fit the desired funnel (reusable or disposable) easily.
- **Innovative vent valve design**

An adjustable vent valve integrated with the pipe can eliminate water hammer phenomenon and help drain out residual waste water.
- **Quick-Fit hose barb**

Detachable hose barb can be connected to either side of the manifold quickly towards the vacuum source.
- **Individual control valve**

Each branch permits individual control.

## Applications

- Filtration for microbiology test
- Chemical experiment
- General laboratory filtration

## Ordering Information

### 180300-01

MultiVac 300-MS, 3 Places S.S. Manifold with No. 8 stopper funnel adaptor

### 180600-01

MultiVac 600-MS, 6 Places S.S. Manifold with No. 8 stopper funnel adaptor

**200300-01** MF 3, 300ml Magnetic Filter Holder with lid kit

**200500-01** MF 5, 500ml Magnetic Filter Holder with lid kit

### 167110-16

No.8 Silicone Stopper



## Specification

Model	MultiVac 300-MS	MultiVac 600-MS
Number of branch	3	6
Filter diameter	Optional	Optional
Funnel capacity	Optional	Optional
Effective filtration area	Optional	Optional
Hose barb	5/16 inch (8 mm)	5/16 inch (8 mm)
Dimension (LxWxH)	48 x 13 x 16 cm	85 x 13 x 16 cm
Part	Material	Material
Body	SUS316	SUS316
Control valve	SUS316	SUS316
Funnel support base	SUS316	SUS316
Handle/Knob	aluminum	aluminum
Connector	SUS316	SUS316

# How to order?

You can select Combination A, B or C to c

**A**

Step 1. Choose the manifold



MultiVac 300-MB  
3 Places Stainless Steel Manifold  
(180300-02)



MultiVac 600-MB  
6 Places Stainless Steel Manifold  
(180600-02)

**B**

Step 1. Choose the manifold



MultiVac 300-MS  
3 Places Stainless Steel Manifold  
(180300-01)



MultiVac 600-MS  
6 Places Stainless Steel Manifold  
(180600-01)



Step 2. Choose the S.S. funnel



Rocker, 100ml  
Stainless Steel Funnel  
(167103-61)



Rocker, 300ml  
Stainless Steel Funnel  
(167103-63)



Rocker, 500ml  
Stainless Steel Funnel  
(167103-65)



Stainless Steel Cover  
for 100ml funnel  
(167103-11)



Stainless Steel Cover  
for 300ml funnel  
(167103-13)



Stainless Steel Cover  
for 500ml funnel  
(167103-15)



Step 2. Choose the filter holder



Rocker, 300ml  
MF 3, Magnetic Filter Holder  
(200300-01)



Rocker, 500ml  
MF 5, Magnetic Filter Holder  
(200500-01)



Rocker, 300ml  
Glass Filter Holder  
(167120-31)

# complete your order



Step 1. Choose the manifold



MultiVac 300  
3 Places Stainless Steel Manifold  
(180300-00)



MultiVac 600  
6 Places Stainless Steel Manifold  
(180600-00)



Step 2. Choose the disposable funnel and adaptor



Sartorius, 100ml  
disposable plastic funnel  
(16A07)



Millipore, 100ml / 250ml  
Microfil, disposable plastic funnel  
(MIACFD101 / MIACFD201)



Pall, 100ml / 250ml  
disposable plastic funnel  
(4870 / 4871)



SUS316 Adaptor for Sartorius  
disposable plastic funnel  
(190100-74)



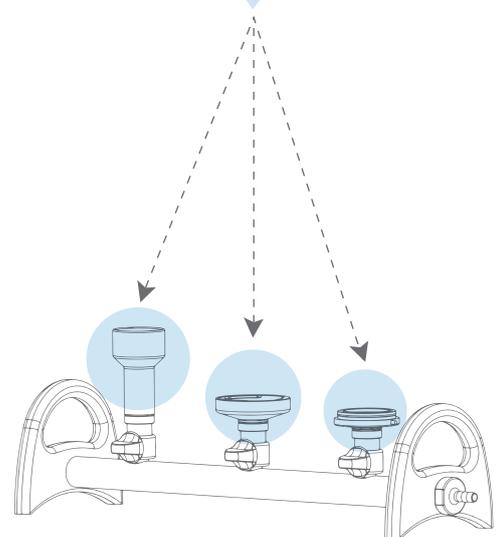
SUS316 Adaptor for Millipore  
disposable plastic funnel  
(190100-73)



SUS316 Adaptor for Pall  
disposable plastic funnel  
(190100-75)

## Customized Design

We can offer customized adaptor for your funnel



# Vacuum Filtration System

Two-Year Warranty

## Features

### Special design for microbiology filtration

MultiVac 330-MB-T / 600-MB-T are designed for a large number of samples filtration in microbiology test. Each system includes vacuum pump, manifold, burner, waste bottle and filter.

### Innovative vent valve design

An adjustable vent valve integrated with the pipe can eliminate water hammer phenomenon and help drain out residual waste water.

### Quick-Fit hose barb

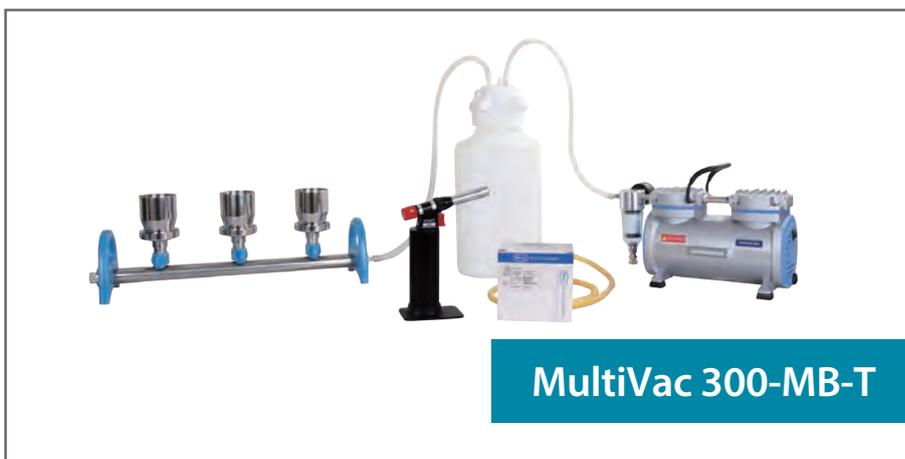
Detachable hose barb can be connected to either side of the manifold quickly towards the vacuum source.

### Individual control valve

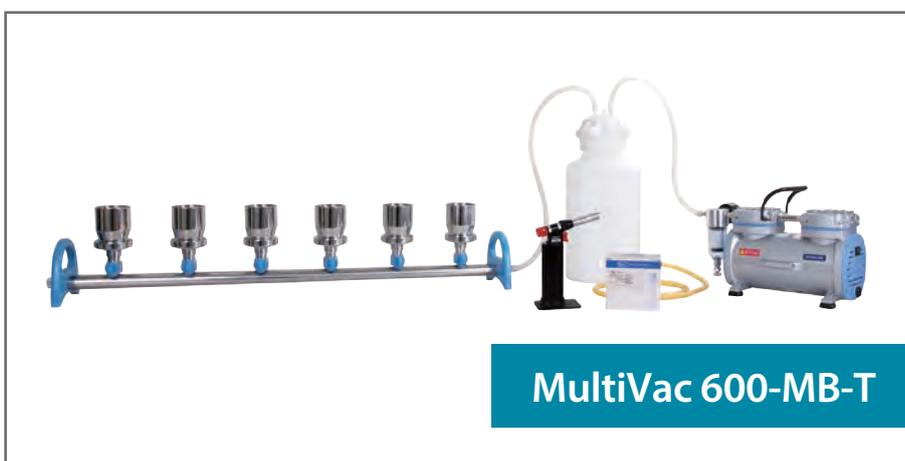
Each branch permits individual control.

## Applications

- ◆ Filtration for microbiology test
- ◆ Chemical experiment
- ◆ General laboratory filtration



MultiVac 300-MB-T



MultiVac 600-MB-T

## Ordering Information

### 180300-11-T (22-T)

MultiVac 300-MB-T, Vacuum Filtration System, complete set includes :

- \* Rocker 400, Oil Free Vacuum Pump
- \* MultiVac 300-MB, 3 Places Stainless Steel Manifold
- \* 3 x S.S. Funnel 100ml
- \* 4000 ml PP Waste Bottle with drain
- \* Dragon 100, Torch Burner
- \* MCE Membrane, 47 mm, 0.45 µm, 200/PK
- \* Silicone Tube (2m)

### 180600-11-T (22-T)

MultiVac 600-MB-T, Vacuum Filtration System, complete set includes :

- \* Rocker 400, Oil Free Vacuum Pump
- \* MultiVac 600-MB, 6 Places Stainless Steel Manifold
- \* 6 x S.S. Funnel 100ml
- \* 4000 ml PP Waste Bottle with drain
- \* Dragon 100, Torch Burner
- \* MCE Membrane, 47 mm, 0.45 µm, 200/PK
- \* Silicone Tube (2m)

## Specification

Model	MultiVac 300-MB-T		MultiVac 600-MB-T	
Voltage	110V/60Hz	220V/50Hz	110V/60Hz	220V/50Hz
Max. flow rate	37 l/min	34 l/min	37 l/min	34 l/min
Max. vacuum	- 680 mmHg		- 680 mmHg	
Waste bottle	4000 ml, made of PP with drain		4000 ml, made of PP with drain	
Number of branch	3		6	
Filter diameter	47mm / 50mm		47mm / 50mm	
Funnel capacity	100ml		100ml	
Effective filtration area	9.6 cm <sup>2</sup>		9.6 cm <sup>2</sup>	
Hose barb	5/16 inch (8 mm)		5/16 inch (8 mm)	
Manifold Part	Material		Material	
Body	SUS316		SUS316	
Control valve	SUS316		SUS316	
Filter funnel / base	SUS316		SUS316	
Handle/Knob	aluminum		aluminum	
Connector / vent valve	SUS316		SUS316	

# WaterVac100 Vacuum Filtration System

## Features

### Save 70% bench space

The compact design of WaterVac 100 vacuum filtration system is ideal for use on the work bench or in the laminar flow hood where its small size can save much precious space.

### Filtration without need of waste bottle

No suction flask and waste bottle design can save lots of bench space and time to empty waste bottle.

### Versatile

Replaceable funnel adaptor design makes WaterVac 100 compatible with various kinds of filter holder.

### Easy Operation

Simply put membrane on filter holder and push on/off button to start filtration easily.

## Applications

- Microbiological Filtration Technique for analyzing aqueous-based fluids for microbial contamination.
- Suspended Solid test for municipal, surface, ground and drinking water.
- General filtration without the need of collecting filtrate.

## Ordering Information

### 190100-01/02

WaterVac 100, Vacuum Filtration System with AC100-240V adaptor, US /EU plug

### 190110-01/02

WaterVac 100-MS, Vacuum Filtration System with No. 8 stopper funnel adaptor, AC100-240V adaptor, US /EU plug

### 190120-01/02

WaterVac 100-MB, Vacuum Filtration System with Rocker S.S. funnel adaptor, AC100-240V adaptor, US /EU plug



## Specification

Model	WaterVac 100 - MS	WaterVac 100 - MB
Voltage	DC 12 V, 1.5A	
Max. flow rate	2.2 LPM (air) / 0.5 LPM (liquid)	
Max. vacuum	540 mmHg	
Weight	1.16 kg	
Effective filtration area	optional	
Dimension (LxWxH)	170 x 120 x 96 mm	
Suppose base	silicone stopper	Spin-Lock design
Part	Material	
Housing	SUS304	
Valve plate	EPDM (Ethylene Propylene Diene Monomer)	
Diaphragm	EPDM (Ethylene Propylene Diene Monomer)	
Inlet / outlet port	SUS316	
O-ring	FKM	
Tube	silicon , Ø4x8mm, 2m	

# How to order?

You can select Combination A, B or C to c

**A**



WaterVac 100-MB  
vacuum filtration system  
(190120-01/02) (U.S. plug / EU plug)

**B**



WaterVac 100-MS  
vacuum filtration system  
(190110-01/02) (U.S. plug / EU plug)



Rocker, 100ml  
Stainless Steel Funnel  
(167103-61)



Rocker, 300ml  
Stainless Steel Funnel  
(167103-63)



Rocker, 500ml  
Stainless Steel Funnel  
(167103-65)



Stainless Steel Cover  
for 100ml funnel  
(167103-11)



Stainless Steel Cover  
for 300ml funnel  
(167103-13)



Stainless Steel Cover  
for 500ml funnel  
(167103-15)



Rocker, 300ml  
MF 3, Magnetic Filter Holder  
(200300-01)



Rocker, 500ml  
MF 5, Magnetic Filter Holder  
(200500-01)

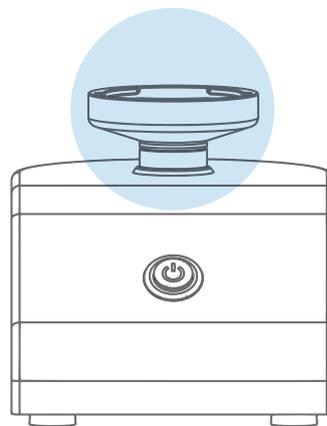
# complete your order



WaterVac 100  
vacuum filtration system  
(190100-01/02) (U.S. plug / EU plug)

## Customized Design

We can offer customized adaptor for your funnel



Sartorius, 100ml  
disposable plastic funnel  
(16A07)



SUS316 Adaptor for Sartorius  
disposable plastic funnel  
(190100-74)



Millipore, 100ml / 250ml  
disposable plastic funnel  
(MIACFD101 / MIACFD201)



SUS316 Adaptor for Millipore  
disposable plastic funnel  
(190100-73)



Pall, 100ml / 250ml  
disposable plastic funnel  
(4870 / 4871)



SUS316 Adaptor for Pall  
disposable plastic funnel  
(190100-75)



Silicone Tube  
Ø4.2-8 mm, 200cm  
(199100-68)



SUS316 Adaptor for  
Hose barb (Ø4-8mm)  
(190100-76)

# Waste Bottle Accessories



1200 ml PES Waste Bottle (197000-11)

Specification		Material	
Hose barb	5/16 in. (8 mm)	Container	PES
Graduated increment	100 ml	Cover	PES
Overflow protection	Yes	Overflow protection	PP
Cap with suction fitting	Yes		
Autoclavable	Yes		



1200 ml PC Waste Bottle (197000-11-PC)

Specification		Material	
Hose barb	5/16 in. (8 mm)	Container	PC
Graduated increment	100 ml	Cover	PC
Overflow protection	Yes	Overflow protection	PP
Cap with suction fitting	Yes		
Autoclavable	Yes		



1000 ml Receiver Flask with Drain & Silicone Fixing Sucker (167100-15)

Specification		Material	
Hose barb	5/16 in. (8 mm)	Container	Borosilicate glass
Graduated increment	100 ml	Connector	PP
Drain	Yes		
Stopper	No.16 (option)		
Silicone fixing sucker	Yes		



4000 ml PP Waste Bottle (167200-47)

Specification		Material	
Hose barb	1/4 in. (6.5 mm)	Container	PP
Graduated increment	500 ml	Cover	PP
Overflow protection	Yes	Overflow protection	PP
Autoclavable	Yes		



4000 ml PP Waste Bottle with Drain (167200-48)

Specification		Material	
Hose barb	1/4 in. (6.5 mm)	Container	PP
Graduated increment	500 ml	Cover	PP
Overflow protection	Yes	Overflow protection	PP
Drain	Yes	Tube	Rubber
Autoclavable	Yes		

\* PES : Polyethersulfone, PC : Polycarbonate, PP : Polypropylene

# Waste Bottle Accessories



## HDPE Waste Bottle

Specification	2000ml waste bottle	4000ml waste bottle
Catalog number	167200-51	167200-46
Hose barb	1/4 in. (6.5 mm)	1/4 in. (6.5 mm)
Graduated increment	500 ml	500 ml
Overflow protection	No	Yes
Material of cover	PP	PP



## PP Funnel Lid

Specification	For LF3 /3a	For LF 5/5a, MF 3/3a/5/5a
Catalog number	197000-36	200300-36
Syringe filter	Ø25 mm, 0.2 µm	Ø25 mm, 0.2 µm
Material of body	PP	PP
Material of cap	Silicone	Silicone
Material of Syringe filter	PTFE	PTFE



## Syringe Filters

Specification	Syringe filter	Small disc filter	Large disc filter
Catalog number	194225-01	167200-35	167200-36
Brand	Pall	Pall	Pall
Filter diameter/ pore size	25 mm / 0.2 µm	35 mm / 0.2 µm	50 mm / 0.2 µm
Shell diameter	30 mm	45 mm	72 mm
Material of filter	PTFE	PTFE	PTFE
Material of shell	PP	PP	PP



## Membrane Filters

Specification	Glass fiber filter	MCE membrane
Catalog number	167100-20	167100-52
Brand	Pall	Pall
Filter diameter	47 mm	47 mm
Pore size	1 µm	0.45 µm
Material of filter	Glass fiber	MCE
Package	100/PK	200/PK



## Silicone Fixing Sucker (167200-45)

Specification		Material	
Suitable flask size	1000 ml	Fixing sucker	Silicone

\* PES : Polyethersulfone, PC : Polycarbonate, PP : Polypropylene

# LIFE SCIENCES

BioSuction

BioDolphin

Lafil 100

BioVac 225 Plus / 240 Plus

Lafil 400 Plus

Lafil 400 - 5a - 500

Lafil 400 - LF 30

Accessory

ELISA Washer

BioWasher 200 / 100

Micro Plate Vacuum Manifold

WelVac 200/210

Lab Burner

Dragon 100/200/220

Dragon 300/320

Dry Bath

Sahara 310/320

Colony Counter

Galaxy 330

# BioDolphin Suction Kit

## Features

### ❖ User-friendly lock switch design

BioDolphin's ergonomic handle and friendly designed lock switch can keep continuous suction without pressing button all the time.

### ❖ Single-handed tip ejection

The innovative tip ejection design enables tip ejection by single hand easily.

### ❖ Quick fitting change

Quick connection coupling between fitting and handle can make any fittings replaced quickly.

### ❖ Multi-functional storage rack

Exclusive designed rack can accommodate all the fittings in order. A built-in liquid collection tray can receive liquid residue dripping from the fittings.

### ❖ Autoclavable

The complete kit except rack are made of POM and stainless steel material available for autoclave.

## Applications

- ❖ Cell culture aspiration
- ❖ Laboratory waste suction

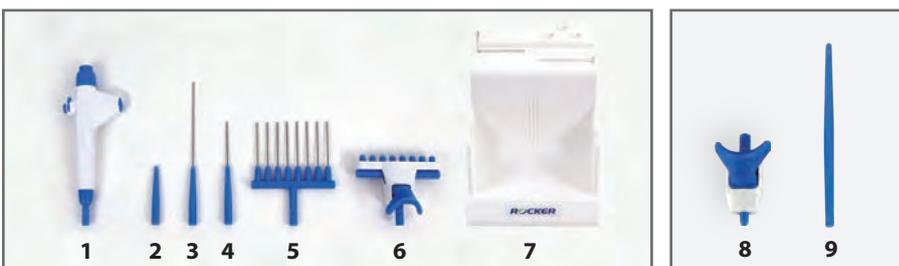
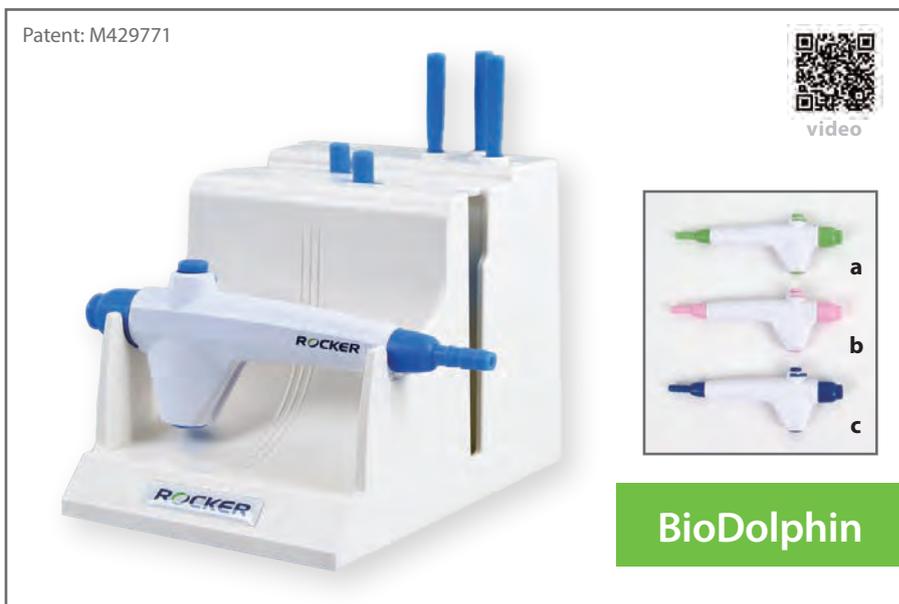
## Ordering Information

**199100-00** BioDolphin-LB (Light Blue)  
Complete kit includes handle, rack and 5 kinds of adaptors (No.2-6).

**199110-00** BioDolphin-DB (Deep Blue)

**199120-00** BioDolphin-P (Pink)

**199130-00** BioDolphin-G (Green)



**BioDolphin**

### Standard accessory :

1. **199100-30** Handle
2. **199100-46** 1-channel tip adaptor (50mm)
3. **199100-48** 1-channel S.S adaptor (80mm)
4. **199100-47** 1-channel S.S adaptor (40mm)
5. **199100-49** 8-channel S.S adaptor (40mm)
6. **199100-50** 8-channel tip adaptor with ejector
7. **199100-61** Rack

### Optional accessory :

8. **199100-75** 1-channel tip adaptor with ejector
9. **199100-76** 1-channel tip adaptor (150mm)

BioDolphin Suction kit is available for optional colors below:

- a. Green
- b. Pink
- c. Deep Blue

## Specification

Model	BioDolphin
Operation	Press to suck
Hose barb	3/16 inch (5 mm)
Dimension (LxWxH)	15.0 x 15.2 x 14.5 cm
Part	Material
Handle	POM
1-channel tip adaptor (50, 150mm)	POM
1, 8-channel tip adaptor with ejector	POM
1, 8-channel S.S adaptor	POM and SUS 304
Rack	ABS

# Portable Suction System



video

## Features

### ❖ A dual-function system for suction and filtration

The innovative dual-function design allows to suck washing solution from microplates, supernatants after centrifugation and to purify media from cell culture by disposable or reusable funnels in just one system.

### ❖ Ideal for operation in laminar flow

Lafil 100's compact size and built-in vacuum pump allow for work in laminar flow.

### ❖ Autoclavable

All supplied fittings are made of POM material available for autoclave.

### ❖ Safety compliance

CE certification



Lafil 100

## Applications

- ❖ Cell culture aspiration
- ❖ Laboratory waste suction

## Ordering Information

### 197100-01

Lafil 100, Portable Suction System with AC100-240V adaptor, US plug

### 197100-02

Lafil 100, Portable Suction System with AC100-240V adaptor, EU plug

### 197000-02

LF 3a, 300ml PES Filter Holder with lid kit

### 197000-07

LF 5a, 500ml PES Filter Holder with lid kit

### ROU-1152-RLS

Autofil, 500ml Disposable Funnel  
0.22µm, Ø90mm, PES membrane, 24/PK

### ROU-1402-RLS

Autofil 50ml, Disposable Centrifuge Funnel  
0.22µm, Ø40mm, PES membrane, 24/PK

Lafil 100 + ROU-1402-RLS



Lafil 100 with Autofil 50ml disposable centrifuge funnel

Lafil 100 + ROU-1152-RLS



Lafil 100 with Autofil 500ml disposable funnel

Lafil 100 + LF 3a



Lafil 100 with LF 3a, 300ml PES filter holder with lid kit

Lafil 100 + LF 5a



Lafil 100 with LF 5a, 500ml PES filter holder with lid kit

# A Dual-Function System for Suction and Filtration



## GL45 Suction Cap

Specification	Suction cap	Cap with storage bottle	Cap with storage bottle
Catalog number	197000-60	197000-60-500	197000-60-1000
Capacity	-	500 ml	1000 ml
Hose barb	3/16 in. (5 mm)	3/16 in. (5 mm)	3/16 in. (5 mm)
Material	PP (Autoclavable)	-	-



## Anti-UV Cloth Cover

Used to protect main unit from UV light in laminar flow

### Specification

Catalog number	197100-48
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## Membrane Filters

Specification	PES Membrane	PES Membrane
Catalog number	201PAL60301	201PAL60173
Brand	Pall	Pall
Filter diameter	47mm	47mm
Pore size	0.22 µm	0.45 µm
Material of filter	PES	PES
Package	100/PK	100/PK

## Specification

Model	LafI 100	Model	ROU-1402-RLS / ROU-1152-RLS
Max. vacuum	500 mmHg	Capacity	50ml / 500ml
Max. flow rate	1.0 L/min	Part	Material
Motor	DC brushless motor	Funnel	PE
Transformer	DC 12V / AC 100 - 240V	Lid	PE
Net weight	1.3 kg	membrane	PES
Dimension (LxWxH)	26.5 x 13 x 21 cm	Model	LF 3a/5a
Part	Material	Capacity	300ml / 500ml
Case	ABS	Part	Material
Handle	POM	Funnel	PES
1/8-channel tip adaptor with ejector	POM	Lid	PP
GL45 suction cap	PP	Membrane support	PP

# Portable Suction System

## Features

- ❖ **Adopts oil-free vacuum pump**  
No lubricant required, maintenance free, low noise and durable.
- ❖ **Dual overflow protection**  
Both built-in overflow protection and 0.2 um PTFE hydrophobic disc filter between suction bottle and pump can fully prevent medium from flowing into the pump.
- ❖ **Autoclavable**  
Waste bottle and all supplied fitting parts are autoclavable.
- ❖ **Safety compliance**  
CE certification

## Applications

- ❖ Cell culture aspiration
- ❖ Laboratory waste suction

## Ordering Information

### 167227-11(22)

BioVac 225 Plus, Portable Suction System  
AC110V, 60Hz (AC220V, 50Hz)

### 167225-11(22)

BioVac 225, Portable Suction System  
AC110V, 60Hz (AC220V, 50Hz)

### 167241-11(22)

BioVac 240 Plus, Portable Suction System  
AC110V, 60Hz (AC220V, 50Hz)

### 167240-11(22)

BioVac 240, Portable Suction System  
AC110V, 60Hz (AC220V, 50Hz)

### 199100-30

Handle

### 199100-75

1-channel tip adaptor with ejector

### 199100-50

8-channel tip adaptor with ejector

### 199100-76

1-channel tip adaptor (150mm)



**BioVac 225 Plus**



**BioVac 240 Plus**

## Specification

Model	BioVac 225 Plus		BioVac 240 Plus	
Voltage	110V/60Hz	220V/50Hz	110V/60Hz	220V/50Hz
Max. vacuum	- 650 mmHg	- 650 mmHg	- 720 mmHg	- 720 mmHg
Max. flow rate	25 l/min	23 l/min	40 l/min	38 l/min
Hose barb	3/16 inch (5 mm)			
Thermal protector	Yes	Yes	Yes	Yes
Pump type	Diaphragm	Diaphragm	Piston	Piston
Dimension (LxWxH)	37 x 15 x 25 cm		53 x 24 x 35 cm	
Part	Material		Material	
Suction bottle	PC (1000ml)		PC (3000ml)	
Handle	POM		POM	
1-channel / 8-channel tip adaptor with ejector	POM		POM	
1-channel tip adaptor (150 mm)	POM		POM	

# Portable Suction System

Two-Year Warranty

## Features

- ❖ **Oil-free vacuum pump**  
No lubricant required, maintenance free, low noise and durable.
- ❖ **Dual overflow protection**  
Both built-in overflow protection and 0.2 um PTFE hydrophobic disc filter between suction bottle and pump can fully prevent medium from flowing into the pump. (Lafil 400-LF30 is supplied with overflow protection and without disc filter)
- ❖ **Autoclavable**  
Waste bottle and all supplied fitting parts are autoclavable.
- ❖ **Safety compliance**  
CE certification

## Applications

- ❖ Cell culture aspiration
- ❖ Laboratory waste suction

## Ordering Information

**197405-11(22)**

Lafil 400 Plus, Portable Suction System  
AC110V, 60Hz (AC220V, 50Hz)

**197401-11(22)**

Lafil 400 - LF 30, Vacuum Filtration System  
AC110V, 60Hz (AC220V, 50Hz)

**197404-11(22)**

Lafil 400 - LF 5a - 500, Vacuum Filtration System,  
AC110V, 60Hz (AC220V, 50Hz)

**199100-30**

Handle

**199100-75**

1-channel tip adaptor with ejector

**199100-50**

8-channel tip adaptor with ejector

**199100-76**

1-channel tip adaptor (150mm)



Lafil 400 Plus



Multi-use of Lafil 400



Multi-use of Lafil 400

## Specification

Model	Lafil 400 Plus	
Voltage	110V/60Hz	220V/50Hz
Max. vacuum	- 720 mmHg	- 720 mmHg
Max. flow rate	25 l/min	22 l/min
Hose barb	3/16 inch (5 mm)	3/16 inch (5 mm)
Thermal protector	Yes	Yes
Pump type	Piston	Piston
Dimension (LxWxH)	33.5 x 23 x 29.5 cm / 33.5 x 23 x 43 cm / 33.5 x 23 x 45 cm	
Part	Material	
Suction bottle	PES (1200ml)	
1-channel / 8-channel tip adaptor with ejector	POM	
1-channel tip adaptor (150 mm)	POM	

# Disposable Funnel



## Disposable Filtration Set

Specification	250ml filtration set	500ml filtration set	1000ml filtration set
Catalog number	ROU-1101-RLS	ROU-1102-RLS	ROU-1103-RLS
Filter diameter	66 mm	90 mm	90 mm
Pore size	0.22 µm	0.22 µm	0.22 µm
Material of filter	PES	PES	PES
Material of shell	PE	PE	PE



## Disposable Funnel

Specification	250ml funnel	500ml funnel	1000ml funnel
Catalog number	ROU-1151-RLS	ROU-1152-RLS	ROU-1153-RLS
Filter diameter	66 mm	90 mm	90 mm
Pore size	0.22 µm	0.22 µm	0.22 µm
Material of filter	PES	PES	PES
Material of shell	PE	PE	PE



## Disposable Centrifuge Funnel

Specification	15ml centrifuge funnel	50ml centrifuge funnel
Catalog number	ROU-1411-RLS	ROU-1402-RLS
Filter diameter	40 mm	40 mm
Pore size	0.22 µm	0.22 µm
Material of filter	PES	PES
Material of shell	PE	PE



## Funnel Rack

Specification	Cradle ring	Pedestal stand
Catalog number	ROU-1122-RLS	ROU-1116-RLS



Size (ml)	15	50	250	500	1000	250	500	1000
0.2 µm PES	V	V	V	V	V	V	V	V
0.45 µm PES	V	V	V	V	V	V	V	V

# Waste Bottle



## PC Waste Bottle

Specification	1000ml waste bottle	3000ml waste bottle
Catalog number	167200-31	167200-33
Graduated increment	100 ml	100 ml
Overflow protection	Yes	Yes
Hose barb	5/16 in. (8 mm)	5/16 in. (8 mm)
Autoclavable	Yes	



## PC Waste Bottle with Grip

Specification	3000ml waste bottle
Catalog number	167240-33
Graduated increment	200 ml
Overflow protection	Yes
Hose barb	5/16 in. (8 mm)
Autoclavable	Yes



## PES Waste Bottle

Specification		Material	
Catalog number	197000-12	Container	PES
Capacity	1200 ml	Cover	PES
Graduated increment	100 ml	Overflow protection	PP
Overflow protection	Yes		
Hose barb	5/16 in. (8 mm)		
Autoclavable	Yes		



## PP Waste Bottle

Specification	2000ml waste bottle	4000ml waste bottle
Catalog number	165-2102-OEM	167200-47
Graduated increment	500 ml	500 ml
Overflow protection	No	Yes
Hose barb	1/4 in. (6.5 mm)	1/4 in. (6.5 mm)
Autoclavable	Yes	Yes



## PP Waste Bottle with drain

Specification		Material	
Catalog number	167200-48	Container	PP
Capacity	4000 ml	Cover	PP
Graduated increment	500 ml	Overflow protection	PP
Overflow protection	Yes	Tube	Rubber
Drain	Yes		
Hose barb	1/4 in. (6.5 mm)		
Autoclavable	Yes		

\* PES : Polyethersulfone, PC : Polycarbonate, PP : Polypropylene

# Semi-Automatic Microplate Washer (ELISA Washer)

## Features

### ➤ Economical

BioWasher 200 is very ideal for washing immunoassays in 8-well and 96-well microplate for ELISA procedure; economic price is especially suitable for laboratories with limited budget.

### ➤ Convenient operation

Unique ergonomic platform can accommodate 8-channel dispenser and accept flexible placement of 96-well microplate in flat or upward-sloping way that can reduce residues more efficient.

### ➤ No cross contamination

There are 2 separate rows of tiny S.S. tubes in different length on 8-channel dispenser. The shorter row is used to distribute washing solution and the longer row is used to suck waste liquid. The 2-row design can avoid cross contamination.

### ➤ Autoclavable

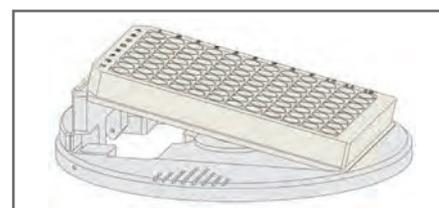
The main body of 8-channel dispenser is made of PTFE and its tubes are made of SUS 304. Both have a long working life and are autoclavable.



BioWasher 200



Flat 96-well microplate



Upward-sloping 96-well microplate

## Applications

- ELISA washing procedure
- 96-well microplate washing and dispensing

## Ordering Information

### 196200-11(22)

BioWasher 200, Semi-Automatic Microplate Washer

AC110V, 60Hz (AC220V, 50Hz)

**196811-00** 8-channel Dispenser

**196100-06** Buffer Bottle (2L)

**196100-04** Waste Bottle (2L)

## Specification

Model	BioWasher 200
Max. flow	500 ml/min, adjustable
Buffer bottle capacity	2 liter
Waste bottle capacity	2 liter
8-channel dispenser dim. (LxWxH)	13.7 x 6.7 x 3.3 cm
8-channel dispenser material	PTFE
Dispensing tube material	SUS304
Machine dim. (LxWxH)	20.4 x 24.2 x 13.5 cm
New weight	4.1 kg

# Gravity-fed Microplate Washer

## Features

### ❖ Economical

BioWasher 100 is a manual dispenser by utilizing the force of gravity, ideal for washing immunoassays in 96-well microplate for ELISA procedure or similar applications.

### ❖ Convenient operation

Unique designed plate base can accept flexible placement of 96-well microplate in flat or upward-sloping way that can reduce residues more efficient.

### ❖ No cross contamination

There are 2 separate rows of tiny S.S. tubes in different length on 8-channel dispenser. The shorter row is used to distribute washing solution and the longer row is used to suck waste liquid. The 2-row design can avoid cross contamination.

### ❖ Autoclavable

The main body of 8-channel dispenser is made of PTFE and its 2-row of tubes are made of SUS 304. Both have a long working life and are autoclavable.

## Applications

- ❖ ELISA washing procedure
- ❖ 96-well microplate washing and dispensing

## Ordering Information

### 196100-01

BioWasher 100 gravity-fed microplate washer, complete set includes 8-channel dispenser and plate base

### 196811-00 8-channel Dispenser

### 199100-68

Silicone Tubing(  $\Phi$ 4.2x $\Phi$ 8 mm), 200cm

### 196100-04 Waste Bottle (2L)

### 196100-02 Microplate base



BioWasher 100



### Installation diagram

To feed the 8-channel dispenser enough gravity to dispense, buffer bottle must be placed 60 cm above plate base.

\* Waste Bottle (2L) and Buffer Bottle (4L) are optional

## Specification

Model	BioWasher 100
Min. height	Buffer bottle must be placed 60 cm above plate base.
8-channel dispenser dim. (mm)	137(L) x 67(W) x 33(H)
8-channel dispenser material	PTFE
Hose barb	3/16 inch (5 mm)
Plate base dim. (mm)	197(L) x 148(W) x 433(H)
Plate base material	Acrylic
Dispensing tube material	SUS304

# Microplate Vacuum Manifold

## Features

### ➤ Simplifying operation

WelVac 200 is designed to replace traditional centrifuges with vacuum source to simplify purification process of plasmid DNA, single-stranded phage DNA, RNA, genomic DNA, viral nucleic acids after PCR.

### ➤ Time-saving

By connecting manifold to vacuum source, the system can give a rapid continuous separation without dispensing solution, running and stopping centrifuge.

### ➤ Multi-use of one machine

Unique designed column adapter board and luer connector make WelVac 200 highly compatible with various kinds of centrifuge tube and 96-well microplate.



WelVac 200



96-well microplate



micro centrifuge tubes (24 holes)



large-volume centrifuge tubes (8 holes)

## Applications

- DNA Purification
- RNA Purification
- Gel Purification
- PCR Clean Up

## Ordering Information

### 195200-00

WelVac 200, Microplate Vacuum Manifold, complete set includes the following 4 fitting parts:

### 195200-42

Spin Column Adapter Board (24 hole)

### 195200-43 Luer Connector (25/pk)

### 195200-44 Luer Stopper (25/pk)

### 195200-45 Waste Tray

## Specification

Model	WelVac 200
Vacuum manifold material	Anodized aluminum
Gasket material	Rubber
O-ring material	Rubber
Column adapter board material	PC (polycarbonate)
Luer connector material	Silicone rubber
Luer stopper material	Silicone rubber
Hose barb	5/16 inch (8 mm)
Manifold internal dim. (LxWxH)	12.8 x 8.6 x 7.3 cm
Manifold external dim. (LxWxH)	23.2 x 12.4 x 10.2 cm
Net weight	2.6 kg

# Microplate Vacuum Manifold System

Two-Year Warranty

## Features

### ➤ One system meeting full needs

By coupling with a vacuum pump, WelVac 210 can be a complete set of vacuum purification system including Rocker 300 oil-free vacuum pump, silicone tube, waste tray, disc filter (prevent waste liquid from overflowing into pump). The optional PES waste bottle can be as a good alternative to collect high volume of waste when used with large-volume centrifuge tubes.

### ➤ Quiet and no air pollution

WelVac 210 adopts Rocker 300 oil-free vacuum pump with low noise, adjustable vacuum and no air pollution.

## Applications

- DNA Purification
- RNA Purification
- Gel Purification
- PCR Clean Up

## Ordering Information

### 195210-11(22)

WelVac 210, Microplate Vacuum Manifold System, AC110V, 60Hz (AC220V, 50Hz), complete set includes :

- \* Rocker 300, Vacuum Pump
- \* WelVac 200, Microplate Vacuum Manifold
- \* Disc Filter
- \* Silicone Tube (30cm)

### 197000-12

1200ml Waste Bottle (optional)



WelVac 210



For large samples

## Specification

Model	WelVac 210
Max. vacuum	- 680 mmHg (adjustable)
Max. flow	23 l/min
Noise level	50 dB
Waste bottle	1200 ml (with overflow protection device)
Waste bottle material	PES
Hose barb	5/16 inch (8 mm)
Disc filter material	PTFE
Disc filter specification	Ø35mm, 0.2 µm

# Lab Burner

## Features

- Piezo ignition
- Max. temperature: 1300°C
- Adjustable flame
- Refillable butane tank

## Applications

- Sterilizing
- Welding
- Heating
- Cooking

## Ordering Information

### 177100-00

Dragon 100, Torch Burner

### 177200-00

Dragon 200, Lab Burner

### 177220-00

Dragon 220, Lab Burner



## Specification

Model	Dragon 100	Dragon 200	Dragon 220
Max. temperature	1300°C	1300°C	1300°C
Fuel tank capacity	40 g	35 g	35 g
Working time (min)	60 min	60 min	60 min
Safe switch	Yes	Yes	Yes
Dimension (HxWxD)	16.1 x 13.7 x 7.9 cm	9.2 x 11.5 x 7.9 cm	9.4 x 11.5 x 7.8 cm
Net weight	380 g	407 g	425 g

# Electric Sterilizer

## Features

### ➤ No fuel combustion

Dragon 300/320 is used to rapidly sterilize loop, needle and culture tube by electric heating inside the chamber. No spattering of microorganisms and cross contamination through an open flame generated from fuel combustion.

### ➤ Adjustable temperature

Equipped with a powerful heating element enabling Dragon 300/320 to reach up to 850°C fast and the temperature is adjustable.

### ➤ Wide mouth design

Dragon 320's wide mouth design suits the sterilized objects in diameter up to 37mm.

### ➤ Humanized design and convenient operation

Dragon 300/320's heavier base, friendly loop rack and adjustable angle of heating chamber up or down from 45 to 75 degree make them the best mates with laminar flow hood and anaerobic chamber.



Dragon 300



Dragon 320

## Applications

- Culture tube sterilization
- Inoculating loops and needles sterilization

## Ordering Information

### 177300-11(22)

Dragon 300, Electric Sterilizer  
AC110V, 60Hz (AC220V, 50Hz)

### 177320-11(22)

Dragon 320, Electric Sterilizer  
AC110V, 60Hz (AC220V, 50Hz)

## Specification

Model	Dragon 300	Dragon 320
Temp. range	R.T. + 20~850°C	R.T. + 20~850°C
Power	180 watt	180 watt
Chamber diameter	16 mm	37 mm
Dimension (HxWxD)	21 x 9 x 17 cm	21.5 x 9 x 19 cm
Net weight	1128 g	1098 g

# Dry Bath

## Features

### ➤ Microprocessor control

The built-in unique microprocessor can provide precise temperature control for a variety of biochemical experiments.

### ➤ Heating chamber in one piece

Sahara 310/320's heating chamber is made of one-piece aluminum with PTFE coating and can work as a small water bath.

### ➤ Various optional heating blocks

Various types of heating block are available for option, mass customization is acceptable.

### ➤ Safety compliance

CE certification

## Applications

- Molecular biology
- Biochemistry

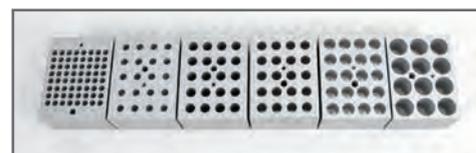
## Ordering Information

### 179310-11(22)

Sahara 310, Dry Bath (without block)  
AC110V, 60Hz (AC220V, 50Hz)

### 179320-11(22)

Sahara 320, Dry Bath (without block)  
AC110V, 60Hz (AC220V, 50Hz)



### The optional blocks

- 179300-01 block module, 6.4 mm diameter, 0.2 ml, 64 well (depth: 17mm)
- 179300-02 block module, 8.2 mm diameter, 0.5 ml, 20 well (depth: 25mm)
- 179300-03 block module, 10.2 mm diameter, 1.5 ml (or 2.0ml), 20 well (depth: 33mm)
- 179300-05 block module, 13 mm diameter, 20 well (depth: 36mm)
- 179300-06 block module, 20 mm diameter, 12 well (depth: 45mm)
- 179300-07 block module, 25 mm diameter, 6 well (depth: 45mm)
- 179300-08 combination block module, 0.5 ml x12 well and 1.5 ml x 12 well
- 179300-09 combination block module, one side for 0.5 ml x 30 well and another side 1.5ml (or 2.0 ml) x 20 well
- 179300-10 block module, 17 mm diameter, for 15 ml centrifuge tube, 12 well (depth: 45mm)

### Specification

Model	Sahara 310	Sahara 320
Capacity	1 block	2 blocks
Temp. range	Ambient + 5 - 150°C	Ambient + 5 - 150°C
Resolution	0.1°C	0.1°C
Accuracy	±0.2°C	±0.2°C
Timer	0~9999 min	0~9999 min
Display	4 1/2" digital LED	4 1/2" digital LED
Machine dim. (mm)	270mm(L)x200mm(W)x80mm(H)	
Block dim. (mm)	104mm(L)x79mm(W)x50mm(H)	
N.W. w/o. block	2.6Kg	2.8Kg
Safety	Cut off at 170°C	Cut off at 170°C

# Colony Counter

Two-Year Warranty

## Features

- ❖ **4 panel displays**

4 panel display offers convenience of showing the present and previous three count values.
- ❖ **Multi-counting average**

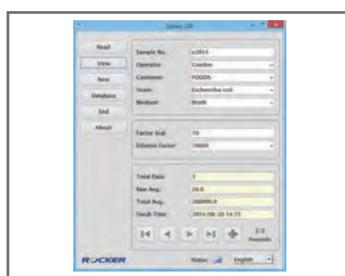
Galaxy 330 can make average count from multiple counting.
- ❖ **Exclusive BACK button**

The BACK button offers the convenience of deducting data when over counting.
- ❖ **Suitable for Petri-dishes in various diameters**

Galaxy 330's adjustable dish holder can accept most Petri-dishes in a wide range of diameters from 90 to 150 mm or 60 mm.
- ❖ **Pressure sensor design**

Pressure sensor design can allow user to operate with any marking pens. No worry about sample spoiled or contaminated.
- ❖ **Safety compliance**

CE certification



### Galaxy 330, PC Software (optional)

In addition to recording and tracing data, the newest PC software can help user add, delete, search, print out and save data as Excel format (csv file).

## Applications

- ❖ Total bacteria counting
- ❖ Total coliform counting

## Ordering Information

### 175330-01

Galaxy 330, Colony Counter with AC100-240V adaptor, US plug

### 175330-02

Galaxy 330, Colony Counter with AC100-240V adaptor, EU plug

### 175331-01

Galaxy 330, Colony Counter with software, AC100-240V adaptor, US plug

### 175331-02

Galaxy 330, Colony Counter with software, AC100-240V adaptor, EU plug

### 175330-12

Software Package for Galaxy330 ( Include a 8G USB flash drive and connecting cable )

## Specification

Model	Galaxy 330
Display	3-digit (0-999) LED display, 4 panels
Magnification	2~3 X
Petri dish diameter	60 mm, 90-150 mm, adjustable
Memory	100
Average	Yes
Zero reset	Yes
Count back	Yes
Illumination	LED (adjustable)
Pressure sensitivity	Adjustable
Acoustical counting signal	Adjustable
Output	USB
Dimension (LxWxH)	35.1 x 30.2 x 37 cm
Net weight	5.6 kg

# WATER TEST

Suspended Solid Test  
Rocker 300 - LF 30 - SS  
COD Reactor / Detector  
CR 25  
CD 200  
Portable pH/Cond./Res. Meter  
EC-200/210/220/230  
Accessory

# Filtration System for Suspended Solid Test

Two-Year Warranty

## Features

➤ **No air pollution, maintenance free**

Rocker 300 - LF 30 - SS utilizes piston pump requiring no lubricant and regular maintenance.

➤ **The patented spin-lock design**

The filter holder can be connected with waste bottle by patented spin-lock connection giving a fast and stable installation without clamp.

➤ **Overflow protection**

The waste bottle has a built-in overflow protection which keeps the filtrate from overflowing into the pump when waste bottle is full.

➤ **Ideal package**

The complete set of Rocker 300 - LF 30 - SS offers a total solution for suspended solid test.



Rocker 300 - LF 30 - SS

## Applications

- Suspended Solid Test

## Ordering Information

**167307-11(22)**

Rocker 300 - LF 30 - SS, Vacuum

Filtration System includes,

\* Rocker 300, Vacuum Pump

\* LF 30, Filtration Set

\* Glass Fiber Filter, 47mm, 1 μm , 100/PK

\* Silicone Tube (1m)

## Specification

Model	Rocker 300 - LF 30 - SS	
Voltage	110V/60Hz	220V/50Hz
Max. flow rate	22 l/min	20 l/min
Max. vacuum	- 680 mmHg	
Capacity	Funnel : 300 ml, Waste bottle : 1200 ml	
Filter diameter	47 mm / 50 mm	
Effective filtration area	12.5 cm <sup>2</sup>	
Hose barb	5/16 inch (8 mm)	
Part	Material	
Filter funnel	PES	
Waste bottle	PC	
Funnel support base	PP	
Funnel lid	PP	
Overflow protection	PP	
Filter	Glass Fiber Discs, 47mm, 1 μm , 100/PK	

# COD Reactor

## Features

### ➤ Compliance with regulations

CR25 COD reactor is used to digest closed micro reflux COD vial and can meet USEPA 410. 4. It is easier and safer than traditional open macro reflux method.

### ➤ Special COD program

Just press start/stop button, the reactor starts to heat up to 150°C and keep for 2-hour countdown then shut down automatically with 10-sec audio alarm.

### ➤ 3 additional program settings

Temperature range setting from 60°C - 200°C and timer from 1 - 999. Built-in 3 additional heating program settings available for users to store and execute as needed.

### ➤ Auto shut off and audio alarm

CR25 can stop heating then shut off automatically with audio alarm when every program is completed.

## Applications

- Waste water test from factories
- Water quality test in lake, pond and river

## Ordering Information

### 179200-11(22)

CR 25, COD Reactor

AC110V, 60Hz (AC220V, 50Hz)

### 179100-45

Combination Aluminum Block for  
8 x 20 mm + 6 x 25 mm vial



CR 25



### Combination block (Optional)

Aluminum block for 8 x 20 mm + 6 x 25 mm vial

## Specification

Model	CR 25
Read out	4 digital LED of set temperature, set time, process temperature, residual time display.
Timer	1~999 minutes with audible alarm and automatic shutoff or continuous operation.
Accuracy	±2°C (at 150°C)
Temperature rang	Fixed 150°C (COD program) 60°C~200°C, adjustable.
Housing structure	Stainless steel with powder paint coating
Block structure	Anodized aluminum
Power	AC110V, 60Hz (AC220V, 50Hz), 220Watt
Safety	Hot top indicator (flashing when block temperature is over 70°C) Automatic shutoff when block temperature is over 210°C
Block capacity	25 x 16 mm sample vials, Optional block (8 x 20 mm + 6 x 25 mm vial) is available.

# COD Detector

## Features

### ➤ Ideal for major brands of reagents

CD 200 detector is equipped with multi-curve in single one unit offering not only built-in standard curve for Hach, Lovibond, Chemetrics reagents but also a simple method to set up standard curves for other brands of reagents.

### ➤ Wide measure range

CD 200 can measure COD value within 3 ranges of 10-150, 100-1500 and 1000-15000 mg/l.

### ➤ Fast detection

CD 200 can detect and save COD value in 3 seconds.

### ➤ Data storage up to 100 records

The built-in memory can store up to 100 records for convenient access.



## Applications

- Waste water test from factories
- Water quality test in lake, pond and river

## Ordering Information

### 198200-01

CD200, COD Detector with US plug adaptor (100-240V)

### 198200-02

CD200, COD Detector with EU plug adaptor (100-240V)

## Specification

Model	CD 200
Brands of reagents	Hach, Lovibond, Chemetrics and 6 user-defined reagent curves
Measure range	10 - 150 mg/l , 100 - 1500 mg/l , 1000 - 15000 mg/l
Display	LCD with backlight
Light source	LED
Working Wavelength	420 nm , 610 nm
Wavelength choosing	automatic
Detecting time	3s
Optical stability	≤ 0.005 Abs / 30min
Storage	100
Data information	Concentration, sample number, time
Power Supply	DC 9V battery or power adapter
Dimension (LxWxH)	23.0 x 12.5 x 8.5 cm

# Portable Water Testing Meter



## Features

- Slope display after calibration (EC-210)
- Large LCD display for dual parameters
- Splash-proof housing, IP65
- Low battery indication (except EC-200)
- Automatic or manual temperature compensation

## Applications

- Household water
- Industrial water
- Aquaculture water
- Swimming pool

## Ordering Information

### 168200-01

EC-200 pH meter

### 168210-01

EC-210 pH meter

### 171220-01

EC-220 Cond. meter

### 171230-01

EC-230 Resis. meter

## Specification

Model	EC-200	EC-210	EC-220	EC-230
Parameter	PH/ORP	PH/ORP	Conductivity	Resistivity
Range				
PH	0.00~14.00	0.00~14.00	—	—
ORP (mV)	-1999~1999	-1999~1999	—	—
Conductivity	—	—	0~20.00,200.0 μs/cm	—
	—	—	0~2.000,20.00 ms/cm	—
	—	—	Auto Range	—
Resistivity(MΩ)	—	—	—	1.00~18.2 MΩ
Temperature	—	0.00~99.9°C	0.00~99.9°C	0.00~99.9°C
Accuracy				
PH	0.01±1digit	0.01±1digit	—	—
ORP (mV)	1±1digit	1±1digit	—	—
Conductivity	—	—	±1% full scale	—
Resistivity(MΩ)	—	—	—	±1% full scale
Temperature	—	±0.5°C	±0.5°C	±0.5°C
Temp. compensation	Manual	Auto	Auto	Auto
Calibration point	2	2	1	—
Power	DC9V	DC9V	DC9V	DC9V

\* Each unit includes an electrode, standard solution 30ml (Except EC-230), carry case is optional.

# Accessories

## Features

- High Accuracy:  $\pm 0.01$ pH
- COA certificate is supplied with each bottle.

## Ordering Information

### 168700-50

pH Buffer 7.00  $\pm 0.01$  , 500ml

### 168400-50

pH Buffer 4.01  $\pm 0.01$  , 500ml

### 168100-50

pH Buffer 10.01  $\pm 0.01$  , 500ml

### 168103-50

3M KCL Buffer , 500ml



## Specification

pH Electrodes							
Cat. No.	Type	Application	Connector	Internal element	Junction	Size	Cable
168210-13	Glass	General Purpose	BNC	Ag/AgCl	Ceramic	$\phi$ 12x155 mm	1m
168210-16	ATC probe						

pH Buffer	
Cat. No.	Description
168700-50	pH 7.00 $\pm 0.01$ , 500ml
168400-50	pH 4.01 $\pm 0.01$ , 500ml
168100-50	pH 10.01 $\pm 0.01$ , 500ml

KCL Buffer	
Cat. No.	Description
168103-50	3M KCL , 500ml

Conductivity Buffer	
Cat. No.	Description
HAN-HI703IL	1413 $\mu$ s/cm, 500ml

Resistivity Electrode	
Cat. No.	Description
171230-30	Resistivity Electrode, 1 meter . (For EC-230)

Conductivity Electrode	
Cat. No.	Description
171220-30	Conductivity Electrode, K=1.0, 1 meter (For EC-220)

Carry case	
Cat. No.	Description
168106-01	Carry case

# ULTRASONIC CLEANER

Ultrasonic Cleaner

Soner 203 / 203H

Soner 206 / 206H

Soner 210 / 210H

Soner 220 / 220H

Accessories

Bracket

Basket

# Ultrasonic Cleaner

## Features

- **Degas**

Soner's family are standard with degas function to keep powerful cavitation effect.
- **Industrial transducer**

The Soner's benchtop cleaners adopt high power, rugged industrial transducer, durable and superior.
- **Higher Frequency**

Soner series feature 53 KHz frequency to get more precise cleaning of parts that contaminated in small and hard-to-reach crevices.
- **Stainless Steel construction**

Both tank and housing are constructed of SUS304, durable and easy to clean.



Soner203



Soner203H



Soner206



Soner206H

## Applications

- Solvent degas
- Cleaning for cuvette and test tube
- Cleaning for optical lenses and scientific Instruments
- Cleaning for various parts and PCB

## Ordering Information

**188203-11(22)**

Soner 203 Ultrasonic Cleaner  
AC110V, 60Hz (AC220V, 50Hz)

**188204-11(22)**

Soner 203H Ultrasonic Cleaner  
(with heating function)  
AC110V, 60Hz (AC220V, 50Hz)

**188206-11(22)**

Soner 206 Ultrasonic Cleaner  
AC110V, 60Hz (AC220V, 50Hz)

**188207-11(22)**

Soner 206H Ultrasonic Cleaner  
(with heating function)  
AC110V, 60Hz (AC220V, 50Hz)

## Specification

Model	Soner203	Soner203H	Soner206	Soner206H
Frequency	53KHz	53KHz	53KHz	53KHz
Heating	No	Yes (Max. 60°C)	No	Yes (Max. 60°C)
Degas	Yes	Yes	Yes	Yes
Timer (minute)	1-99	1-99	1-99	1-99
Tank size (LxWxD) cm	24x14x10	24x14x10	30x15x15	30x15x15
Overall size (LxWxD) cm	27x16x24	24x16x24	33x18x29	33x18x29
Tank capacity (liter)	3	3	6	6
Housing	SUS304	SUS304	SUS304	SUS304
Drain	No	No	No	No
Stainless steel cover	Yes	Yes	Yes	Yes
Ultrasonic power(W)	100	100	180	180
Heating power(W)	No	75	No	150
Degas power(W)	100	100	180	180
Packing size (LxWxD) cm	36.5x27.5x34.5	36.5x27.5x34.5	43.5x28.5x40	43.5x28.5x40
Net weight	4	4.2	5.0	5.6
Gross weight	4.6	4.8	6.0	6.6

\* Each standard package of Soner Series includes stainless steel cover and bracket.

# Ultrasonic Cleaner

## Features

### ➤ Degas

Soner's family are standard with degas function to keep powerful cavitation effect.

### ➤ Industrial transducer

The Soner's benchtop cleaners adopt high power, rugged industrial transducer, durable and superior.

### ➤ Higher Frequency

Soner series feature 53 KHz frequency to get more precise cleaning of parts that contaminated in small and hard-to-reach crevices.

### ➤ Stainless Steel construction

Both tank and housing are constructed of SUS304, durable and easy to clean.



Soner210



Soner210H



Soner220



Soner220H

## Applications

- Solvent degas
- Cleaning for cuvette and test tube
- Cleaning for optical lenses and scientific Instruments
- Cleaning for various parts and PCB

## Ordering Information

### 188210-11(22)

Soner 210 Ultrasonic Cleaner  
AC110V, 60Hz (AC220V, 50Hz)

### 188211-11(22)

Soner 210H Ultrasonic Cleaner  
(with heating function)  
AC110V, 60Hz (AC220V, 50Hz)

### 188220-11(22)

Soner 220 Ultrasonic Cleaner  
AC110V, 60Hz (AC220V, 50Hz)

### 188221-11(22)

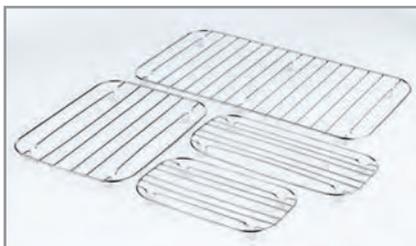
Soner 220H Ultrasonic Cleaner  
(with heating function)  
AC110V, 60Hz (AC220V, 50Hz)

## Specification

Model	Soner210	Soner210H	Soner220	Soner220H
Frequency	53KHz	53KHz	53KHz	53KHz
Heating	No	Yes (Max. 60°C)	No	Yes (Max. 60°C)
Degas	Yes	Yes	Yes	Yes
Timer (minute)	1-99	1-99	1-99	1-99
Tank size (LxWxD) cm	30x24x15	30x24x15	50x30x15	50x30x15
Overall size (LxWxD) cm	36x27x31	36x27x31	57x33x33	57x33x33
Tank capacity (liter)	10	10	20	20
Housing	SUS304	SUS304	SUS304	SUS304
Drain	Yes	Yes	Yes	Yes
Stainless steel cover	Yes	Yes	Yes	Yes
Ultrasonic power(W)	200	200	500	500
Heating power(W)	No	270	No	520
Degas power(W)	200	200	500	500
Packing size (LxWxD) cm	43.5x37.5x40	43.5x37.5x40	66.5x43.5x43	66.5x43.5x43
Net weight	6.8	7.0	13.6	13.8
Gross weight	8.4	8.6	15.4	15.6

\* Each standard package of Soner Series includes stainless steel cover and bracket.

# Accessories



## Bracket

Ideal for big parts  
(Standard accessory)



## Basket

Ideal for small parts  
(Optional accessory)



## Beaker positioning cover

Used to position beaker  
for indirect cleaning  
(Optional accessory)

## Ordering Information

- 188203-30** Basket for Soner 203/203H
- 188206-30** Basket for Soner 206/206H
- 188210-30** Basket for Soner 210/210H
- 188220-30** Basket for Soner 220/220H
- 188203-31** Bracket for Soner 203 · 203H
- 188206-31** Bracket for Soner 206 · 206H
- 188210-31** Bracket for Soner 210 · 210H
- 188220-31** Bracket for Soner 220 · 220H
- 188200-31** Beaker positioning cover (S) for Soner 203/203H/206/206H
- 188200-32** Beaker positioning cover (M) for Soner 210/210H
- 188200-33** Beaker positioning cover (L) for Soner 220/220H

Pressure Conversion Table (Ultimate Vacuum)

psi	atmosphere	mbar	kPa	Kg/cm <sup>2</sup>	oz/in <sup>2</sup>	in. Hg	mmHg (Torr)	in. H <sub>2</sub> O
1	0.068	68.947	6.895	0.07	16	2.036	51.72	27.68
14.7	1	1013.2	101.3	1.033	235.1	29.92	760	406.8
0.0145	0.00098	1	0.1	0.00102	0.2321	0.02953	0.75006	0.40146
0.145	0.01	0.00001	1	0.01	2.321	0.295	7.501	4.015
14.22	0.968	980.664	98.07	1	227.6	28.96	735.6	393.7
0.063	0.004	4.309	0.431	0.004	1	0.127	3.232	1.73
0.491	0.033	33.863	3.386	0.035	7.858	1	25.4	13.6
0.019	0.001	1.333	0.133	0.001	0.309	0.039	1	0.535
0.036	0.002	2.4909	0.249	0.003	0.578	0.074	1.868	1

Flow Rate Table

liter / min	CFM	m <sup>3</sup> / h	liter / sec
1	0.03531	0.06	0.01666
28.316	1	1.69896	0.47193
16.667	0.58857	1	0.27778
60	2.11893	3.6	1

Cubic Measure Table

Milliliter	Liter	U.S. ounce	U.S. pint	U.S. gal
1	0.001	0.033814	0.0021134	0.00026417
1000	1	33.814	2.1134	0.26417
29.574	0.029574	1	0.0625	0.007813
473.176	0.473176	16	1	0.125
3785.4	3.7854	128	8	1

Chemical Resistant of Commonly Used Materials Table

	Weak Acids	Weak Bases	Temperature (°C) (Prolonged use)	Temperature (°C) (Short-term use)	Izod Impact Strength ( kg-cm/cm)	Ultraviolet Ray	Specific Gravity
<b>ABS</b>	E	E	75	100	21	P	1.06
<b>PP</b>	E	E	85	100	20	F	0.92
<b>PC</b>	E	F	130	140	12	F	1.20
<b>POM</b>	P	F	90	110	19.1	P	1.42
<b>Nylon6</b>	G	E	80	120	6	F	1.15
<b>PSU</b>	E	E	160	180	20	F	1.24
<b>PES</b>	E	E	180	220	8.7	F	1.37
<b>PVDF</b>	E	E	105	150	19.6	G	1.78
<b>PTFE</b>	E	E	260	260	16.3	G	2.25

E: Excellent G: Good F: Fairish P: Poor

Sterilization Method

	Autoclavable (121°C, 20min)	Dry (160°C)	Ultraviolet Ray	Gamma Radiatio
<b>ABS</b>	P	P	P	G
<b>PP</b>	F	P	F	P
<b>PC</b>	G	P	F	G
<b>POM</b>	F	P	P	P
<b>Nylon6</b>	G	P	F	F
<b>PSU</b>	E	G	F	G
<b>PES</b>	E	E	F	G
<b>PVDF</b>	G	P	G	G
<b>PTFE</b>	E	E	G	G

E: Excellent G: Good F: Fairish P: Poor

Note : Above information is based on experience to date.

It is intended as a reference for use at your own discretion and risk



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