

INSTRUCTION MANUAL

Vacuum Filtration System

Model No.

Lafil 300 / 400 - LF 30

Lafil 300 / 400 - SF 10

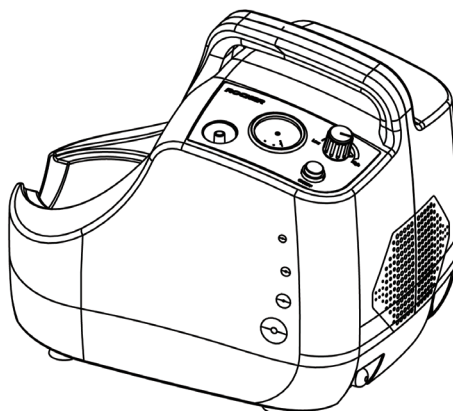
Lafil 400 - LF 5a - 500

Lafil 300C - VF 12

Lafil 200 - VF 17



Instruction Video



ROCKER

Please read this instruction manual before using this product.

Important Notice

This instrument is designed for laboratory usage only. Please read this manual carefully before installing and operating. The instrument shall not be modified in any way. Any modification will void the warranty and may result in potential hazard. We are not responsible for any injury or damage caused by any non-intended purposes and modifying the instrument without authorization.

1. Check the voltage specified on the name plate and ensure it matches the line voltage in your location.
2. Install the instrument in a clean, dust-less and ventilated area under 40°C.
3. Never use the instrument with any flammable or toxic material.
4. Never use instrument with chemical material, except for Lafil 300C.
5. The instrument is not designed to start against applied vacuum. To prevent damage, verify that the pump inlet is at atmospheric pressure before each start. If necessary, the inlet can be vented to atmosphere by partially unscrewing the vacuum regulator knob.
6. The pump has a thermal protection device that automatically shuts-off when it becomes overheated.
7. Do not use any lubricant, which may damage the pump.
8. Filtration accessories, including overflow protection, are applicable to most of low concentration acid, base, organic solution but not all solution. Please search for chemical compatibility chart before using.
9. Please discard packing material according to local related regulations.

**** Warning: The PTFE-coated diaphragm and chamber in Lafil 300C can offer good resistance to a wide range of chemicals except strong acid and alkali.***

Unpacking

Please check if the package is complete without any damage before unpacking. When unpacking, please make sure you have all accessories that indicated on the list. If there is any problem, please keep the serial number along with packing case and contact your local distributor immediately for assistance.



Lafil 300 / 400 - LF 30



Lafil 300 / 400 - SF 10

Model	Standard Package Includes:
Lafil 300 / 400 - LF 30	Lafil 300 / 400, Oil Free Vacuum Pump
	LF 30, Filtration Set
	Silicone Tube
	Power Cord
	Instruction Manual

Model	Standard Package Includes:
Lafil 300 / 400 - SF 10	Lafil 300 / 400, Oil Free Vacuum Pump
	SF 10, Filtration Set
	Dragon 100, Torch Burner
	Pall, MCE Membrane, 47 mm, 0.45 μ m, 200/PK
	Silicone Tube
	Power Cord
	Instruction Manual



Lafil 400 - LF 5a - 500



Lafil 300C - VF 12

Model	Standard Package Includes:
Lafil 400 - LF 5a - 500	Lafil 400, Oil Free Vacuum Pump
	LF 5a, Spin-Lock Filter Holder (500 ml)
	500 ml Glass Laboratory Bottle
	Silicone Adaptor
	Silicone Tube
	Power Cord
	Instruction Manual

Model	Standard Package Includes:
Lafil 300C - VF 12	Lafil 300C, PTFE Coated Chemical Resistant Vacuum Pump
	VF 12, Glass Filtration Set
	Silicone Adaptor
	Silicone Tube
	Power Cord
	Instruction Manual

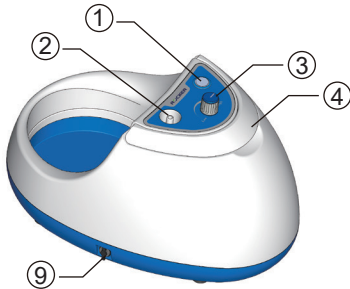


Lafil 200 - VF 17

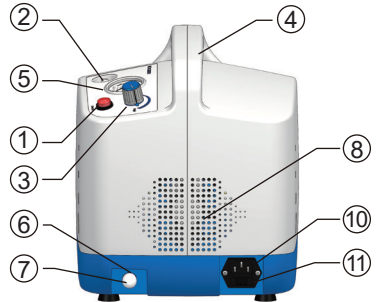
Model	Standard Package Includes:
Lafil 200 - VF 17	Lafil 200, Oil Free Vacuum Pump
	VF 17, Filtration Set
	Silicone Tube
	Power Adaptor
	Instruction Manual

Main Part Diagram

Lafil 200



Lafil 300 / 300C / 400



Position	Designation	Position	Designation
1	Power Switch	7	PE Muffler
2	Inlet	8	Ventilation Outlet
3	Vacuum Regulator	9	DC Socket
4	Handle	10	AC Socket
5	Vacuum Gauge	11	Fuse Holder
6	Washer		

Installation and Operation

• Installation of Filtration Apparatus and Accessories

Filtration Apparatus			
LF 30	SF 10	LF 5a - 500	VF 12 / 17

Overflow Protection	Support Base	
<p>Included in LF 30 and SF 10 Filtration Apparatus</p>	<p>LF 30</p>	<p>LF 5a</p>

Vacuum Filtration System Operation

- A. Turn on the pump, block the inlet and regulate the desired vacuum by vacuum regulator.
- B. Put the installed filtration apparatus in Lafil series vacuum pump.
 - Insert the silicone adaptor onto bottom of laboratory glass bottle of LF 5a -500 or VF 12, then install filtration apparatus into vacuum pump to stable the system.
- C. Connect the inlet of pump and filtration apparatus with silicone tube as shown below.
- D. Place the membrane in filter holder, pour sample liquid and turn on the pump to start filtration.
- E. After finishing filtration, turn off the pump and retrieve the membrane.



**Silicone Adaptor
Assembly Diagram**



**Vacuum Filtration System
Assembly Diagram**

Maintenance

1. The vacuum pump is not autoclavable. Please clean the surface by pure water or 75% ethanol.
2. After finishing the experiment, please keep pumping the air for at least 2 minutes to withdraw the residual steam.
3. Filtration apparatus and accessories are autoclavable (121°C, 1 bar, 20 min).
4. Please make sure to rinse apparatus with pure water and separate each part before autoclave.
5. **DO NOT** autoclave the plastic filter holder with aluminum foil. It is always recommended to autoclave the funnels in autoclave bags.
6. Funnels, adaptors, and membrane supports of SF 10 are made of SS316 which can be fast sterilized by flame or autoclaved.
7. O-ring(s) and silicone tube(s) are consumables, it is recommended to replace it on a yearly basis or as needed to ensure good operation.
8. When replace fuse on Lafil 300 / 300C / 400, get the spare fuse from the fuse holder. (4A fuse for 110V; 1.5A fuse for 220V)

Troubleshooting

Problem	Cause and Solution
Failed to start	<ul style="list-style-type: none"> • Loose plug → Reconnect plug to socket firmly. • Wrong voltage → Reconnect to power specified on name plate. • Wrong power adaptor → Plug in the power adaptor from manufacture of instrument. • Blown fuse → Replace a new fuse. • Vacuum exists → Release vacuum and restart the pump. • Switch is broken → Contact distributor for assistance.
Failed to adjust vacuum	<ul style="list-style-type: none"> • Faulty vacuum regulator → Contact distributor for assistance. • Faulty vacuum gauge → Contact distributor for assistance.
Poor vacuum	<ul style="list-style-type: none"> • Improperly vacuum setting → Adjust the vacuum regulator. • Clogged muffler → Replace a new muffler. • Air leakage → Replace or tighten the tubing and accessories that possible leaks.
Low filtration speed	<ul style="list-style-type: none"> • Improperly vacuum setting → Adjust the vacuum regulator. • Air leakage → Replace or tighten the tubing and accessories that possible leaks. • Full vacuum bottle → Empty the vacuum bottle. • Unsuitable membrane → Change an appropriate membrane. • Membrane is blocked → Replace a new membrane.
Increased noise level	<ul style="list-style-type: none"> • Muffler is defective or not installed properly → Replace or tighten a muffler.

Ordering Information

197200-01(02)	Lafil 200, Oil Free Vacuum Pump, AC100~240V adaptor, US plug (EU plug)
197300-11/22	Lafil 300, Oil Free Vacuum Pump, AC110V, 60Hz (AC220V, 50Hz)
197400-11/22	Lafil 400, Oil Free Vacuum Pump, AC110V, 60Hz (AC220V, 50Hz)
197330-11/22	Lafil 300C, PTFE Coated Chemical Resistant Vacuum Pump, AC110V, 60Hz (AC220V, 50Hz)
197010-30	LF 30, Filtration Set
197010-50	LF 50, Filtration Set
197010-32	SF 10, Stainless Steel Filtration Set
197010-33	SF 30, Stainless Steel Filtration Set
167200-12	VF 12, Glass Filtration Set
167200-17	VF 17, 90 mm Glass Filtration Set
197000-01	LF 3, Spin-Lock Filter Holder (300 ml)
197000-06	LF 5, Spin-Lock Filter Holder (500 ml)
180100-01 / 03 / 05	100 ml / 300 ml / 500 ml SF Stainless Steel Funnel
167120-31	300 ml Glass Filter Holder for VF 6
197000-39	Overflow Protection
197400-45	PE Muffler (1/8 PT)
197000-11	1200 ml, PES Vacuum Bottle
197000-11-PC	1200 ml, PC Vacuum Bottle
167210-36	Continuous Filtration Kit for 300 ml Glass Filter Holder
167210-35	Continuous Filtration Kit for 1000 ml Glass Filter Holder
167200-38	Silicone Tube, ϕ 6 x 12 mm, 1 m
177100-00	Dragon 100, Torch Burner
167100-20	PALL, Type A/ E Glass Fiber Discs, 1 μ m, 100/PK
167100-52	PALL, GN-6 MCE Membrane Disc Filter, grid (200/PK)