

## LABOPORT® Diaphragm Pumps

oil-free, dry running  
corrosion resistant materials  
contamination-free operation

PUMP SELECTION GUIDE (Web Version)

*for*

*blotting*

*filtration*

*gel dryers*

*rotary evaporators*

*vacuum concentrators*

*solid phase extraction*



# LABOPORT® Pump Selection Guidelines

## for Laboratory Appliances

### For Filtration, Blotting, Solid Phase Extraction

Cap. L/min.	Model Number	Head Config.	Wetted Materials	Vacuum Torr (* Hg)	Presse psig	Dimensions L x W X H cm	Shipping Wt. kg
<i>Flask Filtration - pump only</i>							
5.5	N86KTP	Single stage	Ryton/Teflon®	120 (25.2)	35	18 x 9 x 15	1.9
11.5	N811KTP	Single stage	Ryton/Teflon®	218 (21.3)	15	20 x 9 x 16	2.5
<i>Vacuum filtration, blotting - pump with vacuum gauge and adjustable bleeder valve</i>							
13	PU839	Single stage	Ryton/Teflon®	75 (27)	15	20 x 9 x 17	2.6
<i>Pressure filtration - pump with pressure gauge and adjustable bleeder valve</i>							
11.5	PU840	Single stage	Ryton/Teflon®	218 (21.3)	35	20 x 9 x 17	2.6
5.5	PU838	Single stage	Ryton/Teflon®	120 (25.2)	35	18 x 9 x 15	2.0

### For Rotary Evaporation, Distillation

Cap. L/min.	Model Number	Head Config.	Wetted Materials	Vacuum Torr (* Hg)	Pressure psig	Dimensions L X W X H cm	Shipping Wt. kg
<i>Distillation of high BP solvents (&gt;110°C) Chlorobenzene, DMF, DMSO, isoamyl alcohol, xylene</i>							
34	N842.3FTP	Two stage	Teflon®/Kalrez®	1.5 (29.86)	15	33 x 17 x 22	12.2
<i>Reflux reactions/distillation of high BP solvents (80-110°C) Water, heptane, isobutyl alcohol, toluene</i>							
34	N842.3FTP	Two stage	Teflon®/Kalrez®	1.5 (29.86)	15	33 x 17 x 22	12.2
34	N840.3FTP	Two stage	Teflon®/Kalrez®	6 (29.7)	15	33 x 17 x 22	12.2
<i>Distillation of medium BP solvents (60-80°C) Acetonitrile, benzene, chloroform, ethanol, ethyl acetate, hexane, methanol</i>							
34	N840.3FTP	Two stage	Teflon®/Kalrez®	6 (29.7)	15	33 x 17 x 22	12.2
20	N820.3FTP	Two stage	Teflon®/Kalrez®	6 (29.7)	15	32 x 16 x 20.	9.5
<i>Distillation of low BP solvents (35-60°C) Acetone, methylene chloride, pentane</i>							
20	N820.3FTP	Two stage	Teflon®/Kalrez®	6 (29.7)	15	32 x 16 x 20	9.5
34	N840FTP	Single stage	Teflon®/Kalrez®	75 (27)	15	33 x 17 x 22	12.2

You should consider the boiling point of the solvent in use and the volume of solvent to be distilled when selecting a KNF pump.

### For Gel Drying, Vacuum Concentration, Vacuum Ovens

Cap. L/min.	Model Number	Head Config.	Wetted Materials	Vacuum Torr (* Hg)	Pressure psig	Dimensions L X W X H cm	Shipping Wt. kg
<i>Gel drying - use with a KNF dry ice trap</i>							
20	N820.3FTP	Two stage	Teflon®/Kalrez®	6 (29.7)	15	32 x 16 x 20	9.5
<i>Vacuum concentration - use with a KNF dry ice trap</i>							
34	N840.3FTP	Two stage	Teflon®/Kalrez®	6 (29.7)	15	33 x 17 x 22	12.2
<i>Small Vacuum ovens - chamber capacity &lt;15 liters; use with a KNF dry ice trap</i>							
20	N820.3FTP	Two stage	Teflon®/Kalrez®	6 (29.7)	15	28 x 14 x 19	9.5
<i>Medium Vacuum ovens - chamber capacity 15-30 liters; use with a KNF dry ice trap</i>							
34	N840.3FTP	Two stage	Teflon®/Kalrez®	6 (29.7)	15	33 x 17 x 22	12.2
<i>Large Vacuum ovens - chamber capacity &gt;30 liters; use with a KNF dry ice trap</i>							
34	N842.3FTP	Two stage	Teflon®/Kalrez®	1.5 (29.86)	15	33 x 17 x 22	12.2
<i>KNF Dry Ice Trap for use with above applications - 400 ml capacity</i>							
	PU850		Glass body/Plexiglas® lid			14 Dia. x 15.5 H	1.0

Specifications are subject to change without notice. You should always check corrosion resistance charts for compatibility with the chemicals used in your laboratory.

### Complete List of Available LABOPORT® Vacuum Pumps

Cap. L/min.	Model Number	Head Config.	Wetted Materials	Vacuum Torr (* Hg)	Pressure psig	Dimensions L X W X H cm	Shipping Wt. kg
5.5	N86KTP	Single stage	Ryton/Teflon®	120 (25.2)	35	18 x 9 x 15	1.9
11.5	N811KTP	Single stage	Ryton/Teflon®	218 (21.3)	15	20 x 9 x 16	2.5
10	N810FTP	Single stage	Teflon®/Kalrez®	75 (27)	15	28 x 14 x 19	7.2
20	N820FTP	Single stage	Teflon®/Kalrez®	75 (27)	15	32 x 16 x 20	9.5
34	N840FTP	Single stage	Teflon®/Kalrez®	75 (27)	15	33 x 17 x 22	12.2
10	N810.3FTP	Two stage	Teflon®/Kalrez®	6 (29.7)	15	28 x 14 x 19	7.2
20	N820.3FTP	Two stage	Teflon®/Kalrez®	6 (29.7)	15	32 x 16 x 20	9.5
34	N840.3FTP	Two stage	Teflon®/Kalrez®	6 (29.7)	15	33 x 17 x 22	12.2
34	N842.3FTP	Two stage	Teflon®/Kalrez®	1.5 (29.86)	15	33 x 17 x 22	12.2
65	N840.1.2FTP	Parallel head	Teflon®/Kalrez®	68 (27.3)	15	33 x 17 x 22	12.2

Above pumps are available in 115V/60Hz and 230V/50Hz.

## Filtration, blotting, solid phase extraction

All KNF pumps are lightweight and easy to use for your flask filtration, vacuum manifold and vacuum blotting applications. These tough, compact pumps use premium, corrosion-resistant Ryton®, Teflon® and Kalrez® resins. There are no metal wetted parts. They are fitted with a patented multi-port valve design that increases performance and tolerates, without damage, any liquids accidentally drawn into the system.

Models are available with a high-quality, smoothly dampened brass vacuum or pressure gauge and a convenient machined-brass bleeder valve for fine adjustment of performance. Needle bounce is negligible.



## Rotary evaporation, distillation

Consider a KNF LABOPORT® pump for quiet, reliable operation without the messy handling of pump oil, or the problems associated with using water aspirators. They are the perfect replacement for rotary vane pumps in applications where a variety of corrosive vapors are encountered.

Equipped with patented, sturdy Kalrez® multi-port valves, these pumps tolerate ingestion of occasional liquids without damage or degrading performance. The thick, solid Teflon® resin heads will not peel or corrode when exposed to most solvents.

Applicable codes pertaining to proper laboratory ventilation and solvent disposal should be adhered to, especially when processing potentially toxic and/or combustible liquids and vapors. Also available in 230V/50Hz.

## Gel drying, vacuum concentrating, vacuum ovens

KNF's dry, solid Teflon® resin LABOPORT® pumps are the perfect vacuum source for your laboratory appliances.

For vacuum ovens, volumetric size of the oven should be considered. In vacuum concentration, when working with difficult to evaporate solvents such as water, use our two-stage deep vacuum pump, the N842.3FTP, which reaches an end vacuum of 1.5 Torr.

A KNF dry ice trap is recommended used to collect the liquids and to dramatically reduce your processing time. For maximum efficiency, it should be placed prior to the pump inlet. Also available in 230V/50Hz.



## Control the rotary evaporation/distillation process

KNF's new vacuum pump controller uses advance microprocessor features and offers you complete control over the evaporative process. It prevents foaming and boiling, by venting instantly with the touch of a button. It maintains system vacuum precisely to within ±0.2% for the duration of your process. With five memory registers, it stores separate vacuum level and hysteresis settings for multiple processes, solvents or even individual users. Bright red LED digits are easy to read. Only Kalrez® resin, ceramic, and polypropylene materials are in contact with the gas stream. There are no stainless steel components to pit or corrode.

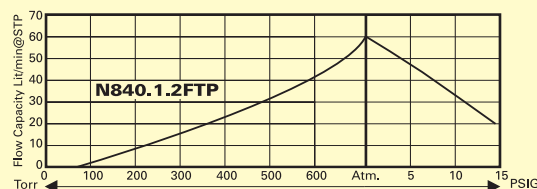
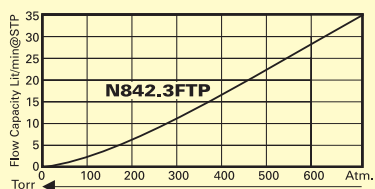
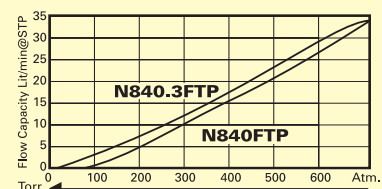
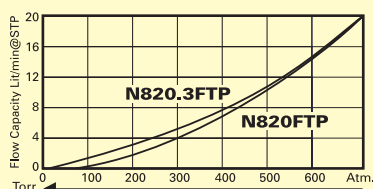
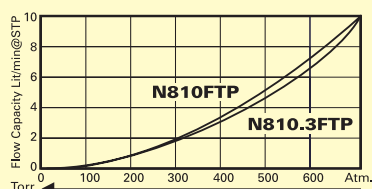
Setpoint range is between atm. and 1 Torr (2 mbar), hysteresis range is between atm. and 1 Torr (1 mbar). 3/8" ID hose barb connections.

This controller may be purchased with a LABOPORT® vacuum pump and convenient, sturdy stand to facilitate transportation within the lab.

## LABOPORT® Pump/Vacuum Pump Controller Selection Chart

Cap. L/min.	System Number	Pump Head Configuration	Head/Valve Materials	Vacuum Torr (* Hg)	Pressure psig	Dimensions L X W X H cm	Shipping Wt. kg
<b>Complete vacuum station including vacuum pump controller, LABOPORT® pump and stand</b>							
34	PU845	Two stage	Teflon®/Kalrez®	1.5 (29.86)	15	33 x 20 x 41	18
34	PU844	Two stage	Teflon®/Kalrez®	6 (29.7)	15	33 x 20 x 41	18
20	PU843	Two stage	Teflon®/Kalrez®	6 (29.7)	15	33 x 20 x 41	15
<b>Vacuum Pump Controller only (less pump and stand)</b>							
	PU842	115V/60Hz only	Polypropylene/Kalrez®			19 x 14 x 7	1.4

## LABOPORT® Vacuum Pump Performance



## Additional Vacuum Pumps & Compressors featuring solid Teflon® resin or 316 stainless steel construction

### Practical vacuum pumps for general lab use

These economical pumps are an excellent companion for most laboratory appliances requiring a dry, oil-free vacuum source. Use them with your gel dryer, rotary evaporator, distillation processor and vacuum filtration device. Build from premium corrosion-resistant Teflon® and Kalrez® resins, these pumps handle the harshest gases and vapors found in the laboratory\*.

They are available in either single head, parallel head or two-stage configurations. The single head and parallel head models provide output pressure up to 20 psig, 50 Torr vacuum, and transfer most corrosive gases and vapors found in the lab. The two-stage model is designed to obtain a deeper vacuum. All are supplied with ¼" hose connectors.

### Vacuum Pumps with Solid Teflon® Resin Heads

Cap. L/min.	Model Number	Head Config.	Head/Valve/Diaphragm Materials	Vacuum Torr (* Hg)	Pressure psig	Dimensions L X W X H cm	Shipping Wt. kg
17	N726FTP	Single stage	Teflon®/Kalrez®/Teflon®	50 (28)	20	20 x 11 x 18	4.8
30	N726.1.2FTP	Parallel head	Teflon®/Kalrez®/Teflon®	50 (28)	20	25 x 20 x 18	6.8
17	N726.3FTP	Two stage	Teflon®/Kalrez®/Teflon®	10 (29.5)	-	25 x 20 x 18	6.8

Above pumps available in 115V/60Hz and 230V/50Hz.

### High pressure 316 stainless steel/Teflon® vacuum pumps & compressors

These rugged pumps are excellent for higher pressure or flow applications such as gas transfer or circulation. They feature machined, 316 stainless steel heads, a diaphragm coated with Teflon® resin, and valves of Teflon® resin for handling tough corrosive gases and vapors\*.

Pump disassembly for cleaning is quick and easy. They feature service-free, fan cooled ball bearing motors for long life.

### Vacuum Pumps & Compressors with 316 Stainless Steel Heads

Cap. L/min.	Model Number	Head Config.	Head/Valve/Diaphragm Materials	Vacuum Torr (* Hg)	Pressure psig	Dimensions L X W X H cm	Shipping Wt. kg
29.3	N035STP	Single stage	316SS/Teflon®/Teflon®	70 (27)	60	26 x 15 x 20	12.5
56	N035.1.2STP	Parallel head	316SS/Teflon®/Teflon®	70 (27)	60	31 x 25 x 20	17
29.3	N035.3STP	Two stage	316SS/Teflon®/Teflon®	10 (29.5)	-	31 x 25 x 20	17

Above pumps available in 115V/60Hz and 230V/50Hz.

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