

Vacuum Pump Selection Guide



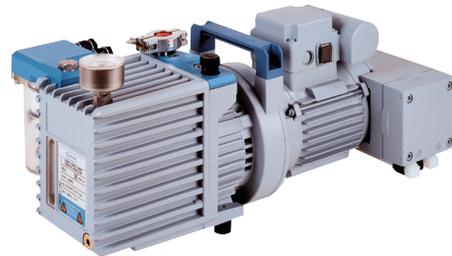
Vacuum Pumps

Features & Benefits



Rotary Vane

- Designed for use with aqueous samples
- Single phase direct drive motor, totally enclosed and fan cooled. Should the motor overheat, the thermal overload device switches off the pump. When the pump cools down, the motor automatically restarts
- Ultimate vacuum (total pressure) 2×10^{-3} mBar (1.5 micron)



VACUUBRAND HYBRID*

- Designed for use with acids and other harsh chemicals including TFA, TFA by-products, acetonitrile, HBe and HNO_3 present in samples such as HPLC-prepared and peptide purified materials
- Comprised of a two-stage rotary vane pump and two-stage, chemical-resistant diaphragm pump. Provides a deep vacuum required for quality freeze drying and evaporation with superior solvent and acid handling capabilities
- Ultimate vacuum (partial pressure) 2×10^{-3} mBar (1.5 micron)



Diaphragm

- PTFE-corrosion resistant
- Designed for corrosive applications
- For evaporation products only
- Wetted parts are PTFE-coated for corrosion resistance
- Ultimate vacuum (total pressure) <7 or <2 mBar



Scroll

- Designed for use with acids below 20% concentration and solvents including acetonitrile
- Two spiral scrolls compress air and vapors to move them toward the exhaust
- Oil-free design eliminates the use of hydrocarbons
- Ultimate vacuum (partial pressure) 7×10^{-3} mBar (5.3 micron) or 2×10^{-2} mBar (15 micron)

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Vacuum Pumps

Specifications

Rotary vane models feature:

- Compatible with Labconco Freeze Dryers, Centrifugal Concentrators and Controlled Atmosphere Glove Boxes
- Ultimate vacuum (total pressure) 2×10^{-3} mBar (1.5 micron)
- On/off switch. Two inlet adapters (1/2" and 3/4" OD). Cast aluminum casing and rubber feet
- Mode selector with two positions: High Vacuum and High Throughput
- Gas ballast with three positions: Closed, Low Flow and High Flow
- Single phase direct drive motor
- Isolation valve seals the inlet to prevent oil and air contamination of the system in the event of power failure
- Retractable lifting handle (models: 1472100 and 7739402)
- Lifting bracket (models: 1467700 and 7739403)
- Overall dimensions: 6.5" w x 17.0" d x 10.4" h
- Shipping weight:
 - 62 lbs. (28 kg) (models: 1472100 and 7739402)
 - 65 lbs. (30 kg) (models: 1467700 and 7739403)
- Include four each one liter bottles of vacuum pump oil and one exhaust filter with oil mist and odor filter elements

VACUUBRAND HYBRID* models feature:

- Compatible with Labconco Freeze Dryers and Centrifugal Concentrators
- Ultimate vacuum (partial pressure) 2×10^{-3} mBar (1.5 micron)
- Comprised of a two-stage rotary vane pump and two-stage, chemical-resistant diaphragm pump
- Lower maintenance, longer lasting. The diaphragm pump, made of PTFE and other chemical-resistant fluoropolymer components evacuates the oil reservoir, freeing it from corrosive gases and vapors, thus extending the life of the oil and ultimately the life of the pump
- Environmentally-friendly. Pump oil lasts up to 10 times longer than in conventional rotary vane pumps under virtually all conditions. Fewer oil changes conserves resources
- Pressure control valve compensates for the different volumes displaced by the two pumps
- Glass separator captures downstream condensate vapors
- Lifting handle
- 3/4" OD inlet adapter
- Overall dimensions: 20.0" w x 12.0" d x 9.1" h
- Shipping weight: 66 lbs. (30 kg)
- Includes one liter bottle of vacuum pump oil, power switch, power cord and plug

Scroll models feature:

- Designed for use with acids below 20% concentration and solvents including acetonitrile
- Compatible with Labconco Freeze Dryers and Dry Evaporation Systems
- Ultimate vacuum (partial pressure) 7×10^{-3} mBar (5.3 micron) for 7587000
- Ultimate vacuum (partial pressure) 2×10^{-2} mBar (15 micron) for 7587100
- Low maintenance, longer lasting. Since these dry pumps do not require oil, lifetime operation costs are lower and less maintenance is needed compared to oil pumps
- Two spiral scrolls compress air and vapors to move them toward the exhaust
- Environmentally-friendly. Oil-free design has no hydrocarbons
- Vacuum without contamination. Lubricant-free within the vacuum envelope and hermetically-sealed environment renders a totally clean and dry vacuum to prevent cross contamination
- Advanced scroll-form and tip-seal technologies deliver best-in-class vacuum performance and ultimate vacuum levels
- Unique tip seal design significantly reduces wear to minimize maintenance and extend service life
- Quiet operation of <52 dB(A) for minimal environmental impact
- 3/4" OD inlet adapter
- Overall dimensions: 20.0" w x 12.0" d x 15.0" h
- Shipping weight: 59 lbs. (27 kg)
- Include power switch, power cord and plug

Diaphragm models feature:

- Designed for corrosive applications
- Compatible with Labconco Centrifugal Concentrators and Evaporation Systems
- Ultimate vacuum (total pressure) <7 mBar
- On/off switch. One inlet adapters (1/2" OD)
- Wetted parts are PTFE-coated for corrosion resistance
- Overall dimensions:
 - 9.6" w x 8.3" d x 7.8" h (models: 7359020 and 7359030)
 - 9.1" w x 15" d x 6.7" h (models: 7393000 and 7393000)
- Shipping weight: 38 lbs. (15 kg) (models: 7359020 and 7359030)
- Shipping weight: 40 lbs. (18 kg) (7393000 and 7393000)
- Includes power cord and plug

Vacuum Pumps

Selection Guide

Centrifugal Vacuum Concentrators

| Model | Application | Sample Type | Pump Type | Recommended Pump | | Recommended Trap |
|---|-------------------------------|--------------------|-------------------|------------------|-----------|---|
| | | | | 115 Volts | 230 Volts | |
|  | Evaporation | Any, Small Volumes | Small Diaphragm | 7359020 | 7359030 | Mechanical cold & chemical traps included |
| | | Any, Large Volumes | Large Diaphragm | 7393000 | 7393001 | |
| | Evaporation or Lyophilization | Water | Small Rotary Vane | 1472100 | 7739402 | |
| | | Acids & Solvents | Hybrid | 7584000 | 7584002 | |
| | | | Scroll | 7587100 | 7587100 | |
|  | Evaporation | Any, Small Volumes | Small Diaphragm | 7359020 | 7359030 | Glass trap |
| | | Any, Large Volumes | Large Diaphragm | 7393000 | 7393001 | |
| | Evaporation or Lyophilization | Water | Small Rotary Vane | 1472100 | 7739402 | Mechanical cold trap required |
| | | Acids & Solvents | Hybrid | 7584000 | 7584002 | Mechanical cold and glass traps required |
| | | | Scroll | 7587100 | 7587100 | |
|  | Evaporation | Any | Included | | | 2 Glass traps included |
|  | Evaporation | Any | Included | | | Glass trap included |
|  | Evaporation | Any | Included | | | Mechanical cold and glass traps required |

Dry Evaporators

| Model | Application | Sample Type | Pump Type | Recommended Pump | | Recommended Trap |
|---|-------------|-------------|-----------------|------------------|-----------|---|
| | | | | 115 Volts | 230 Volts | |
|  | Evaporation | Any | Large Diaphragm | 7393000 | 7393001 | Optional Trapping Valve 7348000 is required with mechanical cold trap |
| | | | Scroll | 7587000 | 7587000 | |
| | | | | 7587100 | 7587100 | |

Vacuum Pumps

Selection Guide

Freeze Dryers

| Model | Application | Sample Type | Pump Type | Recommended Pump | | Recommended Trap |
|---|----------------|------------------|-------------------|------------------|----------------|--------------------|
| | | | | 115 Volts | 230 Volts | |
|  Benchtop 2.5, 4.5, 6 & 8 Liter or Dry Ice | Lyophilization | Water | Small Rotary Vane | 1472100 | 7739402 | Collector included |
| | | Acids & Solvents | Combination | 7584000 | 7584002 | |
| | | | Scroll | 7587100 | 7587100 | |
|  Console 6, 12 & 18 Liter | Lyophilization | Water | Rotary Vane | 1467700 | 7739403 | Collector included |
| | | Acids & Solvents | Combination | 7584000 | 7584002 | |
| | | | Scroll | 7587000 | 7587000 | |
|  Console 6, 12 & 18 Liter with Bulk Tray Dryer, Stoppering Tray Dryer, or Tall Clear Chamber | Lyophilization | Water | Large Rotary Vane | | 7739403 | Collector included |
| | | Acids & Solvents | Scroll | 7587000 | 7587000 | |
|  Triad | Lyophilization | Water | Rotary Vane | | 7739403 | Collector included |
| | | Acids & Solvents | Combination | | 7584002 | |
| | | | Scroll | | 7587000 | |

Glove Boxes

| Model | Application | Sample Type | Pump Type | Recommended Pump | | Recommended Trap |
|---|--|-------------|-------------------|------------------|----------------|------------------|
| | | | | 115 Volts | 230 Volts | |
|  Controlled Atmosphere | Atmosphere Control | Any | Small Rotary Vane | 1472100 | 7739400 | None |
| | | | | | 7739402 | |
|  | Drying Train Moisture & Oxygen Removal | Any | Scroll | 5248200 | 5248201 | None |

Vacuum Pumps

Ordering Information

Rotary Vane



| Catalog Number | Electrical Configuration | Ultimate Vacuum (Partial Pressure) | Displacement at 60 Hz L/min | Vacuum Outlet | Shipping Weight |
|----------------|--------------------------|--------------------------------------|-----------------------------|-----------------|-----------------|
| 1472100 | 115V, 50/60 Hz, 4.6A | 2×10^{-3} mBar (1.5 micron) | 117 | 1/2" or 3/4" OD | 62 lbs. (28 kg) |
| 7739402* | 230V, 50/60 Hz, 2.4A | 2×10^{-3} mBar (1.5 micron) | 117 | 1/2" or 3/4" OD | 62 lbs. (28 kg) |
| 1467700 | 115V, 50/60 Hz, 7.8A | 2×10^{-3} mBar (1.5 micron) | 195 | 1/2" or 3/4" OD | 65 lbs. (30 kg) |
| 7739403* | 230V, 50/60 Hz, 4.0A | 2×10^{-3} mBar (1.5 micron) | 195 | 1/2" or 3/4" OD | 65 lbs. (30 kg) |

VACUUBRAND HYBRID**



| Catalog Number | Electrical Configuration | Ultimate Vacuum (Partial Pressure) | Displacement at 60 Hz L/min | Vacuum Outlet | Shipping Weight |
|----------------|--------------------------|--------------------------------------|-----------------------------|---------------|-----------------|
| 7584000 | 115V, 50/60 Hz, 5.7A | 2×10^{-3} mBar (1.5 micron) | 115 | 3/4" OD | 66 lbs. (30 kg) |
| 7584002* | 230V, 50/60 Hz, 2.7A | 2×10^{-3} mBar (1.5 micron) | 115 | 3/4" OD | 66 lbs. (30 kg) |

Scroll



| Catalog Number | Electrical Configuration | Ultimate Vacuum (Partial Pressure) | Displacement at 60 Hz L/min | Vacuum Outlet | Shipping Weight |
|----------------|--|--------------------------------------|-----------------------------|---------------|-----------------|
| 7587000 | 115/230V, 50/60 Hz, 10/6A (Includes NEMA 5-15P and reverse IEC) | 7×10^{-3} mBar (5.3 micron) | 190 | 3/4" OD | 59 lbs. (27 kg) |
| 7587100 | 115/230V, 50/60 Hz, 10/6A (Includes NEMA 5-15P and reverse IEC) | 2×10^{-2} mBar (15 micron) | 103 | 3/4" OD | 59 lbs. (27 kg) |

Diaphragm



| Catalog Number | Electrical Configuration | Vacuum | Displacement at 60 Hz L/min | Vacuum Outlet | Shipping Weight |
|----------------|--------------------------|----------|-----------------------------|---------------|-----------------|
| 7359020 | 115V, 50/60 Hz, 3.4A | 7 mBar | 38 | 1/2" OD | 38 lbs. (15 kg) |
| 7359030 | 230V, 50/60 Hz, 1.8A | 7 mBar | 38 | 1/2" OD | 38 lbs. (15 kg) |
| 7393000 | 115V, 60 Hz, 4.0A | 1.5 mBar | 63 | 1/2" OD | 40 lbs. (18 kg) |
| 7393001 | 230V, 50/60 Hz, 3.0A | 1.5 mBar | 63 | 1/2" OD | 40 lbs. (18 kg) |

Pressure/Vacuum Conversion Factors

| mBar | micron | Torr | psi |
|------------------------------------|-------------|-------------|-----------------------------------|
| Torr x 1.33 | Torr x 1000 | mBar x 0.75 | Inches Hg vac. (absolute) x 0.491 |
| inches Hg. vac. (absolute) x 33.86 | | | |

*Has reverse IEC plug

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Vacuum Pump Accessories

Ordering Information

Rotary Vane and Combination



1472200—Inlet Filter. For rotary vane pumps 1472100, 7739400, 7739402, 1467700, 7739401 and 7739403. Prevents backstreaming and protects the pump from submicron particle damage. Includes filter assembly and one filter cartridge. Life is approximately 1000 hours at 1.33×10^{-2} mBar (10 microns) vacuum. Shipping weight 1.0 lb. (0.5 kg)



7584300—VACUUBRAND B-Oil.**

One liter. Replacement for combination pumps 7584000 and 7584002. Shipping weight 2.0 lbs. (0.9 kg)



7541300—Vacuum Pump Oil. One gallon (3.8 L) synthetic hydrocarbon oil. Shipping weight 12 lbs. (5 kg)

1473500—Oil Return Kit. Allows extended operation of the pump with the ballast open and helps to keep oil purged of contaminants. Consists of a stainless steel cylinder and tubing with clamp. When the excess oil collects in the filter, it is directed back to the pump to conserve oil. Shipping weight 0.5 lb. (0.2 kg)



1988000

Vacuum Pump Oil. Hydro-treated paraffinic hydrocarbon replacement oil. For rotary vane pumps 1472100, 7739400, 7739402, 1467700, 7739401 and 7739403.

1988000—One liter.
Shipping weight 2.0 lbs. (0.9 kg)

1988001—One gallon (3.8 L).
Shipping weight 12 lbs. (5 kg)



1472500—Replacement Inlet Filter Cartridge. For 1472200. Shipping weight 0.5 lb. (0.2 kg)



1473400—Replacement Exhaust Filter. For rotary vane pumps 1472100, 7739400, 7739402, 1467700, 7739401 and 7739403. Removes oil mist and odor from pump exhaust. Ducting to outside not required. Includes filter assembly, one oil mist filter cartridge and one odor filter cartridge. Oil mist filter cartridge life is approximately one year and odor filter cartridge life is approximately six months at 1.33×10^{-2} mBar (10 microns) vacuum. Shipping weight 1.0 lb. (0.5 kg)



1473200—Replacement Oil Mist Exhaust Filter Cartridge.

For 1473400. Life is approximately one year at 1.33×10^{-2} mBar (10 microns) vacuum. Shipping weight 0.5 lb. (0.2 kg)



1473300—Replacement Odor Exhaust Filter Cartridge. For 1473400. Life is approximately one year at 1.33×10^{-2} mBar (10 microns) vacuum. Package of five. Shipping weight 0.5 lb. (0.2 kg)

Scroll

7587300—Pump Silencer. Filters exhaust while silencing exhaust pump noise. Includes filter, centering ring and clamp to attach to exhaust outlet. Shipping weight 2.0 lbs. (0.9 kg)

7587400—Pump Silencer Replacement Filter. For 7587300. Shipping weight 2.0 lbs. (0.9 kg)

7587200—Tip Seal Replacement Kit. Includes two tip seals, two o-rings, exhaust valve and spring and other small components. Shipping weight 2.0 lbs. (0.9 kg)

7587500—Bearing Replacement Service Kit. Includes contact bearings, shaft end cap, washers, screws, plugs and o-rings. Shipping weight 2.0 lbs. (0.9 kg)

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