
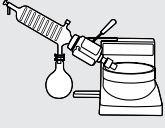



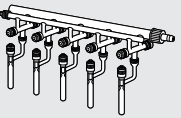

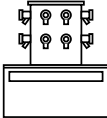





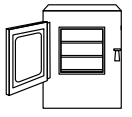



Pump Quick Selection Chart | For Common Lab Applications

| APPLICATION | WELCH VACUUM PUMPS & SYSTEMS | FLOW RATE X VACUUM | UNIT PHOTO | MODEL | PAGE |
|--|--|--|---|----------------------------|---------|
| Rotovap Volatiles, Low B.P. B.P. <100°C Samples 0-5 Liter  | Self Cleaning System with regulator, gauge, condensate jars | 35 l/min. 9 torr (12mbar) |  | 202501 | 6 - 8 |
| | DRYFAST PTFE Pump | 25 l/min. 9 torr (12mbar) | | 2034B-01 | |
| Rotovap DMF, Toluene, other non-volatiles Samples 0-5 Liter  | Self Cleaning System programmable w/condensate catchpots | 35 l/min. 2 torr (2.7mbar) |  | 202701 | 6 - 8 |
| | DRYFAST ULTRA PTFE Pump | 35 l/min. 2 torr (2.7mbar) | | 2042B-01 | |
| Concentrator DNA Pelleting SpeedVac® & CentriVap®  | DRYFAST PTFE Pump | 35 l/min. 9 torr (12mbar) |  | 2044B-01 | 15 |
| | DRYFAST ULTRA PTFE Pump | 35 l/min. 2 torr (2.7mbar) | | 2042B-01 | |
| | Welch High Capacity PTFE Pump | 100 l/min. 6 torr (8.0mbar) | | 2054B-01 | |
| Vacuum Manifold Schlenk Line  | DuoSEAL® & CHEMSTAR® Pumps | 25 l/min. <1 millitorr (1.3x10 ³ mbar) |  | 1400B-01 or 1400N-01 | 10 - 11 |
| | GEM® System | 31 l/min. 100 millitorr (0.13mbar) | | 8890A-70 | |
| Freeze Dryer  | CRVpro, Your Robust Vacuum Pump | 158 l/min. |  | 3081-01 | 16 - 17 |
| | CHEMSTAR Low RPM Pump | 160 l/min. | | 1402N-01 | |
| | Direct drive pump with integral oil filtration system | 173 l/min. | | 8917A-80 | |
| Filtration  | Welch Light Chemical Duty Pump | 37 l/min. |  | 2019B-01 | 18 - 19 |
| | DRYFAST - Chemical Duty Pump | 35 l/min. | | 2014B-01 | |
| | WOB-L - Standard Duty Pump | 45 l/min. | | 2546B-01 | |
| Aspiration/Automation Cell Harvester Plate Washer  | WOB-L - Standard Duty Pump | 100 l/min. 27.6 in. Hg (80mbar) |  | 2567B-50 | 12 - 13 |
| | DRYFAST - Chemical Duty Pump | 70 l/min. 28.5 in. Hg (47mbar) | | 2047B-01 | |
| Cell Culture Aspiration  | Welch Aspiration Station With gauge, regulator, 1200 ml autoclavable trap with liquid blockade system | 34 l/min. 27.2 in. Hg (93mbar) |  | 2515B-75 | 12 - 13 |
| Vacuum Oven Drying Degassing  | WOB-L - Standard Duty Pump | 100 l/min. |  | 2581B-50 | 22 - 23 |
| | DRYFAST - Chemical Duty Pump | 35 l/min. | | 2042B-01 | |
| | Welch High Capacity PTFE Pump | 100 l/min. | | 2054B-01 | |
| | CRVpro Pump | 160 l/min. | | 3061-01 | |
| Gel Dryer  | DRYFAST - Chemical Duty Pump | 35 l/min. |  | 2014B-01 | 14 |

Model Selectors

Look for the Model Selector Charts in each Application Section for further pump selection guidance.

Diaphragm Vacuum Pumps | DRYFAST® Chemical Duty Pumps



See specific Cat no. for specific listing.

Model 2019

Model 2014 DryFast

Models 2034 / 2044 / 2037 / 2047 DRYFAST

| Specifications | Coated Head | | Ultimate Vacuum Pressure 9 torr to 40 torr | | | |
|---|------------------------|-----------------------|--|-------------------------|-------------------------|-------------------------|
| Model | 2019 | 2014 | 2034 | 2044 | 2037 | 2047 |
| Free Air Displacement | | | | | | |
| cfm(l/min.) @60Hz | 1.3 (37) | 1.2 (35) | 0.9 (25) | 1.2 (35) | 1.8 (50) | 2.5 (70) |
| m ³ /hr(l/min.) @50Hz | 1.9 (31) | 1.75 (29) | 1.25 (21) | 1.75 (29) | 2.5 (42) | 3.5 (58) |
| Ult. Vac. Pressure, torr(mbar) | 150 (200) | 40 (53) | 9 (12) | 9 (12) | 35 (47) | 35 (47) |
| Maximum Vacuum, in. Hg | 24 | 28.3 | 29.6 | 29.6 | 28.5 | 28.5 |
| Motor Horsepower - HP(watts) | 1/15 | 1/5 (150) | 1/5 (150) | 1/5 (150) | 1/5 (150) | 1/5 (150) |
| Adjustable Vac./Gas Ballast | No | Yes | Yes | Yes | Yes | Yes |
| Tubing Needed, I.D. in.(mm) | 1/4 (7) | 1/4 (7) | 1/4 (7) | 1/4 (7) | 1/4 (7) | 1/4 (7) |
| Intake(Exhaust) Thread NPT | 1/4 NPT | M14 (1/8) | M14 (1/8) | M14 (1/8) | M14 (1/8) | M14 (1/8) |
| Weight lbs.(kg) | 10.2 (4.6) | 15.0 (6.8) | 21.25 (9.6) | 21.25 (9.6) | 21.25 (9.6) | 21.25 (9.6) |
| Overall Dimensions LxWxH in.(cm) | 8.8x5.0x8.8 (22x13x22) | 12x7.0x8.3 (31x 18x2) | 13.8x6.8x8.8 (35x17x22) | 13.8x6.8x8.8 (35x17x22) | 13.8x6.8x8.8 (35x17x22) | 13.8x6.8x8.8 (35x17x22) |
| Ship Weight, lbs.(kg) | 10.2 (4.6) | 19 (8.6) | 25 (11.3) | 25 (11.3) | 25 (11.3) | 25 (11.3) |
| Shipping Carton Dimensions LxWxH in.(cm) | 16x12x12.8 (41x30x33) | 21x14x15 (52x35x37) | 21x14x15 (52x35x37) | 21x14x15 (52x35x37) | 21x14x15 (52x35x37) | 21x14x15 (52x35x37) |
| Ordering Information | | | | | | |
| Wired for 115V, 60Hz, 1 Ph with N. Amer. 115V Plug | 2019B-01 UL | 2014B-01 CSA | 2034B-01 CSA | 2044B-01 CSA | 2037B-01 CSA | 2047B-01 CSA |
| Wired for 230V, 50/60Hz, 1Ph, w/UK and Schuko cord sets included ¹ | 2019C-02 CE | 2014C-02 CE | 2034C-02 CE | 2044C-02 CE | 2037C-02 CE | 2047C-02 CE |
| Wired for 100V, 50/60Hz for Japan | ---- | 2014C-05 | 2034C-05 | 2044C-05 | --- | --- |

Notes: 1. 230V in US also requires Cord 61-8707 2. For 8 mm Hose Barb, Order 710798

Applications

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| 1. Rotary Evaporation | 6 |
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| 5. Aspiration / Automation | 12 |
| 6. Gel Dryer | 14 |
| 7. Concentrator | 15 |
| 8. Distillation | 6 - 9 |

DryFast Diaphragm Vacuum Pumps

- Chemical Resistant
- Oil Free

Tuneable Vacuum

Model 2019 PTFE coated head for filtration of moderate solvents

DRYFAST models 2014, 2034, 2044, 2037, 2047 & DryFast Ultra models 2032, 2042. All major parts in contact with vapor are constructed of corrosion resistant PTFE and perfluoro plastic materials. Models comes standard with tuneable vacuum control.

Model 2163 Coated heads for moderate solvent vapors

Models 2052, 2054, 2062, 2064 & 2067 Wetted parts are made of PTFE and other fluorinated plastics. High flow models are commonly used for scale-up operations.



Diaphragm Vacuum Pumps | DRYFAST® Chemical Duty Pumps



**Models
2032 / 2042
DRYFAST Ultra**



**Models
2052 / 2054**



**Models
2163 / 2062 / 2064 /
2067**

| Coated Heads | Flow Rate > 100 L/min | | | | Ultimate Vacuum Pressure ≤ 2 torr | | | |
|-------------------------------|-------------------------------|-------------------------------|-------------------------------|----------------------------|-----------------------------------|-----------------------------|----------------------------|--|
| 2163 | 2054 | 2064 | 2067 | 2032 | 2042 | 2052 | 2062 | |
| 6.1 (173) | 3.4 (100) | 6.1 (173) | 7.8 (221) | 0.9 (25) | 1.2 (35) | 2.3 (65) | 4.2 (119) | |
| ---- | ---- | ---- | ---- | 1.25 (21) | 1.75 (29) | ---- | ---- | |
| 6 (8) | 6 (8) | 6 (8) | 56 (75) | 2 (2.7) | 2 (2.7) | 1.5 (2) | 1.5 (2) | |
| 29.7 | 29.7 | 29.7 | 27.72 | 29.85 | 29.85 | 29.9 | 29.9 | |
| 0.5/0.6 (370/440) | 1/2 (370) | 0.5/0.6 (370/440) | 0.5/0.6 (370/440) | 1/5 (150) | 1/5 (150) | 0.53 (390) | 0.53 (370) | |
| No | No | No | No | Yes | Yes | No | No | |
| hose connector available | 1/4 (8) | hose connector available | hose connector available | 1/4 (7) | 1/4 (7) | 1/4 (8) | 1/4 (8) | |
| NW 16 - 1/4" NPT ² | NW 16 - 1/4" NPT ² | NW 16 - 1/4" NPT ² | NW 16 - 1/4" NPT ² | M14(1/8) | M14(1/8) | NW 16 - 1/4" NPT | NW 16 - 1/4" NPT | |
| 72.3 (32.8) | 40.3 (18.3) | 72.3 (32.8) | 72.3 (32.8) | 21.25 (9.6) | 21.25 (9.6) | 40.3 (18.3) | 72.3 (32.8) | |
| 21x11x12 (53x28x31) | 9x15x7 (23x38x18) | 21x11x12 (53x28x31) | 21x11x12 (53x28x31) | 13.8x6.8x8.8 (35x17x22) | 13.8x6.8x8.8 (35.2x17x22) | 9x15x7 (23x38x18) | 21x11x12 (53x28x31) | |
| 88.2 (40.1) | 48.5 (22) | 88.2 (40.1) | 88.2 (40.1) | 25 (11.3) | 25 (11.3) | 49.8 (22.6) | 40.3 (18.3) | |
| 23.6x15.8x16.1 (60x40x41) | 18.9x12.6x11.8 (48x32x30) | 23.6x15.8x16.1 (60x40x41) | 23.6x15.8x16.1 (60x40x41) | 21x14x15 (52x35x37) | 21x14x15 (52x35x37) | 10.2x16.6x7.5 (26x42x19) | 9.1x15x6.7 (23x38x16.9) | |
| 2163B-01 CE | 2054B-01 CE | 2064B-01 CE | 2067B-01 CE | 2032B-01 CSA | 2042B-01 CSA | 2052B-01 CE | 2062B-01 CE | |
| 2163C-02 CE | 2054C-02 CE | 2064C-02 CE | 2067C-02 CE | 2032C-02 CE | 2042C-02 CE | 2052C-02 CE | 2062C-02 CE | |
| ---- | ---- | ---- | ---- | 2032C-05 | 2042C-05 | ---- | ---- | |

For a Complete System

Inlet/Exhaust Separator Jars
230 ml glass jar assembly attaches to pump intake or exhaust to capture ingested liquids. See page 79 for replacement Jars.



1423B

| Pump Model | CAT. No. |
|--------------------|----------|
| All DryFast models | 1423B |

Digital Vacuum Regulator

- Rack mountable
- Variable vacuum control

The Digital Vacuum Regulator works with Welch DryFast™ pumps or any brand dry pump with flow up to 35 l/min torr vacuum ranging from 1 torr(1.3 mbar) to atmosphere. See p. 76 for more information.



| Pump Model | CAT. No. |
|------------------------------|----------|
| 2014, 2034, 2032, 2044, 2042 | 1640A-01 |



| Component | page |
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