

# Welch® Chemical Duty, Dry (Oil-Free) diaphragm vacuum pumps

**Known world-wide for speed, ease of use and long service intervals**



DryFast Collegiate

DryFast Research, Ultra

2052, 2054 (4 head)

2062, 2064, 2067 (8 head)

Welch Chemical Duty vacuum pumps use dry, oil-free membrane (diaphragm) technology to deliver faster pumping dynamics that support filtration, evaporation, drying, degassing, impregnation, and other rough vacuum applications.

There are twelve models available, with free air displacement from 0.8 cfm to 7.8 cfm, and ultimate vacuum pressure as deep as 1.5 torr. All have strong pumping dynamics to near their ultimate vacuum pressure.

DryFast family models are CSA certified; 4-head and 8-head models are cUL listed. All have 1PH motors with built in thermal protection.

Welch Chemical Duty dry vacuum pumps can be used for vacuum degassing, vacuum impregnation, rotary evaporators, vacuum ovens, vacuum filtering, solid phase extraction, falling film evaporators, rough vacuum distillations, gas recycling, leak detection, gas sampling and many other laboratory and industrial applications. 1.5/2.0 torr models can strip DMF @ 35C or be used with vacuum ovens. Contact your local Welch representative for expert support in selecting the best model for you specific application/sample composition requirements.

- ✓ BUILT IN VACUUM CONTROLLERS (DryFast)
- ✓ VACUUM CONTROLLERS AVAILABLE (4, 8-head)
- ✓ FASTER TO EVACUATE, STRIP, EVAPORATE, DEGAS, GAS SAMPLE, DRY, OR FILTER
- ✓ LONG LASTING MEMBRANES, EASY TO REBUILD
- ✓ SOLID PTFE HEADS, PTFE MEMBRANES
- ✓ FAST DELIVERY
- ✓ EXPERT SUPPORT
- ✓ CSA OR cUL CERTIFICATIONS
- ✓ THE RIGHT VACUUM PUMP FOR YOUR APPLICATION

**Depend on Welch for durable vacuum pumps with highest performance**

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**WELCH**

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Model 2019



DryFast models 2014



DryFast models  
2034/2044/2037/2047



DryFast models  
2032/2042/2040

## CHEMICAL DUTY DIAPHRAGM VACUUM PUMP

SPECIFICATIONS	ULTIMATE VACUUM PRESSURE 9 TO 40 TORR							FLOW RATE >100 L/MIN
	2019	2014	2034	2044	2037	2047	2054	
Model	2019	2014	2034	2044	2037	2047	2054	
Free Air Displacement @60Hz, cfm (L/min)	1.3 (37)	1.2 (35)	0.9 (25)	1.2 (35)	1.8 (50)	2.5 (70)	3.4 (100)	
Ult. Vac. Pressure, Torr	150	40	9	9	35	35	6	
Maximum Vacuum, in. Hg	24	28.3	29.6	29.6	28.5	28.5	29.7	
Motor Horsepower, HP (watts)	1/15	1/5 (150)	1/5 (150)	1/5 (150)	1/5 (150)	1/5 (150)	½ (230)	
Head Material	PTFE-coated	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	
Diaphragm	PTFE Liner	Molded PTFE-coated	Flat PTFE-coated					
Valves	Stainless Steel	FFKM	FFKM	FFKM	FFKM	FFKM	PEEK	
Advanced Vapor Management (AVM)	No	Yes	Yes	Yes	Yes	Yes	No	
Gas Ballast	No	No	No	No	No	No	Yes	
Tubing Needed, I.D. in. (Inlet/Exhaust)	1/4	1/4	1/4	1/4	1/4	1/4	w 1/4" in. hose connector <sup>2</sup>	
Intake (Exhaust) Thread NPT	1/4" NPT	M14/(1/8)	M14/(1/8)	M14/(1/8)	M14/(1/8)	M14/(1/8)	NW16- 1/4" NPT	
Weight, lbs.	10.2	15.0	21.25	21.25	21.25	21.25	40.3	
Overall Dimensions LxWxH in.	8.8 x 5 x 8.8	12 x 7.0 x 8.3	13.8 x 6.8 x 8.8	9 x 15 x 7				
Ship Weight, lbs	14.2	19	25	25	25	25	48.5	

## ORDERING INFORMATION

MODEL	2019	2014	2034	2044	2037	2047	2054
Wired for 115V, 60hz, 1Ph With N. Amer. 115V Plug	2019B-01 UL	2014B-01 CSA	2034B-01 CSA	2044B-01 CSA	2037B-01 CSA	2047B-01 CSA	2054B-01 cUL
Explosion proof Motor, 115/230V 60Hz 1Ph <sup>1</sup>	-	-	-	-	-	-	-

Notes:  
 1. Explosion proof motor (CSA, UL) is Class I, Div. 1, Groups C&D and Class II, Div I Groups E, F & G.  
 2. For Models 2052, 2054, manual vacuum level control use chemical resistant, vacuum bleed valve regulators with stainless steel gauges, polypropylene construction with PVDF hose barb for 1/4" ID vacuum hose.



Models 2054/2052



Models 2062/2064/2067



Model 2090



Model 2085

FLOW RATE >100 L/MIN		ULTIMATE VACUUM PRESSURE <2 TORR					PUMPS WITH EXPLOSION PROOF MOTORS	
2064	2067	2032	2042	2040	2052	2062	2090	2085
6.1 (173)	7.8 (221)	0.9 (25)	1.2 (32)	1.4 (40)	2.3 (65)	4.2 (119)	4.5 (127)	6.9 (195)
6	56	2	2	0.75	1.5	1.5	20	100
29.7	29.7	29.85	29.85	29.89	29.85	29.85	29.1	26
0.6 (440)	0.6 (440)	1/5 (150)	1/5 (150)	1/5 (150)	0.53 (390)	0.6 (440)	1/2 (373)	1/2 (373)
PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE-coated	PTFE-coated
Flat PTFE-coated	Flat PTFE-coated	Molded PTFE-coated	Molded PTFE-coated	Molded PTFE-coated	Molded PTFE-coated	Molded PTFE-coated	PTFE Liner	PTFE Liner
PEEK	PEEK	FFKM	FFKM	FFKM	PEEK	PEEK	Stainless Steel	Stainless Steel
No	No	Yes	Yes	Yes	No	No	No	No
Yes	Yes	No	No	No	No	No	No	No
w/ 1/4" in. hose connector <sup>2</sup>	w/ 1/4" in. hose connector	1/4	1/4	1/4	w/ 1/4" in. hose connector	w/ 1/4" in. hose connector	See Note 3	See Note 3
NW16- 1/4" NPT	NW16- 1/4" NPT	M14/(1/8)	M14/(1/8)	M14(1/8)	NW16- 1/4" NPT	NW16- 1/4" NPT	NW-25-3/8 NPT	NW-25-3/8 NPT
72.3	72.3	21.25	21.25	21.25	40.3	72.3	54	54
21 x 11 x 12	21 x 11 x 12	13.8 x 6.8 x 8.8	13.8 x 6.8 x 8.8	13.8 x 6.8 x 8.8	9 x 15 x 7	21 x 11 x 12	24.6 x 11.3 x 11.3	27 x 11.3 x 11.3
88.2	88.2	25	25	25	48.5	88.2	59	59

2064	2067	2032	2042	2040	2052	2062	2090	2085
2064B-01 cUL	2067B-01 cUL	2032B-01 CSA	2042B-01 CSA	2040B-01 CSA	2052B-01 cUL	2062B-01 cUL	-	-
-	-	-	-	-	-	-	2090W-01 cUL	2085W-01 cUL

Notes:  
 2. For models 2090 & 2085, tubing options are NW25 metal hose (2 m, cat. no. 710776) or gum rubber hose (5 feet hose, cat. no. 331060-5, NW25 to 13/16" ID rubber hose adapter, cat. no. 501283, with NW25 clamp cat. no. 302202, NW25 and centering ring cat. no. 303102). For manual vacuum level control use chemical resistant, vacuum bleed valve regulator (cat. no. 2090K-05) with dial vacuum gauge.

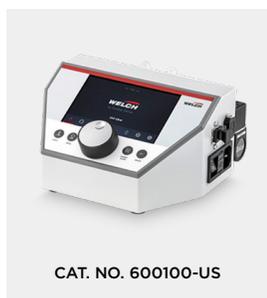
## MODEL 1640 DIGITAL VACUUM REGULATOR



- ✓ Controls and reads vacuum level from 700 to 2 Torr. Flows to 40 L/min
- ✓ Two-point vacuum control via in-line PTFE solenoid valve
- ✓ Internal chemically resistant, piezoelectric sensor

A membrane keypad and intuitive menu enable easy vacuum control via process time and vacuum pressure set points. User designates 1 or 2 point vacuum level set points to control vacuum levels for a designated timed runs for up to five programs. Bench or rack mountable using thumbscrew fitting. Connect pump and apparatus using 1/4" ID tubing. Vacuum pressure units of Torr, mbar, and pascal. Dimensions LxWxH in. 7.3x5.2x5.6 in. Weight 2 lbs. 115/230V 50/60Hz 1Ph.

## MODEL VCPRO 601 VACUUM CONTROLLER



- ✓ Controls and reads vacuum level from 825 to 1 Torr. Flows to 100 L/min
- ✓ Two-point vacuum control via in-line PTFE solenoid valve
- ✓ Internal chemically resistant, ceramic thick film hybrid

Intuitive ICON-navigation of control screens enable easy vacuum control via process time and vacuum pressure set points. Analog and digital display of pressure. The built-in software offers user setting up to 20 set-points with a timed ramp that allows lowering and raising pressure. Connectivity to a PC is done through LAN and RS232. Bench mountable. Connect pump and apparatus using 1/4" ID tubing. Vacuum pressure units of Torr, mbar, and pascal. Dimensions LxWxH in. 7.7x7x4.1 in. Weight 3.3 lbs. 115/230V 50/60Hz 1Ph.

## ADVANCED DESIGNS OF CHEMICAL DUTY, OIL-FREE VACUUM PUMPS

### DRYFAST® CHEMICAL DUTY VACUUM PUMPS



- Incredible strip rates for DMF at 2 to 7 ml/min at rotovap bath temperature of 35 °C
- Flow rates to 70 L/min
- Long membrane life
- Quiet operation
- Advanced Vapor Management, (AVM) control on from of pump
- High compression ratio from a dual stage pump ultimate vacuum 2.0 Torr

### HIGH CAPACITY 4 AND 8 HEAD CHEMICAL DUTY PUMPS



- Flow rates up to 221 l/min
- Ultimate vacuum pressure to 1.5 Torr
- Easy access to gas ballast valve
- Long membrane life
- All pumps are supplied with TEFC motors

### EXPLOSION PROOF OIL-FREE FOR CHEMICAL APPLICATIONS



- Two models rated at 127 and 195 L/min
- Class 1, Group C & D, Class II, Group E, F & G
- Ultimate vacuum pressure to 25 Torr
- Long membrane life
- Portable