

Rugged Belt Drive Vacuum Pumps | DUOSEAL®



**Model
1400**



**Models
1405 / 1402**



**Model
1376**



**Models
1397 / 1374**



Specifications

Two-Stage Vacuum Pumps

WELCH Model	1400	1405	1402	1376	1397	1374
Free Air Displacement						
cfm	0.9	3.2	5.6	10.6	17.7	23
l/min.	25	90	160	300	500	650
Ult. Vac. Pressure, torr(mbar) ^{1,2}	1 x 10 ⁻⁴ (0.00013)	1 x 10 ⁻⁴ (0.00013)	1 x 10 ⁻⁴ (0.00013)	1 x 10 ⁻⁴ (0.00013)	1 x 10 ⁻⁴ (0.00013)	1 x 10 ⁻⁴ (0.00013)
Gas Ballast	Yes	Yes	Yes	Yes	Yes	Yes
Discharge Pressure(PSIG)	---	---	---	---	---	---
Pump RPM	580	525	525	525	400	510
Motor Horsepower (watts)	1/3(250)	1/2(370)	1/2(370)	1(750)	1(750)	1-1/2(1120)
Oil Capacity, qt.(liters)	0.62(0.59)	2.25(2.1)	2.25(2.1)	2.5(2.4)	1.25(1.2)	1.25(1.2)
Tubing Needed, I.D. in.	7/16(11)	7/16(11)	13/16(21)	13/16(21)	1-5/8(41)	1-5/8(41)
Intake, Nipple Thread	3/4-20	1-20	1-20	1-20	1.75-20	1.75-20
Exhaust, Thread Type	3/4-20	1-20	1-20	1-20	1.75-20	1.75-20
Weight, lbs. (kg)	58(26)	112(51)	112(51)	156(71)	205(93)	220(100)
Overall Dimensions						
LxWxH in.(cm)	17.8x9x12.6 (45.1x32.1x31.8)	20x12x15 (51x30.5x60)	20x12x15 (51x30.5x60)	20x14.1x15.4 (51x35.9x39)	26x13.7x18.8 (66x34.8x47.6)	26x13.7x18.8 (66x34.86x47.6)
Ship Weight, lbs.(kg)	70(31.8)	132(60)	132(60)	180(81.8)	213(96.8)	215(97.7)
Shipping Carton Dimensions						
LxWxH in.(cm)	20.5x13.8x14.5 (52.1x35.1x36.8)	22.5x15.5x19.5 (57.2x39.4x49.5)	22.5x15.5x19.5 (57.2x39.4x49.5)	22x18x19 (55.9x45.7x48.3)	27.3x18x22 (69.3x45.7x55.9)	27.3x18x22 (69.3x45.7x55.9)

Ordering Information ^{3,4}

Wired for 115V, 60Hz, 1 Ph with N. American 115V Plug	1400B-01	1405B-01	1402B-01	1376B-01	1397B-01	1374B-01
Wired for 230V, 60Hz, 1 Ph with N. American 230V Plug	1400C-01	1405C-01	1402C-01	---	---	---
Wired for 220V, 50Hz, 1 Ph w/Cont. Euro. (Schuko) Plug	1400C-02	1405C-02	1402C-02	1376C-03	1397C-03	---
Explosion Proof Motor, 115V, 60 Hz	1400W-01	1405W-01	1402W-01	---	---	---
3-Phase Motor 230V, 460V, 60Hz	---	---	1402M-01	1376M-01	1397M-01	1374M-01

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DuoSEAL Pumps

Rugged oil-seal pumps for a wide variety of vacuum needs, including Schlenk drying lines, freeze drying, degassing, concentrations, distillations, and more. Pulley drive enables low pump rpm operation – reduces friction, oil temperature, and oil degradation. Large oil reservoir minimizes contamination effects and extends maintenance intervals. Use of a cold trap is recommended to protect the pump and enhance vacuum levels.



Refrigeration Servicing Pumps

Special Welch DuoSEAL pumps are fitted with componentry designed to withstand refrigerant contact. Models 1402B-46 and 1397B-46 include integrated handles.

Notes:

- Two-stage pumps should not be operated continuously at pressures above 10 torr. Ultimate pressure measured with a trapped McCleod gauge.
- One-stage pumps should not be operated continuously at pressures above 50 torr.

Rugged Belt Drive Vacuum Pumps | DUOSEAL[®], CAPTURE



**Model
1399N**



**Model
1402B-46**



**Model
1376B-46**



**Model
CRR-1A**

One-Stage Vacuum Pumps		Refrigeration Servicing Pumps			CAPTURE Refrigerant Recovery
w/o plate	w/bell jar plate				
1399	1399N	1402B-46	1376B-46	1397B-46	CRR-1A
1.2	1.2	5.6	10.6	17.7	10.6
35	35	160	300	500	300
1.5 x 10 ⁻² (0.019)	1.5 x 10 ⁻² (0.019)	1 x 10 ⁻⁴ (0.00013)	1 x 10 ⁻⁴ (0.00013)	1 x 10 ⁻⁴ (0.00013)	3x10 ⁻² (0.04)
No	No	Yes	Yes	Yes	---
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750	750	525	525	400	525
1/3(250)	1/3(250)	1/2(370)	1(750)	1(750)	1(750)
0.5(0.47)	0.5(0.47)	2.25(2.1)	2.5(2.4)	1.25(1.2)	2.5(2.4)
7/16(11)	7/16(11)	13/16(21)	13/16(21)	1-5/8(41)	---
3/4-20	3/4-20	1-20	1-20	1.75-20	1 NPT
3/4-20	3/4-20	1-20	1-20	1.75-20	1 NPT
51(23)	63(28.6)	112(51)	156(71)	205(93)	122(55.4)
17x9x10 (43.x22.9x25.42)	17x9x10 (43.x22.9x25.42)	20x12x15 (51x30.5x60)	20x14.1x15.4 (51x35.9x39)	26x13.7x18.8 (66x34.8x47.6)	19.25x12.3x11.1 (48.9x31.3x28.1)
62(28.2)	74(33.6)	132(60)	180(81.8)	213(96.8)	136(61.8)
20.5x13.8x14.5 (52.1x35.1x36.8)	20.5x13.8x14.5 (52.1x35.1x36.8)	22.5x15.5x19.5 (57.2x39.4x49.5)	22x18x19 (55.9x45.7x48.3)	27.3x18x22 (69.3x45.7x55.9)	22x14.8x18 (55.9x37.6x45.7)
1399B-01	1399N-01	1402B-46	1376B-46	1397B-46	CRR-1A
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1399C-02	---	1402C-46	1376C-46	1397C-46	CRR-1B
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- All 115V and 230V single phase motors include thermal overload protection.
- Models 1400C-02, 1405C-02 and 1402C-02 provided with CE marking.
- Conduit wiring installation required. No cord, plug or switch provided.
- CSA approved models are 1400B-80, 1405B-80 and 1402B-80.

DuoSeal[™] Vacuum Pump Oil

Tested to high vacuum levels, this oil meets rigid requirements for vapor pressure, stability and viscosity.

Size	CAT. No.
Quart	1407K-11
Gallon	1407K-15
5 Gallon	1407K-20



Exhaust Filter

A replaceable filter element captures oil mist from the exhaust port of the pump and reduces pump noise.



Pump	CAT. No.
1399, 1400	1417
1376, 1402, 1405	1417P-10
1397, 1374	1417P-20

For a Complete System

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