

Apply deep vacuum to your system in the toughest conditions. CHEMSTAR® pumps are built to withstand corrosive chemical vapor environments - durable performance over the long haul. CHEMSTAR® is designed to minimize the effects of harmful chemicals:

## Rugged Rotary Vane Design

Built to the renowned performance standards of Welch DuoSEAL® pumps, CHEMSTAR® utilizes vapor contact components that are tough and chemical resistant. The belt-drive mechanism gears the pump down, enabling slow pump operation to reduce friction and keep operating temperatures low.

## Lubrication System

The oil capacity is large for excellent dilution of contaminants. Oil is fed to the pump from the top of the reservoir, allowing sludge to settle without compromising lubrication. The recommended lubricant ("Gold Oil") is a synthetic oil designed to reduce chemically active sites. Use the nitrogen purge to drive elimination of corrosive gases.

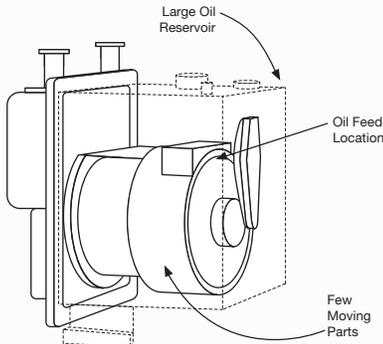
## Key Accessories

Welch also provides the system add-ons that further protect your pump and your environment. Select the equipment that augments your vacuum system needs -traps, oil mist eliminators, and system components.

## The Five Defining Features Needed For Pumping Corrosive Gases

### 1. High Contamination Tolerance

- Contaminants diluted
- Fewer moving parts
- Top oil feed for cleaner oil



### 2. Vital Parts Corrosion Resistant

- Fluoroelastomer seals and gaskets
- PTFE
- Stainless Steel
- Nickel Plated or Anodized
- Chemical Resistant Grade of Cast Iron

### 3. Reduced Frictional Wear

- Less than 580 RPM vs. typical 1750 RPM direct drive

### 4. Nitrogen Purge Standard

- Degasses and cools oil

### 5. Easy Attachment of Accessories

- Complete accessory package for corrosive gases

## For Pumping Corrosive Gases

- HCl
- O<sub>3</sub>
- H<sub>2</sub>SO<sub>4</sub>
- HBr
- HOAc
- SO<sub>x</sub>
- Br<sub>2</sub>
- F<sub>3</sub>CCO<sub>2</sub>H
- H<sub>2</sub>S
- Cl<sub>2</sub>
- CH<sub>2</sub>O
- HNO<sub>3</sub>
- SF<sub>6</sub>, CF<sub>4</sub> Fragments and other gases



**Model 1402N**

**Specifications & Ordering - See Below**

## Specifications

Welch Model	1400N	1402N	1376N
Free Air Displacement			
cfm (l/min.)@60 Hz	0.9	5.6	10.6
m <sup>3</sup> /hr (l/min.)@50 Hz	25	160	300
Ultimate Pressure, torr(mbar) <sup>1</sup> .	1 x 10 <sup>-4</sup> (0.00013)	1 x 10 <sup>-4</sup> (0.00013)	1 x 10 <sup>-4</sup> (0.00013)
Gas Ballast	Yes	Yes	Yes
Pump RPM	580	525	525
Motor Horsepower (watts)	1/3(250)	1/2(370)	1(750)
Oil Capacity, qt.(liters)	0.62(0.59)	2.25(2.1)	2.5(2.37)
Tubing Needed, I.D. in.	7/16(11)	13/16(21)	13/16(21)
ISO Exhaust & Intake Flange <sup>5</sup>	NW 16	NW 25	NW 25
Overall Dimensions LxWxH in.(cm)	17.8x9x12.6 (45.2x22.9x32)	19.3x14.1x15.4 (49x35.3x39.1)	19.3x12.3x15.6 (49x31.2x39.6)
Weight, lbs.(kg)	58(26)	112(51)	156(71)
Ship Weight, lbs.(kg)	71(32.3)	133(60.5)	181(82.3)
Shipping Carton Dimensions LxWxH in.(cm)	20.5x13.8x14.5 (52.1x35.1x36.8)	22.5x15.5x19.5 (57.2x39.4x49.5)	22x18x19 (59.5x45x48)

## Ordering Information<sup>2,4</sup>

Wired for 115V, 60Hz, 1 Ph w/N. American 115V Plug	1400N-01	1402N-01	1376N-01
Explosion Proof Motor 115V, 60Hz, 1 Ph	1400N-90 <sup>3</sup>	1402N-90 <sup>3</sup>	---
Wired for 230V, 60Hz, 1 Ph w/ N. American Plug	---	1402N-60	1376N-60
Wired for 220V, 50Hz, 1 Ph w/ Cont. Euro. (Schuko) Plug	1400N-50 <sup>6</sup>	1402N-50 <sup>6</sup>	1376N-49
Wired for 100V, 50/60Hz, 1 Ph for Japan	1400N-53	1402N-53	1376N-53

## Notes:

1. CHEMSTAR pump should not be operated continuously at pressures above 10 torr. Ultimate pressure measured with a trapped McCleod gauge.
2. All single phase motors have overload protection.
3. Conduit wiring installation required. No cord, plug or switch provided.
4. Hinged clamp, centering ring assembly and hose adapter are included with all CHEMSTAR Pumps.
5. Standard filter option possible if the exhaust flange is removed, but not chemically resistant.
6. Units supplied with CE marking.