

# Oil Rotary Vacuum Pump VD301/VD401

As concern grows for improving the quality of the workplace environment, vacuum pumps are being required to operate at lower noise levels. The VD Series of oil-sealed rotary pumps use a direct-drive, low-noise motor specially developed in response to this growing demand for quieter operation. Additionally, this pump design emphasizes ease of maintenance, which makes routine inspection and repair extremely easy.

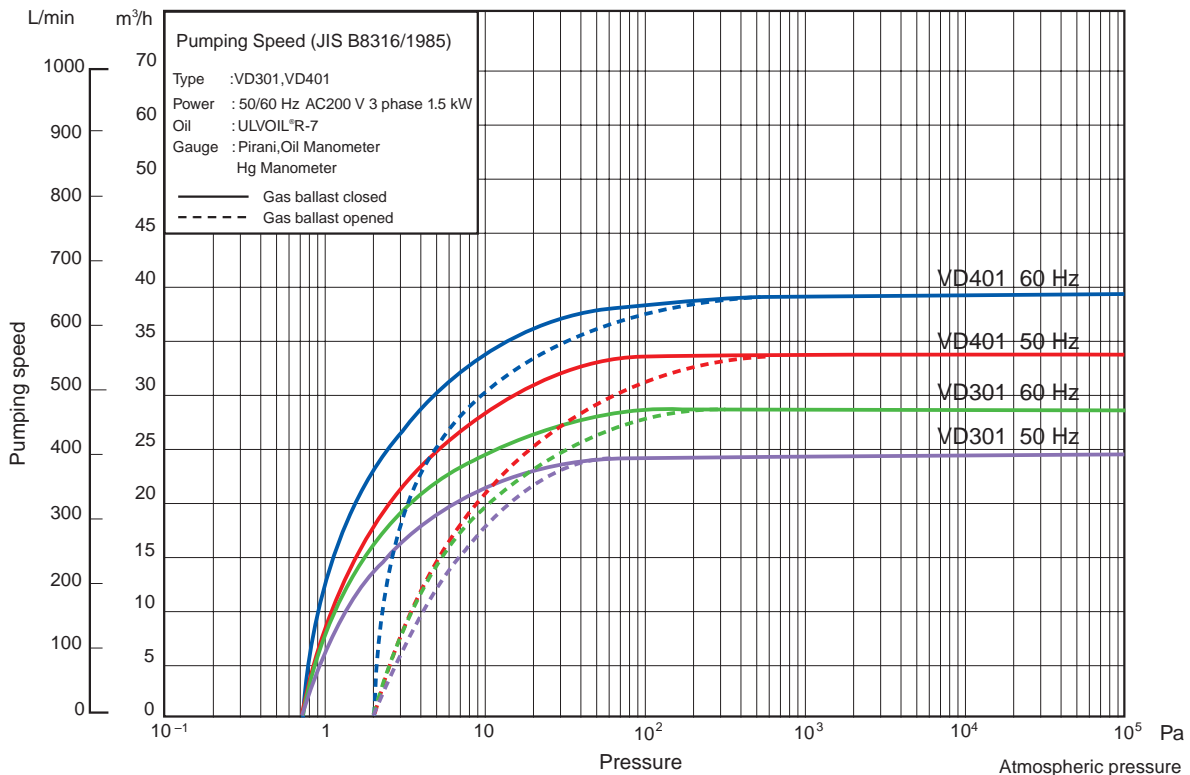
These oil-sealed rotary vacuum pumps can be used for a wide range of applications ranging from laboratories to various types of production lines, where quiet operation is particularly important.



## Features

- Quiet-running performance (Pat. pending)**  
 Designed for quiet operation, the precision manufacturing of this pump results in low noise levels of 59 dB (characteristic A) for model VD301 and 61 dB (characteristic A) for model VD401. (Values are measured at ultimate pressure, without using an oil mist trap, at a distance of 1 meter in front of the pump.)
- Outstanding ease of maintenance**
  - The pump body can be removed without disconnecting the vacuum pipes so that overhauling and changing oil can be easily performed. (Pat. pending)
  - Checking, adding, and changing oil are done at the same location on the pump to facilitate greater ease in performing routine maintenance and inspection.
  - A variable oil capacity system allows the oil capacity to be changed over a range of 1.0 to 2.5 liters to extend the amount of time between oil additions.

## Pumping Speed Curve



\* These are representative curves based on actual measurement data.

**Compatible with continuous operation at high pressures**

A forced oil circulation system inside the pump allows stable operation even at high inlet pressures. When equipped with the optional oil mist trap and oil return mechanism, these heat-resistant pumps can run continuously at pressures equal to or below atmospheric pressure.

**Applications**

- Evaporation, sputtering, and ion plating
- Gas substitution, back-filling and vacuum insulation
- Vacuum drying, freeze drying and vacuum degassing
- Analytical instruments and leak testers
- Vacuum packing, vacuum adsorption and transport, vacuum molding and vacuum casting

**Specifications**

Item	Model	VD301	VD401
Designed pumping speed m <sup>3</sup> /h (L/min)	50 Hz	30 (500)	40 (670)
	60 Hz	36 (600)	48 (800)
Ultimate pressure* <sup>1</sup>	Pa	6.7 x 10 <sup>-1</sup>	
Motor* <sup>2</sup>	Type	Drip-proof protected motor	
	kW (poles)	1.5 (4)	
	Voltage/ Frequency	200 V/50, 60 Hz 220 V/60 Hz	
Oil capacity	L	1.0-2.5	
Pump oil* <sup>3</sup>		ULVOIL® R-7	
Cooling method		Air cooled	
Suction port diameter	JIS B2290	VG40 or equivalent	
Exhaust port diameter	JIS B2290	VG40 or equivalent	
Weight* <sup>4</sup>	kg	59 (29)	61 (31)
Dimensions L x W x H* <sup>5</sup>	mm	620 x 240 x 325	640 x 240 x 325
Standard accessories		Directly coupled motor, oil (for 1 pump), operation manual	
Options		TM401 oil mist trap for high gas throughput TM201 oil mist trap for low gas throughput Gas ballast valve Oil return mechanism	

Note: SI units are used in this catalog. The following conversion can be used for non-SI units:

Ultimate pressure: 6.7 x 10<sup>-1</sup> Pa = 5 x 10<sup>-3</sup> Torr

\* 1 Measured with a Pirani gauge (Approx. 6.7 x 10<sup>-2</sup> Pa when measured with a McLeod vacuum gauge)

\* 2 Options: The pump is also compatible with a fully sealed external fan motor, increased safety explosion-resistant motor, and pressure resistant explosion-resistant flange motor.

Compatible with totally-enclosed fan-cooled motor, explosion-proof motor and flange motor as an option.

\* 3 Other oil types are available, upon request.

\* 4 Values in parentheses indicate the weight of the pump unit only.

\* 5 L=length, W=width, and H=height

**External Dimension Diagram (unit:mm)**

