

Oil Rotary Vacuum Pump VS1501/VS2401

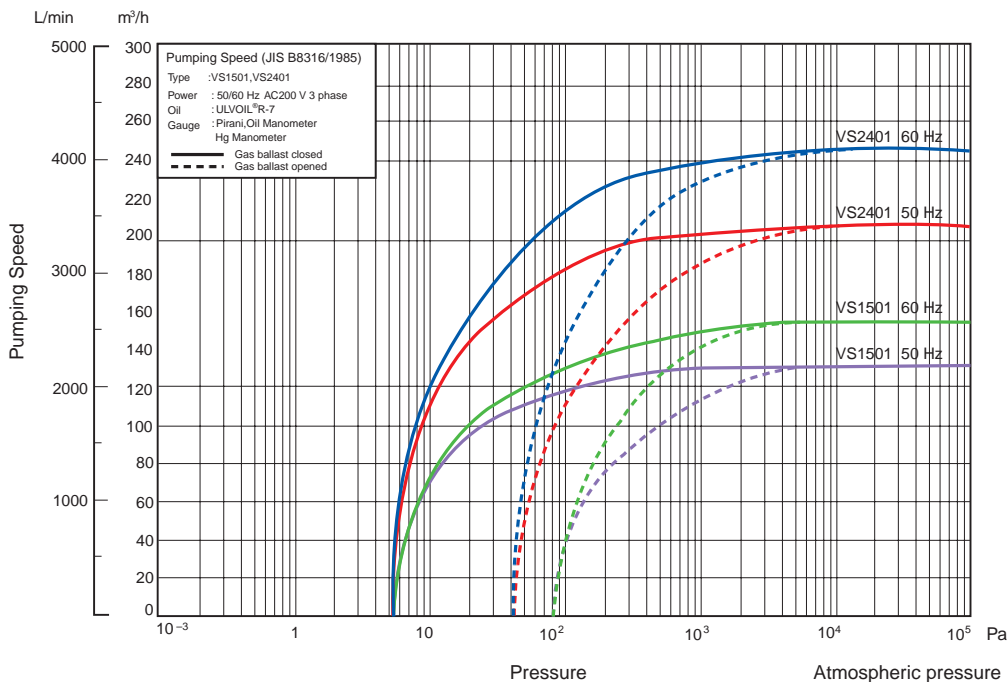
The VS Series of oil rotary vacuum pumps uses a single-stage design in the pumping system, coupled with a direct-drive motor. This simplified design gives this lightweight pump the features of compact size along with low vibration operation. The substantial reduction in vibration of this pump can help reduce the costs associated with having to perform special foundation work in facilities where vibration can be a problem. Additionally, enhancements in both the oil circulation and cooling systems results in increased stability of pumping performance at high inlet pressures. These VS Series pumps are typically employed in a wide range of applications, especially those having a large number of repetitive pumping steps that cycle from atmospheric pressure, such as in the automated leak testing of parts.



Features

- Low vibration**
 The special single-stage vane design employed in this pump permits the use of a high-speed motor (1500 rpm at 50 Hz) that helps to significantly reduce vibration levels in the low frequency range of the spectrum, where the transmission of vibrations through buildings can be a problem. This pump can largely eliminate the need for special foundation work and can be more easily installed on the upper floors of most buildings.
- Lightweight and compact**
 Compared to our standard oil rotary type pumps, the VS2401 is roughly 35 % lighter, requires roughly 20 % less floor space, and is only half as tall, making it extremely lightweight and compact.
- Compatible with continuous operation at high pressures (patent pending)**
 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.

Pumping Speed Curve



• Quiet-running performance

The use of a mechanism that reduces operating noise when pumping at ultimate pressure, allows noise levels to be reduced to 74 dB (characteristic A) for both the VS1501 and VS2401 models. (Values measured at ultimate pressure while using an oil mist trap at a distance of 1 meter to the side of the pump.)

• Outstanding ease of maintenance

- 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 oil capacity to be changed over a range of 8 to 10.5 liters to extend the amount of time between oil additions.

Specifications

Item	Model	VS1501	VS2401
Design pumping speed m ³ /h (L/min)	50 Hz	150 (2500)	240(4000)
	60 Hz	180 (3000)	288 (4800)
Ultimate pressure* ¹	Pa	5.3	
Motor* ²	Type	Drip-proof protected motor	
	kW (poles)	5.5 (4)	7.5 (4)
	Voltage/Frequency	200 V/50, 60 Hz 220 V/60 Hz	
Oil capacity	L	8.0-10.5	
Pump oil* ³		ULVOIL® R-7	
Cooling water	Pressure MPa	0.3 (Gauge pressure) or higher	
	Quantity L/min	4	5
Suction port diameter	JIS B2290	VG80 or equivalent	
Exhaust port diameter	JIS B2290	VG50 or equivalent	
Weight* ⁴	kg	240	280
Dimensions	L x W x H* ⁵ mm	940 x 352 x 460	1062 x 352 x 460
Standard accessories		Directly coupled motor, oil (for 1 pump)	
Options		Oil mist trap Gas ballast valve Oil return mechanism Heat-resistant specifications	

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

Ultimate pressure: 5.3 Pa=4 x 10⁻² Torr. Cooling water pressure: 0.3 MPa=3 kg/cm²

* 1 Measured with a Pirani gauge (Approx. 6.7 x 10⁻² 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.

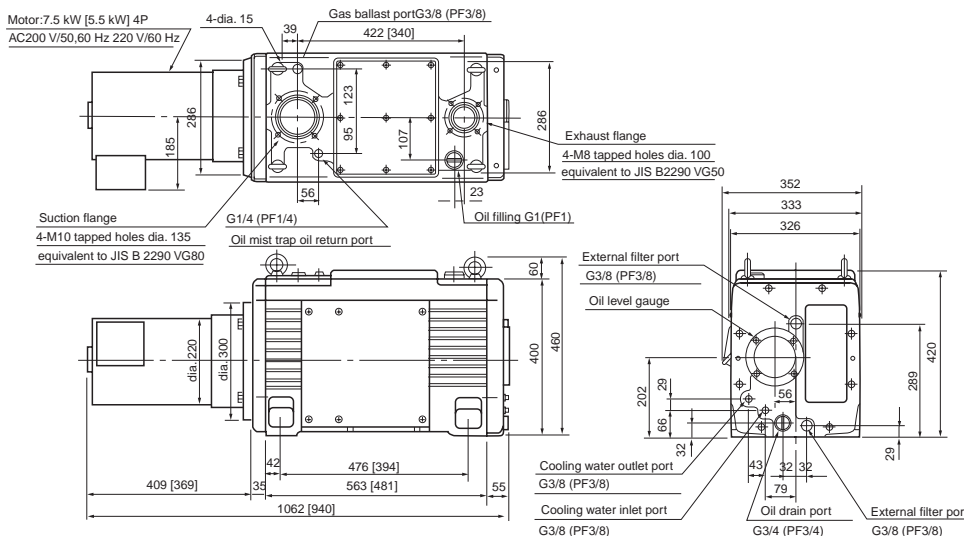
* 5 L=length, W=weight, and H=height

Applications

- Evaporation, sputtering, ion plating
- Vacuum packing, vacuum adsorption and transport
- Vacuum molding and vacuum casting
- Vacuum heat treatment furnaces, sintering furnaces, and brazing furnaces
- Vacuum drying, freeze drying, and vacuum degassing
- Gas substitution, filling and vacuum heat insulation
- Automated Leak testing and others

External Dimension Diagram (unit: mm)

VS1501/VS2401



• Note: Dimensions in () are for the VS1501 model.