



# D25 Flow Control Vacuum Pump and Compressor Series

## User Guide

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# About This Document

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## Purpose

This document is a description of the D25 flow control vacuum pump and compressor series in the test period, which is used to guide the relevant technical personnel to understand the product characteristics.

## Intended Audience

This document is intended for technical personnel. You should have a good understanding of your product and have a clear concept of the relevant parameters, specifications, and other information of the applications of the micro pump.

## Keyword

Brushed motor, related parameters, cautions

## Change History

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The change history accumulates each update of this document. The latest version of the document contains all the previous updates.

Issue	Date	Product Version	Issuer	Modification
01	2019-11	1.0	XYL	First official release
02	2019-12	1.0	XYL	Update dimensions
03	2020-05	1.0	XYL	Add model description
04	2020-06	1.0	XYL	Modify cautions and medium description
05	2021-04	1.0	XYL	Update parameter of test temperature
06	2021-08	1.0	XYL	Modify document format
07	2021-09	1.0	XYL	Added curve at non-rated voltage

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# 1 Product Characteristics

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## 1.1 Compact Size

Pollution-free transmission, maintenance-free, allowing the medium to contain water vapor, and can operate continuously for 24 hours; small size, low energy consumption.

## 1.2 Brushed Motor

This model is driven by high-quality brushed motor which has the advantages of long lifetime, low interference, low energy consumption, high reliability, etc

# 2 Technical Parameters

## 2.1 Key Parameters

(standard atmospheric pressure 101kPa)

Model	Rated Voltage (V DC)	Load Current (mA)	Peak Flow (L/min)	Average Flow (L/min)	Relative Vacuum (-kPa)	Max.Output Pressure (kPa)
Material	Pump Head: Reinforced Nylon,Diaphragm/One-way Valve:EPDM,Motor: BDC					
D25L	12	≤100	≥3	≥2.4	≥27	≥28
D25S	5	≤160	≥2	≥1.5	≥27	≥28

### Note:

- 1.Rated working voltage 12V/5V( $\pm 10\%$ ).
- 2.Unless otherwise specified, the technical parameters are measured under the conditions of temperature 20°C and standard atmospheric pressure of 101kPa. For products with other parameters and specifications, you can contact us to customize.
- 3.The parameters in the table are measured at the maximum speed of the motor under rated voltage. When the motor speed changes, the pressure/vacuum level is basically unchanged.
- 4.The peak flow rate in the table refers to the flow value measured with a rotameter, and the average flow rate is measured with a soap film flow-meter.

## 2.2 Configuration options

Material option					
pump head	Reinforced nylon				
diaphragm	EPDM				
one-way valve	EPDM				
motor	BDC				

## 2.3 Reliability Parameters

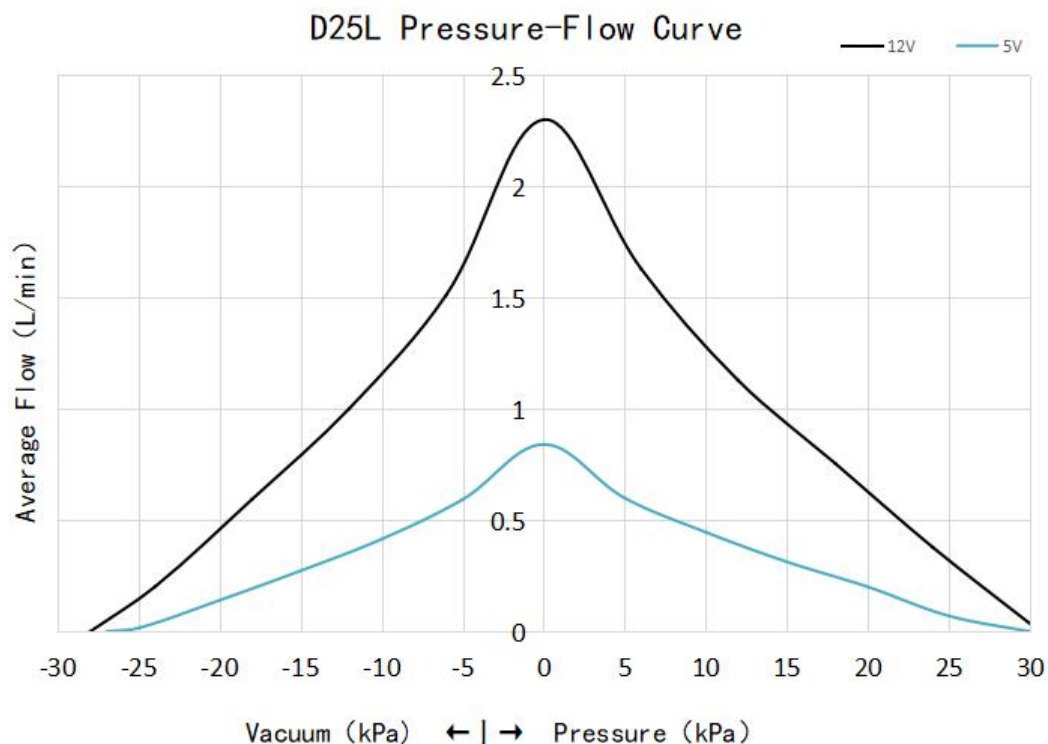
Model	D25L/D25S
Version	Simplified Version
Full-Load(hrs)	5000
No-Load(hrs)	8000
Motor(hrs)	10000
Lifetime test instructions:	Full-load life test conditions: At rated voltage, block the pump exhaust port, and the suction port is directly connected to the atmosphere, so that the pump can operate continuously without stopping for 24 hours under the maximum pressure condition;
	No-load life test conditions : The pump suction port and exhaust hole are directly open to the atmosphere, so that the pump works under normal pressure for 24 hours without stopping and continuous operation;
	Motor life test conditions: under good ventilation and heat dissipation conditions, the motor does not carry a load for 24 hours without stopping Continuous operation;
	Environmental conditions for life test: In a clean, non-corrosive laboratory, the ambient temperature is 5~33℃ fluctuates with the climate, and the relative humidity of the environment is 50%~85%, fluctuates with the climate;
	The source of the experimental data is from Hailin Technology Aging and life laboratory and supplier laboratory
Working Conditions	

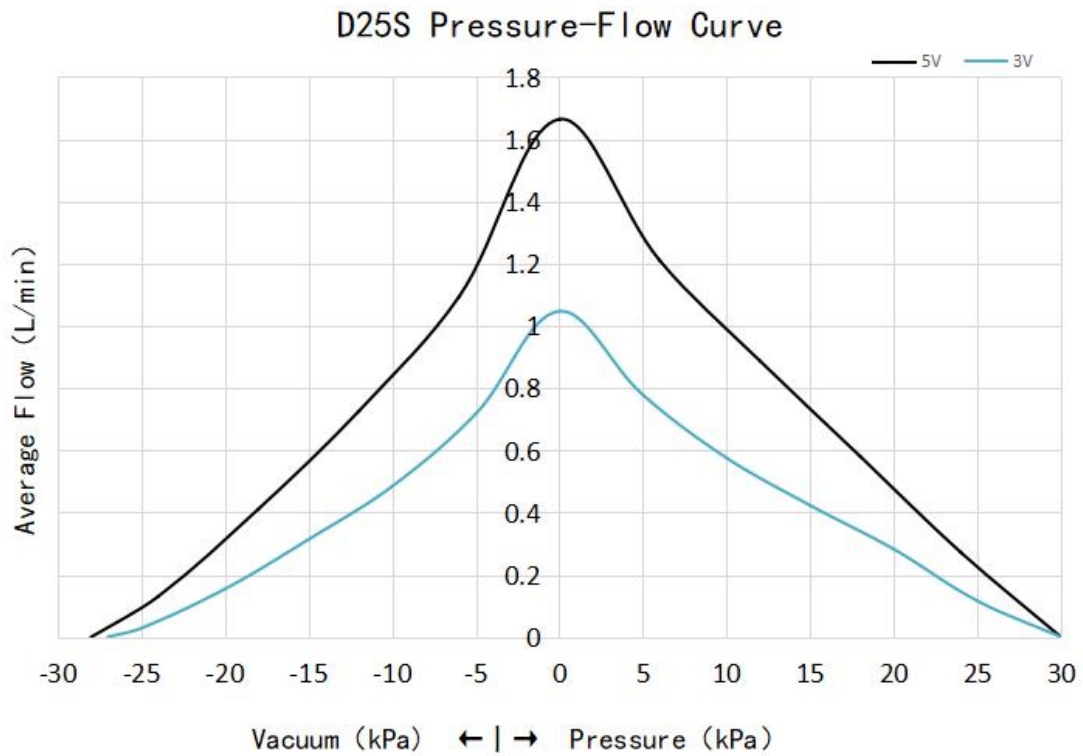


Environment	Permissible ambient temperature range of the simplified version products is 0°C~50°C, The pump should not be exposed to the sun, and should work in a clean and ventilated environment.
Medium	Permissible gaseous media temperature range is 0°C~50°C. The medium is allowed to contain water vapor, but cannot contain particles or oil mist.
Load	The inlet/outlet can be operated at full load (i.e. completely block the inlet/outlet), but the inlet applied load cannot exceed the maximum vacuum of the pump; the outlet applied load cannot exceed the maximum pressure of the pump.
Corrosion	The materials of the wetted parts: pump head, diaphragm, one-way valve (See Configuration Options for component materials), The above materials have a certain degree of corrosion resistance. Please further judge the resistance to the medium according to the wetted materials

## 2.4 Flow Rate Curve

There are individual differences between different micro pumps, so this curve is a statistical value, only as a technical reference for users to confirm the working point. The "flow" mentioned in this section refers to the "average flow".



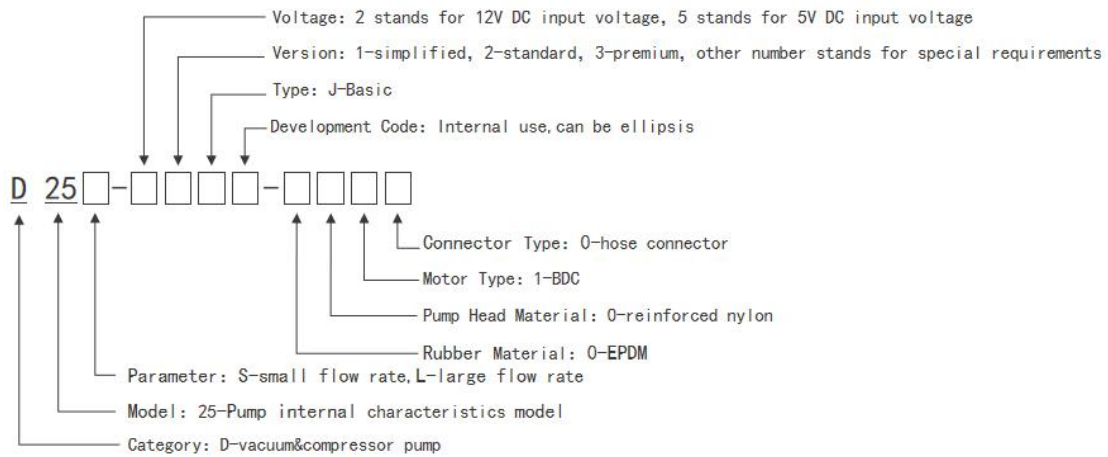


- Note:**
1. The maximum average flow rate of the curve will be slightly lower than the nominal value, which is due to the resistance of the test pipeline components, which leads to the attenuation of the flow;
  2. The value of this curve is for reference only, not as a basis for product acceptance.

# 3 Product Model Description

## 3.1 Brief Description of Model Naming

Only basic type available for this series of pumps.



Example 1: D25L-21J-0100 (D25 pump with large flow rate , simplified version of 12V voltage basic type)

# 4 Cautions

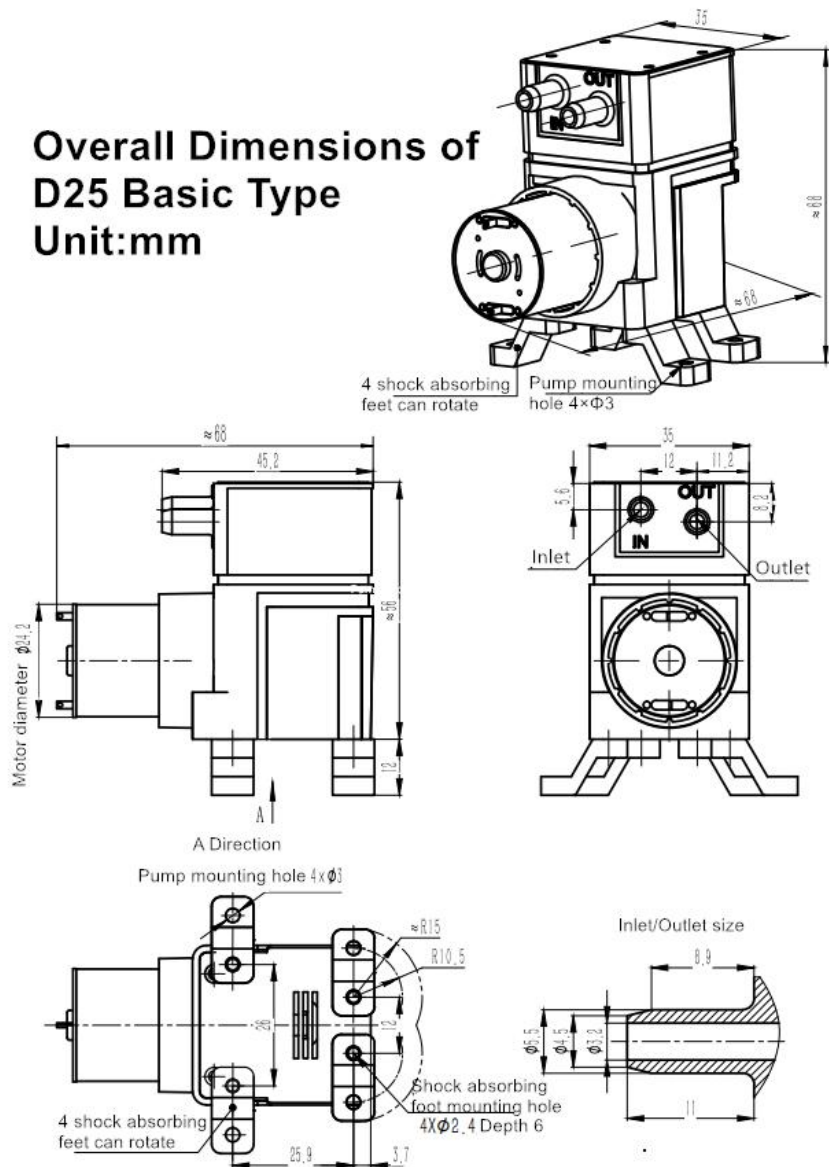


Please read the instructions in this chapter carefully and follow the instructions strictly before use.

- 1. This product has no waterproof, dust-proof, and explosion-proof functions and cannot be used in flammable and explosive environments!**
- 2. Foreign matter must not fall into the gas nozzles, and there should be no solid particles in the medium, otherwise the micro pump will be damaged!**
- 3. When this product is used to transfer harmful medium, it must be double-sealed to ensure personal safety!**
- 4. The matching piping components and containers must have sufficient strength to ensure personal safety!**
- 5. Please follow the instructions strictly!**
- 6. Do not suck up oil mist!**

# 5 Dimensions

## Overall Dimensions of D25 Basic Type Unit:mm



Installation instructions:

1. The screws on the pump cannot be removed, otherwise it will damage the pump;

2. The mounting holes are self-tapping screw holes, not suitable for repeated tightening and disassembly, otherwise the installation will be loose and unreliable.

# 6 Appearance

