

HP 2-Position, 6-Port with vent High-Pressure Valve

Specification Sheet

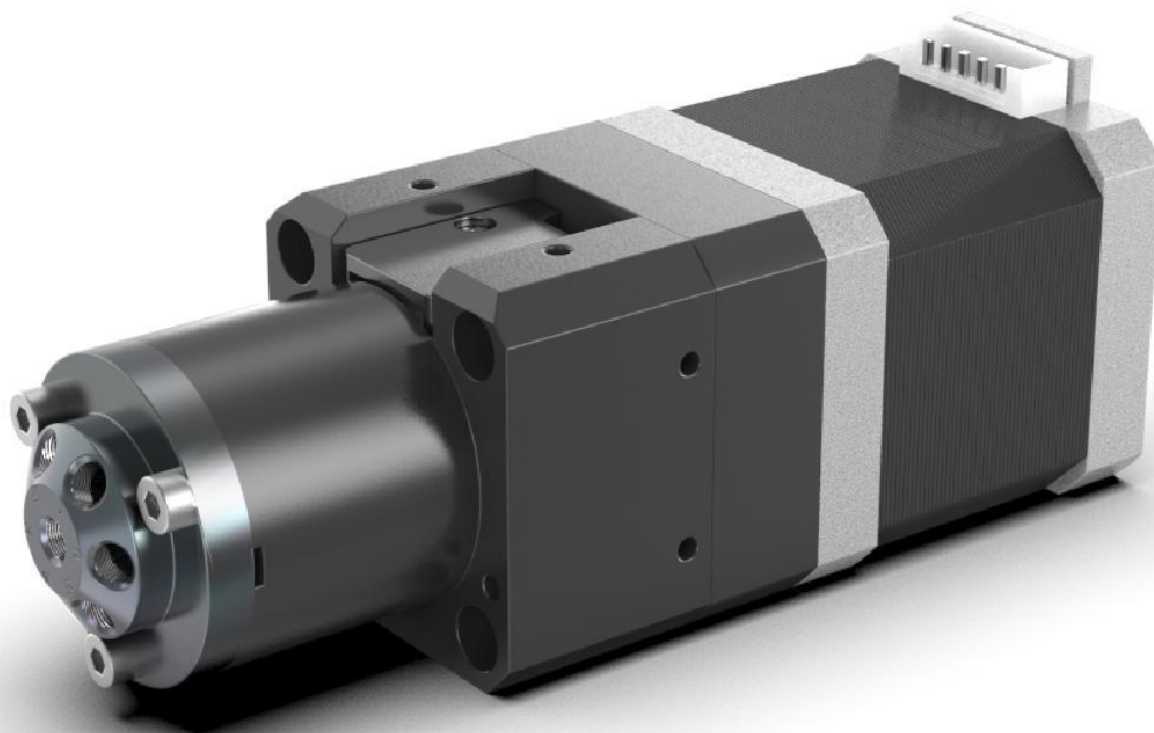


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1 Introduction

1.1 Product Brief

The high-pressure rotary valve (also known as autosampler valve, sample valve) is a core component for autosampling in high-performance liquid chromatography (HPLC) systems. With a maximum operating pressure of up to 25 MPa, an ultra-small internal volume of 0.8 μ L, and a patented flow path and venting design, it enables precise control of flow direction under high pressure and efficient system venting. The valve features long life, maintenance-free operation, and fully complies with ISO9001, RoHS, and CE quality standards and certifications. It is widely used in testing and analytical workflows in medical, food, chemical and other fields.

1.2 Product Features

- Designed and manufactured to the highest quality standards, complying with ISO9001 quality system, EU RoHS directive and CE safety certification, helping simplify compliance considerations for instrument integration.
- Pressure resistance up to 25 MPa, multiple ports optional, can be connected to external sample loops or other tubing for various applications.
- The valve stator is made of SUS316L, and the rotor is made of polymer material, offering good chemical compatibility.
- 0.4 mm micro-flow-path design minimizes internal volume.
- Rotor uses wear-resistant polymer material and can be quickly replaced, extending service life.
- Precision machining, accurate control of structural angles.
- Compact footprint; port threaded hole positions are well designed for easy fitting installation and removal.
- Patented bubble venting design.

2 Functional Description

By switching the internal structure, the HP valve can achieve the following basic functions:

1. When the motor resets and centers to (Notel), and the optocoupler is unblocked, HP valve ports 1-2, 3-4, and 5-6 are connected respectively, corresponding to the "Inject Position".
2. Starting from the reset position, as viewed from the valve-head end face, rotate the motor 60° clockwise. The optocoupler is blocked, and HP valve ports 1-6, 2-3, 4-5 are interconnected, corresponding to the "Load Position".
3. Starting from the reset position, as viewed from the valve-head end face, rotate the motor 150° counterclockwise. The optocoupler is blocked, and HP valve ports 3 and 7 are connected, corresponding to the "Vent Position".

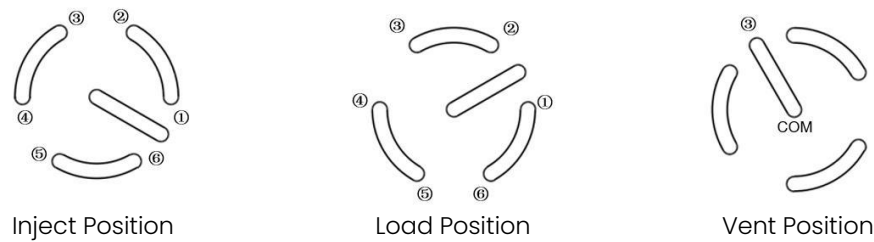


Figure 1 Flow Path Diagrams

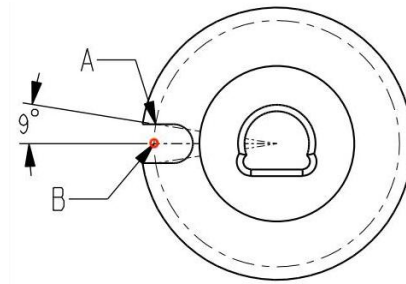


Figure 2 Optocoupler Centering Position Diagram

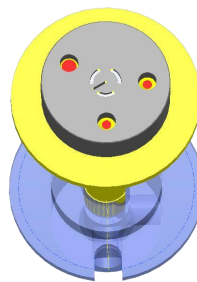


Figure 3 Valve Head 3D Structure View

Notes:

1. "Centering" action is defined as: after the optocoupler flag performs a "reset" rotation to position A (in the figure above), then rotate 9° clockwise from position A to center the flag to position B.
2. The angle between adjacent ports 1-6 is 60°, the angle between the vent port and port 1 is 30°, and the angle between the optocoupler flag edge and the center is 9°.
3. Motor gear ratio: 5:1.

3 Appearance and Dimensions

Unit:mm

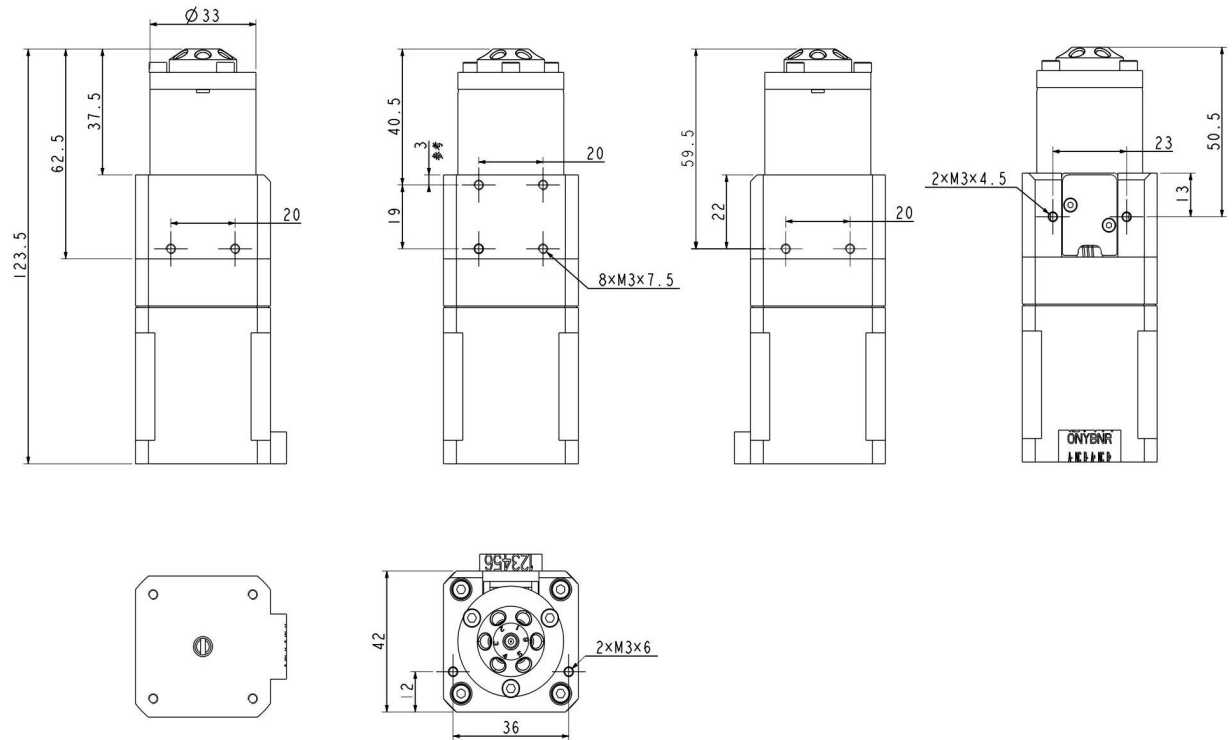


Figure 4 Outline Dimensions

4 Specifications

Table 1 Specifications

Specifications		
Category	Specification	Parameter
Technical Parameters	Product Model	HP-26SSU3204
	Rated Voltage	24 V
	Rated Current	2 A
	Rated Power	48 W
	Motor Gear Ratio	5:1
Application Parameters	Configuration	2-position, 6-port with vent
	Dimensions (L×W×H)	42mm×42mm×123.5mm
	Mounting Dimensions & Thread	Positioning (L×W): 19mm×20mm; Fixing (Thread spec×depth): M3×10mm
	Port Specification	10-32 UNF(Note1)
	Max Operating Pressure	25 MPa
	Channel Diameter	0.4 mm
	Adjacent Channel Switching Time	100 ms
	Service Life	150,000 cycles (pure water)(Note2)
	Operating Noise	<60 dB
	Internal Volume	0.8 μL
Wetted Materials	Stator	SUS316L
	Rotor	Polymer material
Environmental Requirements	Ambient Temperature	0~40℃ (non-condensing)
	Ambient Humidity	0-93%±3% RH at 40℃ (non-condensing)
	Storage/Transport Temperature	-40~55℃ (no freezing, no condensation)

Notes:

1. 10-32 UNF mates with tapered series fittings.

2. Life data are from Foreach laboratory tests, where one cycle is defined as switching from "Inject Position" to "Load Position" to "Vent Position". (Test medium: pure water; rotor speed: 100 RPM. For detailed life test information, please contact Foreach sales personnel.)

3. The information provided in this specification is based on nominal technical data and test results. It is considered accurate and reliable and serves as an aid in selecting Foreach products. Users are responsible for determining whether the product is suitable for the intended application and for conducting relevant tests before use.

5 Interface Information

5.1 Optocoupler Information

Table 2 Optocoupler Connector Specifications

Optocoupler Interface Specification	
Specification	Model
Optocoupler Terminal	JST SPH-002T-P0.5L
Optocoupler Housing	JST PHR-4

Table 3 Optocoupler Pin Definition

Optocoupler Pin Definition		
PIN	Color	Description
PIN4	Black	Power negative / Ground
PIN2	White	Signal line
PIN1	Red	Power positive
Model	Mode	Condition
/	Low level	Light Received

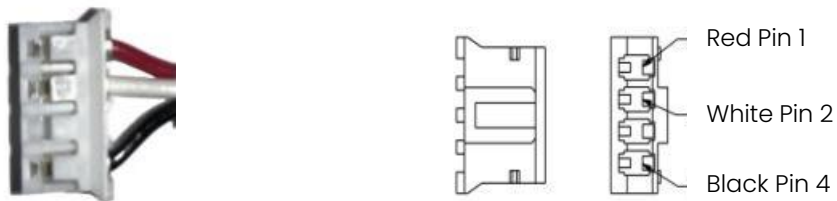


Figure 5 Optocoupler Wiring Details

5.2 Motor Information



Wiring Diagram

Exciting Sequence vs.
Direction of Rotation

STEP	A	B	C	D	
1	+	+	-	-	CCW
2	-	+	+	-	
3	-	-	+	+	
4	+	-	-	+	

Clockwise view from mounting side

Figure 6 Motor Wiring Diagram

6 Ordering Information

6.1 Product Information

Table 4 Order List

Product Order List	
Product Code	Model
639005	High-pressure Valve HP-26SSU3204 639005

6.2 Spare Parts Information

Table 5 Spare Parts Information

Spare Parts Information	
Product Code	Description
639006	HP series high-pressure valve stator
639007	HP series high-pressure valve rotor

7 Appendices

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