



Precision Fluid Control Series



Mini Vertical Syringe Pump

SY-09

Product Technical Specification | July 2026

Nanjing Jiuyuhui Environmental Technology Co., Ltd.
www.jiuyuhub.com

Product Overview

The SY-09 mini vertical syringe pump is a further miniaturized version of the SY-08, featuring an encoder feedback system and dual-protocol control. It offers 3 mL and 8 mL syringe options with speeds up to 600 rpm (3 mL) and repeatability of 0.3%~0.7%. It is suitable for space-constrained, high-precision analytical systems such as IVD, chromatography, online water-quality monitoring, and food/petrochemical testing.

- Mini Vertical
- 3/8 mL
- Encoder System
- Dual Protocol
- 600 rpm

Key Features



More Compact

Smaller footprint than SY-08 for tight installations.



Encoder System

Enhanced anti-interference and error correction.



High Speed

Up to 600 rpm for 3 mL syringe.



3 mL / 8 mL Options

Covers small-to-medium precision dispensing.



Dual-Protocol Control

ASCII, custom, and Modbus protocols.



Optional Driver

Driver can be integrated or external.

Technical Specifications

Parameter	Specification
Model	SY-09
Principle	Precision positive-displacement syringe pump
Accuracy	≤1% @ 100% rated stroke
Repeatability	0.3%~0.7% @ 100% rated stroke
Syringe Sizes	3 mL / 8 mL
Rated Stroke	18 mm (3 mL, 3,600 steps) / 19.2 mm (8 mL, 3,840 steps)
Max Speed	600 rpm (3 mL) / 300 rpm (8 mL)
Linear Speed	0.017~10 mm/s (3 mL) / 0.017~5 mm/s (8 mL)
Stroke Runtime	1.8~1080 s (3 mL) / 3.84~1152 s (8 mL)
Resolution	0.005 mm/step; min dispense 0.833 μL (3 mL) / 2.083 μL (8 mL)
Syringe ID	14.55 mm (3 mL) / 23.03 mm (8 mL)
Actuator	Trapezoidal screw (lead 1 mm)
Wetted Material	Borosilicate glass, PTFE, PVDF, FFKM seal
Pressure Rating	Positive 0~0.5 MPa; negative 0~0.06 MPa (reference)
Back Pressure	1.5 MPa (3 mL) / 0.89 MPa (8 mL)
Connection	1/4-28UNF
Communication	RS232 / RS485 / CAN

Baud Rate	RS232/RS485: 9600~115200 bps
Protocol	ASCII / Custom / Modbus
Power Supply	DC24V / 3A
Operating Temp.	5~55 °C
Relative Humidity	≤80% non-condensing
Weight	0.45 kg (3 mL) / 0.49 kg (8 mL)
Maintenance	Periodic syringe and valve-head cleaning; avoid dry running
Application	IVD analyzers, chromatography injection, online water-quality analysis, food/petrochemical testing

Typical Applications

- ▶ In-vitro diagnostic analyzers
- ▶ Chromatography autosampler injection
- ▶ Online water-quality monitor reagent dosing
- ▶ Food and beverage testing systems
- ▶ Petrochemical analysis instruments

Ordering Guide

Product Code	Description
SY-09	Vertical pump + 3/8 mL syringe + valve (optional)

Accessories/Consumables

Accessory	Specification	Note
Glass Syringe	3 mL / 8 mL	Volume-dependent
Switching Valve	M series	Channel-dependent
Driver	Integrated/External	Optional

Why Choose Jiuyuhub

 Application-First Matching 3 mL or 8 mL recommended by volume and space constraints.	 Southeast Asia Adapted Compact encoder design resists heat, humidity and vibration.
 One-Stop Supply Pumps, valves, syringes and accessories together.	 24-Hour Response Fast selection and integration support.

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