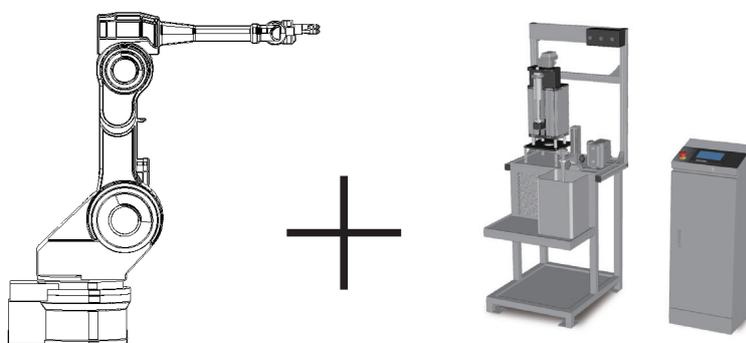


## Syringe Pump System Introduction

Take your coating to the next level with precise control of the paint.



"For any robot"



Explosion-proof precise supplying system for paint

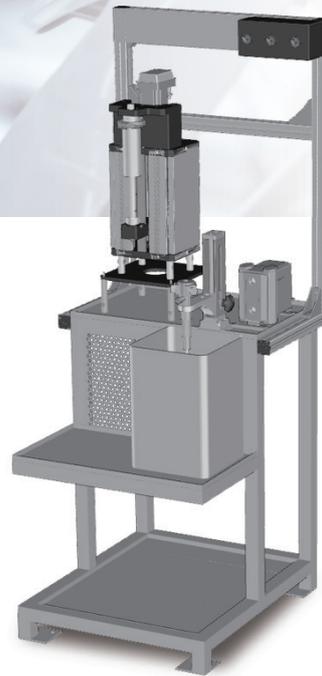
***Syringe Pump System***

# It solves quality, cost and environmental issues at the same time

Significant improvement in coating costs  
Syringe pump system solves problems by precisely controlling the amount of paint



**Syringe Pump**



Syringe pump system Image



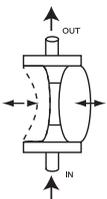
This can be installed on existing paint robots!

Explosion-proof precise supplying system for paint  
High reproducibility to produce the same quality

## Syringe Pump System

### What is a syringe pump system?

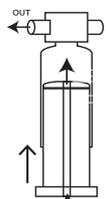
A motor precisely drives a syringe to repeatedly fill and dispense paint into a cylinder. Syringes are the industry standard for accuracy. Takubo Engineering has customized it for paint applications.



Diaphragm Pump



Gear Pump



Syringe Pump

### The original small explosion-proof motor

Takubo Engineering's original compact explosion-proof motor is used as the drive source. The entire system is downsized and designed for safe use in hazardous environments such as paint preparation rooms and mixing rooms.



Takubo Engineering's original compact explosion-proof motor

### You can incorporate it into your current painting system.

We offer one set for easy introduction. Two types are available: "circulation type" and "one-cup type". Within the "circulation type," you can choose between "color-change-valve circulation" and "Spray-gun-tip circulation". Also, as an option, it can be connected to an existing control panel via CC-LINK.



Existing coating system image

### Type of Paint Supply Equipment

types	characteristics	stability/pulsation	precision
Diaphragm Pump	Easy to install and operate, simple structure, easy maintenance, popular type	no	no
Gear Pump	Capable of constant delivery, use for high viscosity paints, and flow control. Cleaning takes time.	ok	no
Syringe Pump	Precise control of discharge volume is possible. Easy to clean and maintain. This uses explosion-proof motor.	Good	Good



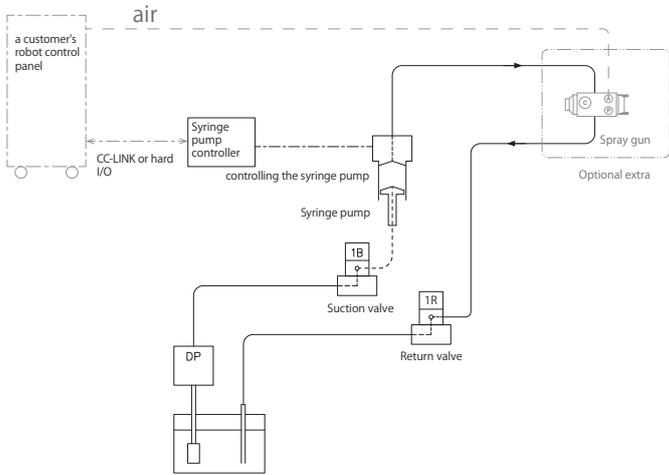
Diaphragm Pump



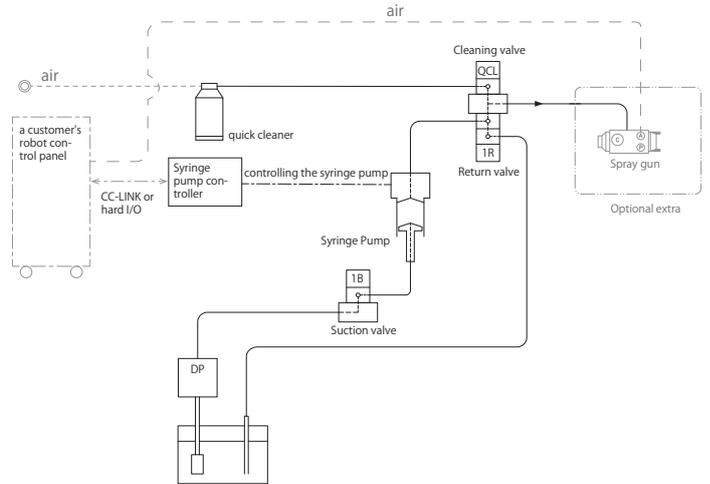
Gear Pump

# Diagrams of the Syringe Pump System

Standard type: Spray-gun-tip circulation syringe pump system



Optional extra: Color-change-valve circulation syringe pump system



## Types of Syringe Pump Systems

System Name	Specifications/Options
1. Spray-gun-tip circulation syringe pump system	Optional extra: Color-change-valve circulation
2. One-cup syringe pump system	Quick cleaner is included as standard.

- With the spray-gun-tip circulation type, paint is circulated all the way to the spray gun. Please prepare a spray gun that is designed to return the paint.
- With the optional color-change-valve circulation type, paint is circulated up to the color change valve.
- \* Optional extra: It can be used with multiple spray guns.
- \* Optional extra: One unit can handle up to 8 spray guns.

## Easy cleaning and maintenance

The syringe pump system has a simple structure. The cylinder can be removed without tools, making cleaning easy. You can use Quick Cleaner to pressure-wash hoses, pumps, spray guns, etc.



Cylinder can be removed without tools

## One-cup system

The one-cup system is a compact supply method where paint is refilled into a cup instead of a paint tank. It reduces paint waste and ensures optimal painting. It is suitable for small paint usage.



One-cup



Basic one-cup system

## Optional extra: It can be used with multiple spray guns.

One syringe unit can supply paint to up to eight spray guns. It can be used for robot systems equipped with multiple guns.

## Optional extra: Easy color change

The color change system enables you to paint in multiple colors. You can use Quick Cleaner to speed up the color change process.

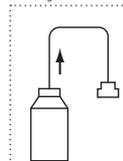
## Precise paint control in 1cc increments

It ensures a stable supply of the minimum amount of paint required without pulsation. This reduces paint waste and cuts costs. They can be managed numerically, which promotes DX.



Top: no pulsating, Bottom: no pulsation

Optional extra: Quick System for high-speed cleaning



Syringe pump controller

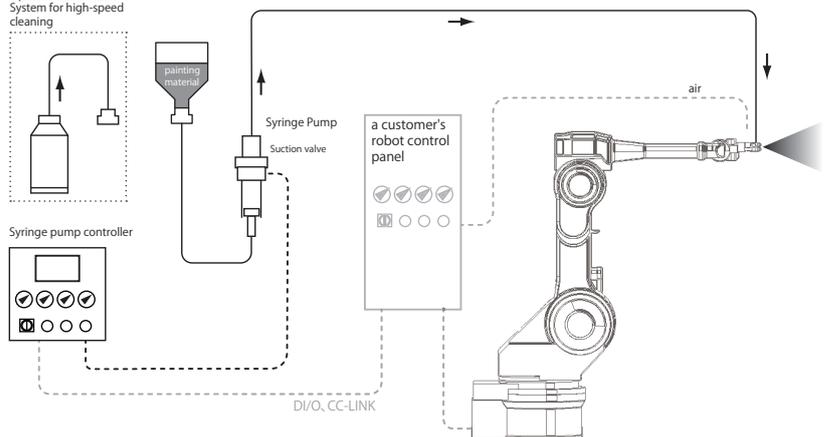
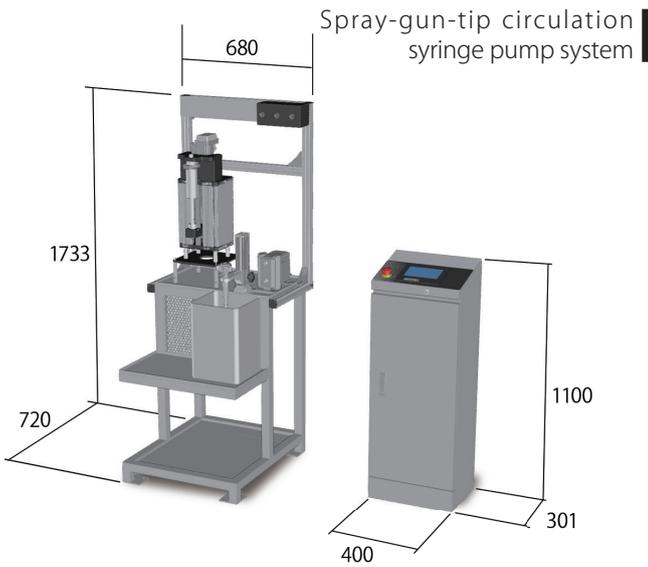
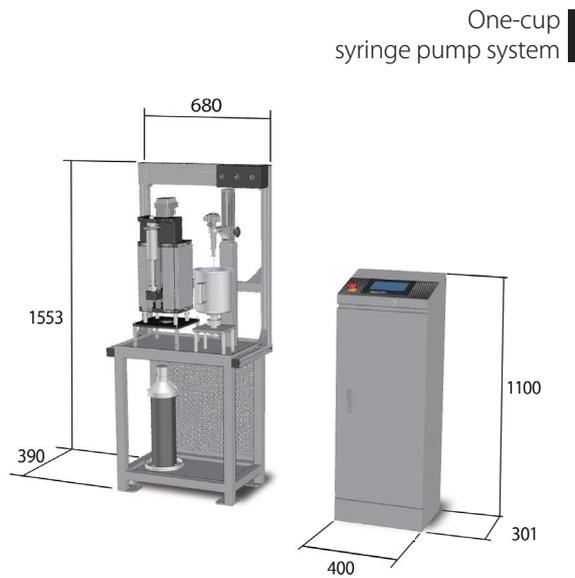


Diagram of the One-cup Syringe Pump System

# Specifications



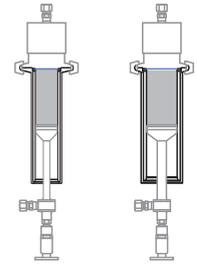
Spray-gun-tip circulation syringe pump system



One-cup syringe pump system

## Main Specifications

Name		Spray-gun-tip circulation syringe pump system	One-cup syringe pump system
Model		SP24EX-100S-1S-GA	SP24EX-100S-1C-GA
Type		Circulation syringe pump	One-cup syringe pump
Size of main unit / outer dimensions		680 w • 1733 h • 720 d	680 w • 1553 h • 390 d
Size of controller / outer dimensions		400 w • 1100 h • 301 d	
Driving method		Ball screw	
Electric capacity		AC200V (3-phase)、0.5kVA	
Syringe	Quantity	1 本	
	Capacity	100cc	
	Material	SUS304 with special coating	
Valve size	Input	PT1/8	
	Output	PT1/4 • 3/8	
motor		Explosion-proof AC servo motor 200W	
Model of drive amplifier		VLPSX-008P2-SBA-0301 (Manufactured by Shibaura Machine Co., Ltd.)	
Explosion-proof level		It complies with IEC60079-0 general rules and IEC60079-1 explosion-proof. (Explosion-proof performance: Exd II BT4G bx)	
Capacity of cup		-	4L
Discharge volume		30 ~ 150cc/min	
Operating environment	Temperature	10 ~ 30°C	
	Humidity	20 to 80%RH (no condensation)	
Storage environment	Temperature	-10 ~ 45°C	
	Humidity	10to90%RH (no condensation)	



50cc (op) 100cc

\*Cylinder capacity  
Standard is 100cc;  
50cc is available as  
an option.



TAKUBO WEB

## Takubo Engineering's Products Lineup



SWAN Pro

LINE DANCER RIBERO

LINE DANCER

DRY TEC

OIL BOOTH

CoSWAN

\*Specifications and sizes in the drawings may differ from the actual ones. Please contact the person in charge for details.



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