



# SYRINGE PUMP SP-500

SAFETY, ACCURACY, AND CONVENIENCE

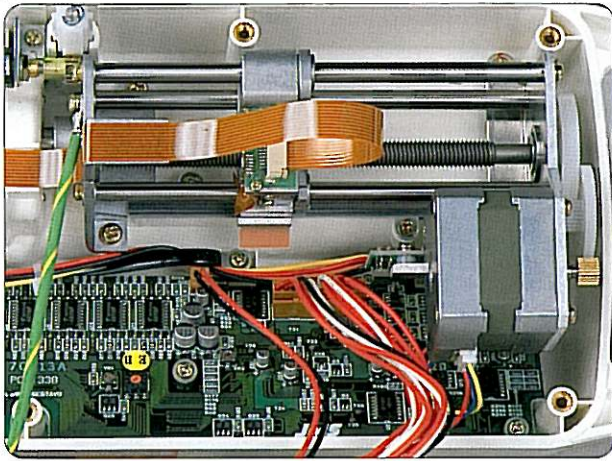
JMS CO.,LTD.



**Warning:**  
• Possible explosion hazard if used in the presence of flammable anesthetics.  
• Do not use in the vicinity of a device which generates high-frequency, e.g. mobile phone or electrocautery unit.

**Caution:**  
• Do not use ether or any other organic solvent.  
• Do not sterilize or autoclave the pump.  
• Do not immerse the pump in water.





The JMS technology has made this state-of-the-art driving mechanism. Together with the fail-safe software with twin CPUs SP-500 ensures safe and accurate delivery of critical drugs.



**Battery Indicator**

The three lamps tell the battery capacity. You can estimate how long more the pump can operate at a glance.



## Specifications and T

### Syringe Used

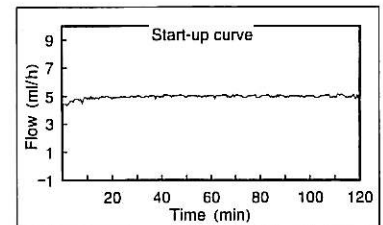
JMS 10ml, 20ml, 30ml, 50ml  
Setting for major syringe brands  
or voluntary setting possible.  
Consult with your local  
distributor.

### Flow Rate Range

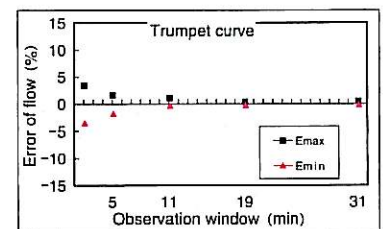
0.1 to 200ml/hr. with 10ml  
syringe  
0.1 to 300ml/hr. with 20ml, 30ml  
or 50ml syringe  
in 0.1ml/hr. increments

### Accuracy

Drive Accuracy  $\pm 1\%$   
with JMS syringes  $\pm 3\%$   
(after 1 hour, flow rate 1ml/hr or  
higher.)



30ml syringe at 5.0ml/hr



30ml syringe at 5.0ml/hr

### Rapid Mode for Purge or Bolus

Approx. 200ml/hr. (10ml syringe)  
Approx. 350ml/hr. (20ml syringe)  
Approx. 450ml/hr. (30ml syringe)  
Approx. 800ml/hr. (50ml syringe)

#### Purge

This function is used to purge air  
from extension tube, and to fit  
syringe plunger onto the  
pressure sensor, while not  
summing up the volume infused.

#### Bolus

This function is used for bolus  
infusion. The volume infused will  
be summed up and displayed.

## *Would you define what the essential needs for syringe pumps are ?*

A Syringe pump is a device to deliver critical drugs, frequently at a very low flow rate, to a critical patient. The drugs are liable to be very potent, which means your syringe pump must perform accurately and safely. SP-500 has been designed based on the latest technologies, to accomplish these concepts.

First of all, a patient's safety is the indispensable task. The pressure sensor loadcell on the slider can detect precise occlusion pressure directly from the syringe, and without delay. For critical cases, you can select the very sensitive occlusion detection at below 400mmHg. Another major advantage of the pressure sensor is the detection of misloading of the syringe plunger. Thus, the pump gives an alarm and prevents hazardous unintended delivery of potent drugs by the patient's venous negative pressure. Twin CPUs, for mutual monitoring, are mandatory, for a fail-safe philosophy. Many other comprehensive safety features, including those for prevention of human error are also equipped.

Secondly, for neonatal and high risk infusions, smooth and consist flow, both short term and long term, is essential. The precision mechanism and the high-grade stepping motor ensure fast start-up response and no pulsatile flow even at a very low flow rate.

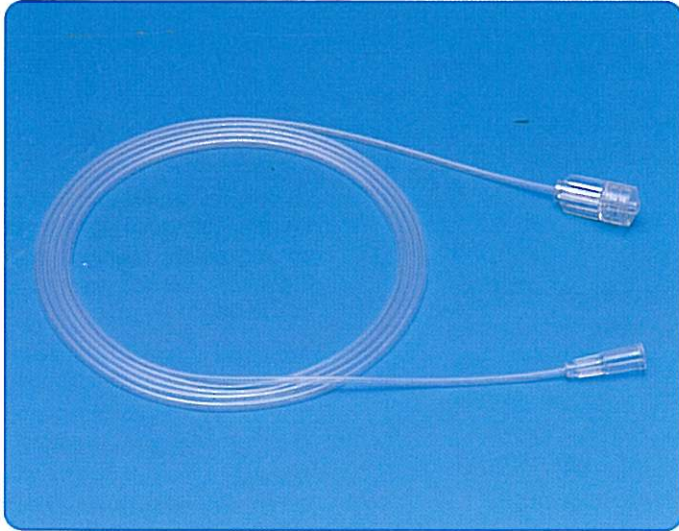
Lastly, ease of operation cannot be neglected. Along with the reputed front panel, clear and straightforward, the JMS SP-500 provides unprecedented convenience, such as a unique gate-opening mechanism for easy syringe loading and the battery capacity indicator.

Consider all of these combined advantages, rigorous safety measures, high accuracy and convenience. Whenever low-dosage critical drug delivery is needed, the choice is the JMS SP-500. We've got the best syringe pump for you.





## Extension tube for syringe pump



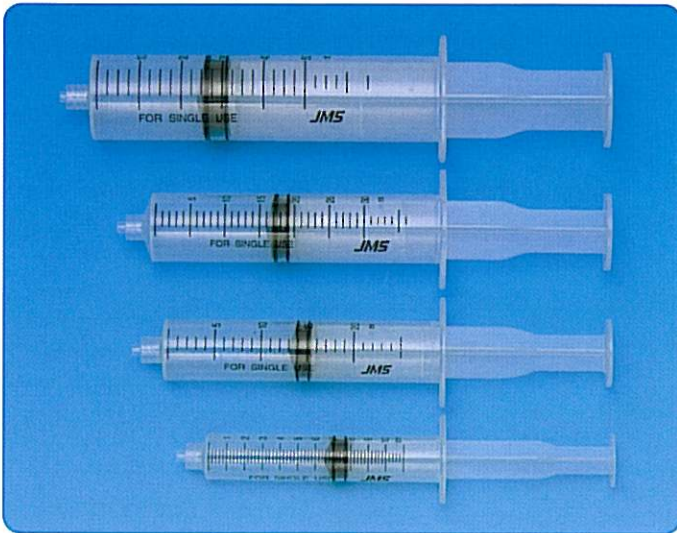
Specially designed for usage with syringe pumps. Features safe luer-lock connectors, kink-free thick wall, and sufficient 150cm or even longer tube length. The pressure resistance is more than 3 bar.

Also features tubing made of polyethylene (PE) that is suitable when ordinary PVC tubing cannot be used due to absorption of some medication, such as nitroglycerine.

I.D. X O.D.	Length	Tube volume	Material	Code No.
0.9 X 2.0mm	150cm	1.0ml	PVC	10-02-063-00
1.8 X 3.8mm	150cm	3.8ml	PVC	10-02-064-00
1.5 X 2.5mm	150cm	2.7ml	Polyethylene	02-00-080-00
1.5 X 2.5mm	200cm	3.6ml	Polyethylene	10-02-062-01
1.5 X 2.5mm	250cm	4.5ml	Polyethylene	10-02-062-00

Package : 25 pcs X 20 boxes

## Disposable syringe without needle



The syringe pump SP-500 is able to accept the following JMS disposable syringes manufactured in Japan. JMS recommends the use of Luer-Lock system for both syringes and extension tubes to prevent accidental disconnection.

Contact your local JMS distributor for the usage of other syringes.

Size	Tip	Code	Package
10ml	Luer-Lock, Central Nozzle	55-10-200-50	100pcs X 6boxes
	Luer-Fitting, Central Nozzle	55-10-100-50	100pcs X 6boxes
20ml	Luer-Lock, Central Nozzle	55-12-200-50	50pcs X 12boxes
	Luer-Fitting, Side Nozzle	55-12-300-50	50pcs X 12boxes
30ml	Luer-Lock, Central Nozzle	55-14-200-50	50pcs X 6boxes
	Luer-Fitting, Side Nozzle	55-14-300-50	50pcs X 6boxes
50ml	Luer-Lock, Central Nozzle	55-16-200-50	50pcs X 6boxes
	Luer-Fitting, Side Nozzle	55-16-300-50	50pcs X 6boxes

CT-01-8-6013-SK  
2003.04.03X6013-SK



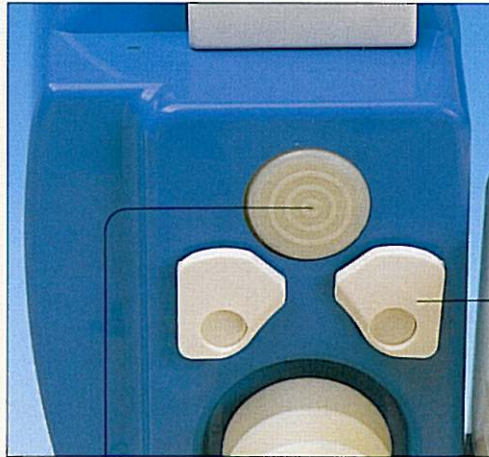
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**Unique gate-opening mechanism**  
By pressing the clutch button, syringe plunger hooks open and allows easy one-action syringe loading.

### Occlusion Detector

A loadcell is installed on the slider so that the pressure from the syringe plunger is directly transmitted to the sensor. Sensitive and accurate control of occlusion detection is possible. You can select the right pressure from three levels according to the usage. This sensor acts also as a plunger disengagement sensor. It detects if the plunger is incorrectly set and prevents the potential hazard of unintended delivery of potent drugs by venous negative pressure.

### Expandability by Optional Setting



① **12V DC Connector**

External DC such as car battery of ambulance can be used.

② **RS232C Connector**

Can be connected to an external computer directly.

Important clinical data can be transmitted.

For safety reasons only information output is permitted.

③ **Nurse Call connector**

## Technical Data

### Volume Infused Display

0.1 to 999.9ml in 0.1ml increments  
With resetting function

### Occlusion Detection

Direct sensing of syringe plunger by pressure sensor loadcell. 3 levels are selectable.

L (low pressure)  
0.2 to 0.6kgf/cm<sup>2</sup>(150 to 440mmHg)  
when sensitive occlusion sensing is required.

M (medium pressure)  
0.5 to 0.9kgf/cm<sup>2</sup>(370 to 660mmHg)  
Normal setting

H (high pressure)  
0.8 to 1.4kgf/cm<sup>2</sup>(590 to 1000mmHg)  
when high pressure is expected due to tandem connection with infusion pump or use of viscous solution.

### Alarms

Red alarm lamp and audible alarm

Near Empty (small remains or 5min. before completion)

End

Low Battery

Occlusion

Syringe Disengaged

Internal Malfunction

### Reminder Alarms

20 seconds after purging or bolus

2 minutes after flow rate setting

### Power Required

100/110/115/120 VAC  
200/220/230/240 VAC  
50/60Hz  
Power Consumption 15VA

### Battery

Rechargeable Nickel Cadmium Battery Life 4 hours (fully charged new battery)  
Recharge time : 17 hours when fully discharged

### Accessories

Power Cord (3 meters long)  
Pole Clamp  
Operator's Manual  
Quick Reference Sheet

### Optional

12VDC Connector  
RS232C Connector  
Nurse Call Connector

### Classification

Class I type CF  
Drip Proof

### Standards

IEC 601-1  
IEC 601-1-2  
Electromagnetic compatibility  
IEC 601-2-24, Part 2 (Draft)  
Particular requirements for safety of infusion pumps and controllers

### Environmental Conditions

Operation (no condensation)  
10 to 40°C, 30 to 85% RH

Storage (no condensation)  
-10 to 40°C, 30 to 95% RH  
No direct sunlight

### Weight and Dimensions

2.6kg  
340(W) × 134(D) × 134(H)mm

### Code/Voltage/Plug Type

27-50-060-12  
120VAC  
US

27-50-061-22/23  
220/230VAC  
US

27-50-062-22/23/24  
220/230/240VAC  
Euro

27-50-063-22/23  
220/230/VAC  
UK

