

VOLUMETRIC INFUSION PUMP/SYRINGE PUMP
MEDIFUSION® DI-4000/DS-3000



RACK SYSTEM



DI-4000

CE
0120

- ∟ DURAL ABILITY OF RACK / STANDALONE SYSTEM
- ∟ DRUG LIBRARY / IV SET LIBRARY MAX 300
- ∟ ANTI-BOLUS / LANGUAGE CONFIGURATION
- ∟ SECONDARY MODE / EASY USER INTERFACE
- ∟ FEEDING FOR ENTERAL NUTRITION



DS-3000

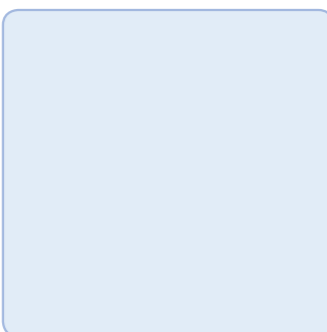
- ∟ DURAL ABILITY OF RACK / STANDALONE SYSTEM
- ∟ AUTO-CALIBRATION / SYRINGE AUTO-RELOAD AND AUTO-UNLOAD
- ∟ DRUG LIBRARY / SYRINGE LIBRARY MAX 300
- ∟ ANTI-BOLUS / LANGUAGE CONFIGURATION
- ∟ SECONDARY MODE / EASY USER INTERFACE



- ∟ BOARD TO BOARD CONNECTION
- ∟ SMART COMMUNICATION FOR EACH PUMP
- ∟ DC 12 V. USB. NURSE CALL. DROP SENSOR. LAN CONNECTION



DAIWA



SPECIFICATION REFERENCE

DI-4000 Infusion Pump Specification Reference

Product Name	Volumetric Infusion Pump	
Model Name	DI-4000	
Infusion Principle	Peristaltic transit finger	
Range of Flow Rate	0.1 ~ 1,200 ml/h	0.1~99.9ml/h (0.1ml/h increments) 100~1,200ml/h (1ml/h increments)
Accuracy of set delivery rate	5% with assigned IV set	
Range of Volume	Total Vol.	0.1~99.9ml (0.1ml step) 100~9999ml (1ml step)
	Infused Vol.	0.1~99.9ml (0.1ml step) 100~9999ml (1ml step)
Bolus rate	1~1200ml/h (1ml/h step)	
Bolus Volume	0.1~99.9ml (0.1ml step)	
Purge Rate	1~1200ml/h (1ml/h step)	
Purge volume	0.1~99.9ml (0.1ml step)	
Dosage mode	Dose rate:0~5000mcg/kg/min (0.001mcg/kg/min step) Body weight : 0~300kg (0.1kg step) Solution volume : 0~9999ml (0.1ml step) Drug volume : 0~800mg/ml (0.001mg/ml step)	
K.V.O Rate	1ml/h(default) 1 ~ 9ml/h	Flow Rate 1.0 ~ 1200ml/h
	0.1ml/h(default)	Flow Rate 0.1 ~ 0.9ml/h
Occlusion alarm	9 level 60~850mmHg	
Display	<ul style="list-style-type: none"> AC 100~240 VAC, 50~60Hz, (Fuse : 250V, T3.15A) DC 12V(500mA) Ni-MH Rechargeable Battery - 2,000 mA/h, AA, 1.2V, 8 ea - Operating Time : approx. 6 hours at a flow rate of 25ml/h - Recharging Time : approx. 5 hours 	
Power consumption	34 VA	
Protection Type	<ul style="list-style-type: none"> Protection from electric shock : class I Protection capacity for electric shock : Type CF Protection from liquid infiltration : IPX 1 (drip-proof) 	
EMC/Standard	EN 60601-(1, 1-2, 1-8, 2-24)	
Size (D×W×H)	260×130×91	
Weight (kg)	1.8	

DS-3000 Syringe Pump Specification Reference

Product Name	Volumetric Syringe Pump	
Model Name	DS-3000	
Range of Flow Rate	0.1~99.9ml/h (0.1ml/h step) 100~1500ml/h (1ml/h step)	1. 5ml Syringe : 0.1~200ml/h 2. 10ml Syringe : 0.1~300ml/h 3. 20ml Syringe : 0.1~400ml/h 4. 30ml Syringe : 0.1~500ml/h 5. 50/60ml Syringe : 0.1~1500ml/h
	1. Mechanic : ±1% 2. ±3% Dedicated syringe 3. ±3% Calibrated syringe	
Range of Volume	Total Vol.	0.1~99.9ml (0.1ml step) 100~9999ml (1ml step)
	Infused Vol.	0.1~99.9ml (0.1ml step) 100~9999ml (1ml step)
Bolus rate (=Purge rate)	1~1500ml/h (1ml/h step)	1. 5ml Syringe : 200ml/h 2. 10ml Syringe : 300ml/h 3. 20ml Syringe : 400ml/h 4. 30ml Syringe : 500ml/h 5. 50/60ml Syringe : 1500ml/h
Bolus(Purge) Volume	0.1~99.9ml(0.1ml step)	
Purge Rate	1~1200ml/h (1ml/h step)	
Purge volume	0.1~99.9ml (0.1ml step)	
Dosage mode	Dose rate : 0~5000mcg/kg/min(0.001mcg/kg/min step) Body weight : 0~300kg (0.1kg step) Solution volume : 0~9999ml (0.1ml step) Drug volume : 0~800mg/ml (0.001mg/ml step)	
K.V.O Rate	1ml/h(default) 1 ~ 9ml/h	Flow Rate 1.0 ~ 1500ml/h
	0.1ml/h(default)	Flow Rate 0.1 ~ 0.9ml/h
Occlusion alarm	9 level 60~850mmHg	
Display	Mono Graphic LCD(240×64) LED : AC/DC, Operating, Warning	
Power supply	<ul style="list-style-type: none"> AC 100~240 VAC, 50~60Hz,(Fuse : 250V, T3.15A) DC 12V(500mA) Ni-MH Rechargeable Battery - 2,000 mA/h, AA, 1.2V, 8 ea - Operating Time : approx. 6 hours at a flow rate of 5ml/h - Recharging Time : approx. 5 hours 	
Power consumption	34 VA	
Protection Type	<ul style="list-style-type: none"> Protection from electric shock : class I Protection capacity for electric shock : Type CF Protection from liquid infiltration : IPX 1 (drip-proof) 	
EMC/Standard	EN 60601-(1, 1-2, 1-8, 2-24)	
Size (D×W×H)	260×130×91	
Weight (kg)	1.8	



Compact Design



IV SET LIBRARY



DOUBLE DOOR SYSTEM



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Dual Channel

Single Channel

IV SET LIBRARY

100 brands of IV SET calibration data can be stored in DI-2000/2200. The list of IV SET in the IV SET Library can be updated upon user's request.

EASY FIRMWARE UPGRADE

Users can download the F/W upgrade program from our website and upgrade the F/W version of DI-2000/2200 in user's PC.

HISTORY MONITORING SYSTEM

Operating Histories are saved in DI-2000 / 2200 up to 1,000 events.

DOUBLE DOOR SYSTEM

Patient can be protected from the fluid free drop when door is opened carelessly.

Single & Dual Channel of Compact Design

Convenient Setting of Flow Rate

- Micro Setting
- Dosage Mode
- Gtt(Drop/min.) Setting Mode
- Time Setting Mode

Convenience in Using

- Titration
- Key Lock
- Micro Mode
- One-touch Bolus & Pause
- Separable Pole Clamp & Easy Portable
- Long Visibility by FND and Indication of Remaining Time
- Nurse Call

Various Alarm Functions

- Door Open
- Occlusion
- Air (Bubble) Detection
- Battery Low, Battery Empty
- Infusion Complete
- Near Complete
- AC/DC Power Shut-off
- Start Reminder
- Standby Alarm (in 2 minutes)
- Malfunction
- Drop Sensor (optional)



Separable Pole Clamp & Easy Portable



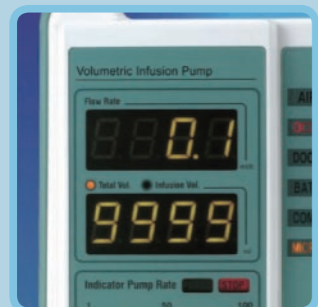
Long Visibility by FND and Indication of Remaining Time



Various Alarm Functions

Product Name	Volumetric Infusion Pump		
Model Name	MEDIFUSION DI-2000		
Infusion Principle	Peristaltic transit finger		
Range of Flow Rate	0.1 ~ 1,200 ml/h	Micro (On) : 0.1 ~ 99.9 ml/h (in 0.1 ml/h increments)	100 ~ 1200 ml/h (in 1 ml/h increments)
		Micro (Off) : 1 ~ 1200 ml/h (in 1 ml/h increments)	
Accuracy	5% with assigned IV set		
Range of Volume	Total Vol.	0.1~9999 ml or	Micro (On): 0.1 ~ 99.9 ml (in 0.1 ml increments) 100 ~ 9999 ml (in 1 ml increments) Micro (Off): 1 ~ 9999 ml (in 1 ml increments)
	Infused Vol.	0.0 ~ 9999 ml	0.0 ~ 99.9 ml : Increase by 0.1 ml 100 ~ 9999 ml : Increase by 1 ml
Purge Rate	700 ml/h (default) - 1 ~ 1200 ml/h		
Purge volume	3 ml (default) - 1 ~ 9999 ml		
K.V.O Rate	1 ml/h (default)	Flow rate 1.0 ~ 1,200 ml/h	
	1 ~ 9 ml/h		
	0.1 ml/h (default)	Flow rate 0.1 ~ 0.9 ml/h	
Display	7 segment (4 digit * 3 lines)		
Power supply	<ul style="list-style-type: none"> AC 100~240 VAC, 50~60 Hz (Fuse: 250 V, T3.15 A) DC 12V (500 mA) Ni-MH Rechargeable Battery <ul style="list-style-type: none"> - 2,100 mA/h, AA, 1.2 V, 10 ea - operating time - approx. 4 hours at a flow rate of 25 ml/h - recharging time - approx. 10 hours 		
Power consumption	35 VA		
Protection Type	<ul style="list-style-type: none"> Protection from electric shock: Class I Protection capacity for electric shock: Type CF Protection from liquid infiltration: IPX 1 (drip-proof) 		
Size (D×W×H)	120×130×206 mm		
Weight	Approximately 1.7 kg		

VOLUMETRIC INFUSION PUMP MEDIFUSION® MP-1000



Broad Range of Flow Rate Settings



Improved Drop Sensor



Product Name	Volumetric Infusion Pump
Model Name	MEDIFUSION MP-1000
Infusion Principle	Peristaltic Semi-Transit Finger
Range of Flow Rate	0.1~999 ml/h 0.1~99.9 ml/h: increase and decrease by 0.1 ml/h 100~999ml/h: increase and decrease by 1 ml/h
Accuracy	±5% (Becton Dickinson : model PUMP A122)
Range of Volume	1~9999ml or no limit: 1~9999ml: increase by 1 ml
- Total Volume	0.1~9999 ml: 0.0~99.9ml: increase by 0.1ml
- Infused Volume	100~9999ml: increase by 1ml
Purge Rate	700ml/h (subject to change)
Purge Volume	3ml (subject to change)
K.V.O. Rate	1ml/h: Flow rate 1.0~999 ml/h (subject to change) 0.1ml/h: Flow rate 0.1~0.9ml/h
Display	7 segment (4 digit * 2 line)
Battery	2 hours at flow rate 25ml/h Charging time – approx. 15 hours

Alarm	Visible and Audible Alarm - Door open - Occlusion (Detection range: 100~950mmHg) : Down stream Occlusion 3 steps are adjustable : Maximum infusion pressure: 950 mmHg - Air Bubble detection - Low battery - Infusion complete - Alarm for malfunction
Power supply	100~240 VAC, 50/60Hz (Fuse: 250V, T3.15A) 12VDC
Power consumption	Less than 30VA
Classification	Class I, Type BF, IPX 1 (Drip-proof)
Dimension (D×W×H)	125×166×258 mm
Weight	Approx. 3.2 Kg

VOLUMETRIC INFUSION PUMP MEDIFUSION® FEEDING / BLOOD TRANSFUSION



Broad Range of Flow Rate Settings

The flow rate can be set up to a maximum of 999ml/h, and can be adjusted in 0.1ml/h increments up to 99.9ml/h

Compatible with Most IV Sets

The MP-1000 has a pre-programmed data for all kinds of standard IV sets. The operator can make it possible to use the pump with any standard IV sets without special trying and efforts.

Improved Drop Sensor

The drop sensor checks irregularities in drop count. The sensor can detect flow error, no drop and accidental free drop

Safety Features

- A keep vein open (KVO) system that prevents the blood access from closing once the programmed infusion volume has been delivered.

- A tube-clamping mechanism that automatically stops infusion when the door is inadvertently opened, and accidental power cutoff prevention that allows the pump to continue running even if the ON/OFF key is mistakenly pressed during infusion.
- The MP-1000 has a drip-proof construction that protects it from infiltration by water or IV solution, and it complies with electromagnetic compatibility (EMC) standards.

Applications

- Continuous low flowrate infusion of fluid drug and transfusion in ICU (Intensive Care Unit) or CCU (Critical Care Unit)
- Continuous infusion of anesthetic, anti-cancer agent and nutrient to immature infant or newborn

Certification

- ISO 13485
- CE Mark



FEEDING PUMP



BLOOD TRANSFUSION PUMP





A side range of flow rate setting available

- 0.1 - 99.9 ml/h in 0.1 ml/h steps
- 100 - 1500 ml/h in 1 ml/h steps

Compatible syringes

10, 20, 30, 50/60, 100 ml more than 30 brands

Audio – visual alarms

- Low battery, Very low battery
- Occlusion
- X min Pre-alarm
- (KVO)XX ml/h
- End of Infusion
- Syringe Empty
- Illegal Syringe
- Plunger Not Fitted
- Clamp Opened
- Internal Error

Safety

- A physician updatable drug name library with up to 30 drug names helps to decrease the potential for clinical errors
- Anti-bolus and anti-siphon functions increase patient safety
- 3 sensors ensure that syringe is correctly fitted as well as verifies it's size and plunger position
- Class II enables the use of pumps without the need to connect to a protective ground in the hospital
- Lockable keypad prevents unauthorized access
- Long life NiMH battery

Flexibility

- "Easy mode" allows fast start capability
- Wide range of infusion rates and units expands application area

- Use of 100ml syringe reduce changeover time
- Titration allows changing of parameters without interruption of infusion

Application

ICU, CCU, NICU or Operation room for the infusion of chemicals such as vasopressor drugs, anti-cancer drugs, oxytocic, nutrition, drug for chemotherapy medication and blood transfusion

SPECIFICATION

Power Supply: 220 ~ 230 VAC ± 10%, 50/60 Hz, or 115 VAC (Optional) ± 10%, 50/60 Hz

Power Consumption: 10 VA (max)

Battery Type: Built-in NiMH 9.6 V 1300 mAh

Battery Life: 8h @ 5 ml/h, 2h @ 100 ml/h

Battery Charging Time: Up to 24 hours to 100% charge

Display Type: 16 characters x 2 line LCD with back - light

Protection: Class II, CF, IPX4

CE 0120: Council Directive 93/42/EEC concerning medical devices

Electrical safety and EMC: EN 60601 - (1, 1-2, 2-24)

Interfaces: RS232

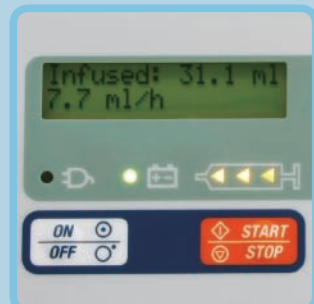
Weight: 2.6 Kg

Dimension (HxWxD): 195x305x135mm

Options: Event log up to 2000events

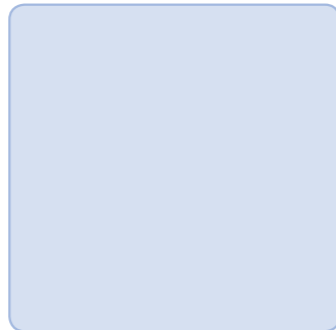
Nurse call

External DC power supply 12VDC



Product Name	Syringe Pump
Flow Rate Range	0.1 ~ 99.9 ml/h (in 0.1 ml/h steps) 100 ~ 1500 ml/h (in 1 ml/h steps)
Volume Infused	0.1 ~ 99999 ml
Volume to be Infused (VTBI)	0.1 ml ~ 999ml or unlimited volume
Mechanical Accuracy	±1%
Volumetric Accuracy with Approved Syringes	±2% or ±0.1ml/h (the greater of these Values)
Compatible Syringes (ml)	10, 20, 30, 50/60, 100ml more than 30 brands
Purge/Bolus Rate	0; 10 ~ 1500 ml/h in 1ml/h steps Note : Maximum infusion and Bolus rate : syringe 10ml : 450ml/h syringe 20ml : 750ml/h syringe 30ml : 950ml/h syringe 50/60ml and 100 ml : 1500ml/h
Occlusion Alarm Pressure	High : 120 kPa ± 35 kPa Medium : 80 kPa ± 25 kPa Low : 40 kPa ± 15 kPa Medium and low levels for 50/60 ml and 100ml syringes only

Concentration	0.01 ~ 9.99 (µg)mg/ml in 0.01 (µg)mg/ml steps 10.0 ~ 99.9 (µg)mg/ml in 0.1 (µg)mg/ml steps 100 ~ 999 (µg)mg/ml in 1 (µg)mg/ml steps
Bolus Doses	0.1 ~ 99.9 ml in 0.1 ml steps 0.01 ~ 9.99 µg, mg, (µg)mg/kg in 0.01 µg, mg, (µg)mg/kg steps 10.0 ~ 99.9 µg, mg, (µg)mg/kg in 0.1 µg, mg, (µg)mg/kg steps 100 ~ 999 µg, mg, (µg)mg/kg in 1 µg, mg, (µg)mg/kg steps
Patient Weight	0.4 ~ 99.9 kg in 0.1 kg steps 100 ~ 200 kg in 1 kg steps
Keep vein open (KVO) Rate & Volume	0.1 ml/h ~ 10 ml/h in 0.1 ml/h steps, 1% of the syringe volume
Protection Type	<ul style="list-style-type: none"> • Automatic/manual purge • Purge rate programming • Calculation of concentration • Total volume display • Autosave, Drug name display • Titration, Standby • Keypad lock • Quiet mode • KVO function • Date and time displaying • Selectable infusion modes (continuous/easy pump) • Syringe set configuration • Drug list configuration • Language configuration • Syringe size detector • Syringe plunger sensor • Alarm volume adjustment



INFUSION SET

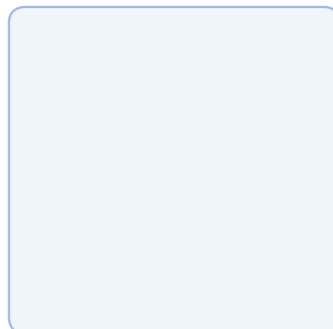
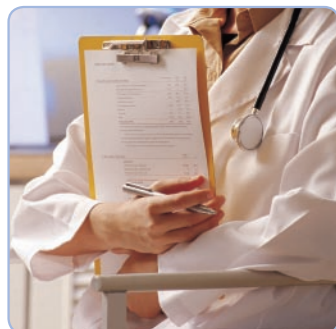
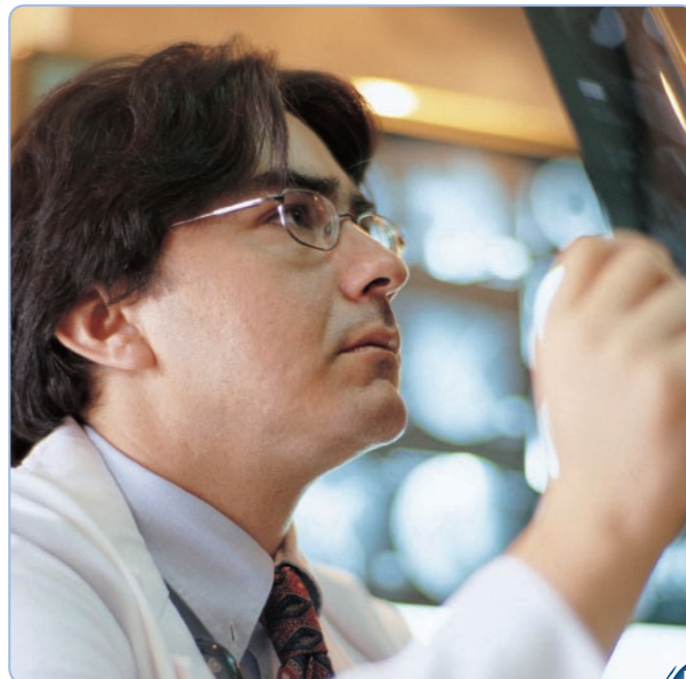
- ETO gas sterilization
- Non-toxic, Non-heavy material, Pyrogen-free
- Double wing double ring ABS spike;
- Air vent, Fluid filter
- Injection molding drip chamber;
- Tubing 1500mm*ø4.6
- Y-connector



FEEDING IV SET

- DEHP Free, In-line PE tubing
- 0.2 µm positively charged Nylon Posidyne membrane
- Non-phthalate, Free of natural rubber latex
- Filter Housing Volume - Approximately 2 mL
- Sterile and non-pyrogenic fluid pathway
- Maximum Working Pressure - 1500 mm HG

DAIWHA



DISPOSABLE SYRINGE

- 1ml, 3ml, 5ml, 10ml, 20ml, 30ml, 50/60ml
- ETO gas sterilization
- Non-toxic, Non-heavy material, Pyrogen-free
- No air-leakage
- Color coded, Ultra-thin wall
- Individually packed in plastic/blister pouch