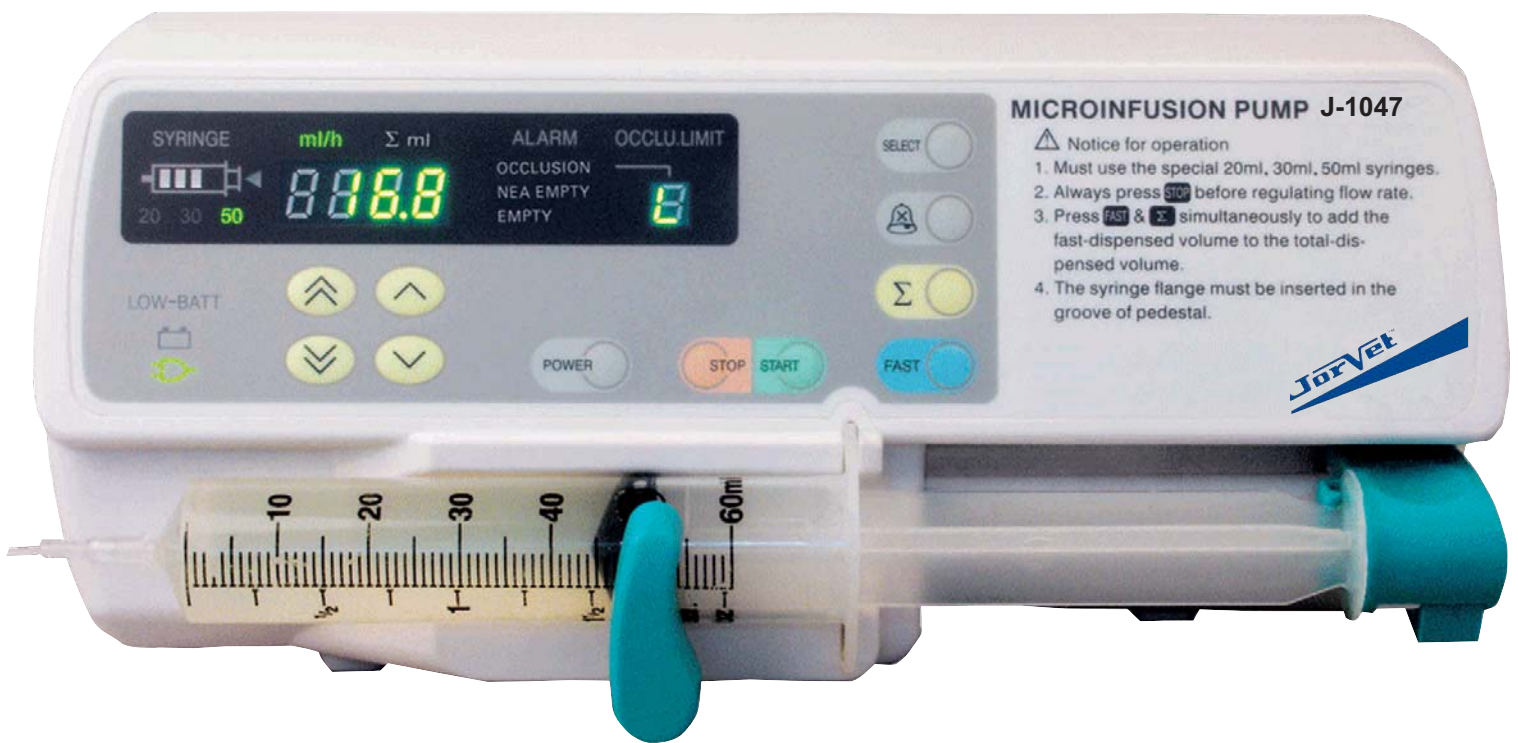


JorVet™

Automated Syringe Pump J-1047

OPERATOR'S MANUAL

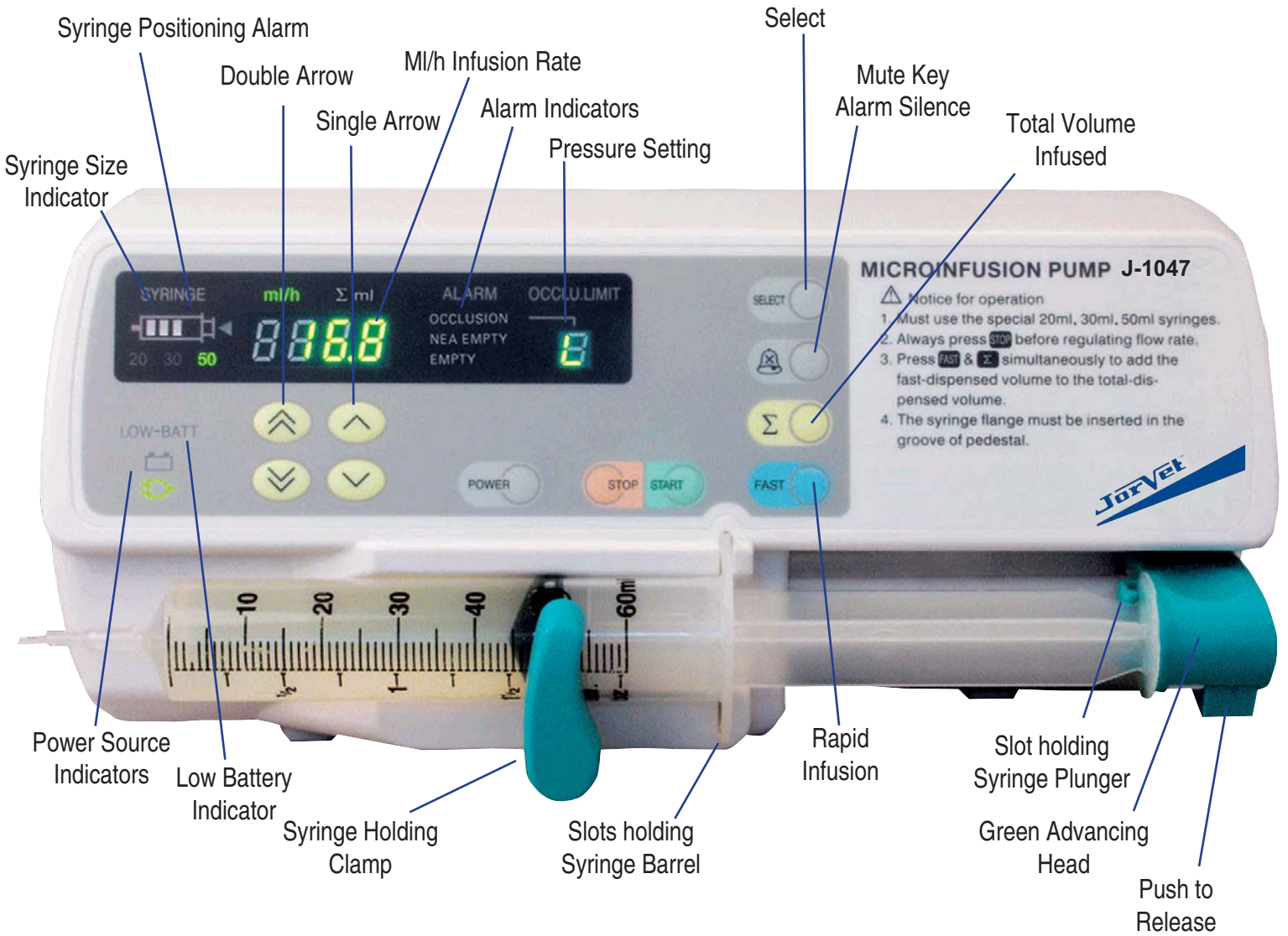


Jorgensen Laboratories, Inc.

1450 Van Buren Avenue
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Please read the instructions in this manual before operating

PUMP OVERVIEW



Instructions for use

Overview of Syringe pump use: The syringe pump will allow precise delivery of IV medication over a chosen period of time. It uses only Monoject disposable syringes from 20ml to 50ml. The pump can also be used as an infusion pump for very small patients.

Overview of Operating Principal of Syringe Pump

This syringe pump is a constant volume pump versus constant pressure older style pumps. The medication volume delivered is not influenced by the resistance or viscosity of the solution being infused. The two parameters rate of infusion and total volume infused are keyed in. The START key is pushed and the pump will begin its infusion. When about 1.5ml of medication is left in syringe the NEAR EMPTY light on pump will flash and intermittent alarm will sound. Pressing the mute button can silence the alarm sound. When the last 1.5ml of medication is delivered, the EMPTY light will flash and alarm will sound. The 35cc Monoject brand of syringe will not empty entirely.

When the infusion is finished the pump will enter into a KVO (Keep Vein Open) mode of very slow infusion.

Some suggested uses:

- Pain medication
- Antibiotics
- Chemotherapy agents
- TPN for smaller patients
- Blood products

Features:

- Flow rate increments; 0.1ml/hr
- Recognizes Monoject syringe size
- Audible and visual alarms
- Power source choice: lithium ion battery or AC 110V

Initial Setup

The lithium battery should be charged completely before use. This is done by plugging in unit with AC power cord into standard 110V outlet. Turn power on briefly, then turn off for battery to start charging. The initial charging will take 15 hours. The battery will normally last about 4 hours. This can vary dependent on dose administered and type of medication delivered

Power Source

There are two icons in the lower left corner that represents the power source being used.

 Battery is being used to power unit

 AC wall current is being used

Low-Bat: will light and blink if battery is near depletion

Mounting Pump

The pump can be mounted on to an IV pole or any round pole. It can also rest on a flat surface. If mounting on a pole is desired, then attach IV pole connector to rear of unit. Use the two hex head screws provided and Allen wrench to tighten those screws. (See figure 1)



Pump mounted horizontally onto IV pole



Figure 1

Pump mounted vertically onto IV pole

Initial Use

Preplanning: requires calculating the dose of medication desired over a chosen time period in the appropriate size syringe. The most popular syringe brand in the US veterinary market is the Monoject® brand. The pump has been especially designed to utilize this and only this brand of syringe.

The syringe should be filled with desired medication: any air bubbles should be removed. A 30" IV extension set (JorVet J-467) or other "T" bore extensions are recommended for separate attachment between syringe and IV catheter.

-The extension set should be connected and primed before syringe is placed into pump.

-Attach syringe to pump as shown on pump overview diagram on page one. The green syringe clamp holds syringe firmly in place. Pull the green syringe clamp out towards you and turn it to the left to open it. Now place the full syringe into position with etching facing outward. The syringe BARREL flanges must slip into slots on pump. The flanged end of the syringe PLUNGER will fit into the slot or groove on the green advancing head. The green advancing head holder can be adjusted by pushing from the bottom to release it. It will then slide easily and the flanged plunger end will snap into the green advancing head. With the syringe in place now engage the green syringe clamp by turning it back to the right. The syringe should now be secure.

Note: The power does not need to be on for the syringe to be secured

Setup Function

-Decide what power source to use either battery or AC wall outlet. If battery is elected make sure it is charged. If AC wall outlet, then plug into wall outlet.

-Push membrane switch labeled "POWER"

-The pump will be checked through a brief period of self-check of 3 seconds. The syringe icon in upper left corner should light up identifying proper syringe size either 20, 35, 50/60 ml.

-Pushing the "SELECT" button repeatedly will allow you to toggle through the various settings.

These various setting will blink and ask for numerical input. These settings include "ML/hr" and Σ dose. These numbers can be entered in by the four "ARROW" keys.

The double arrow keys up and down allow for rapid change of dosage numbers in 1ml intervals. The single arrow keys both up and down allow for slow precise entering of dosage numbers in 0.1ml intervals.

SELECT Button

By pushing this button you will toggle through the following settings:

ML/h: This will light or blink and the operator will use arrow keys to determine dosage rate.

Σ : This will light or blink and the operator will use arrows to determine total volume infused.

The SELECT buttons will only work under STOP condition. If START button is pushed all rate regulating keys or function are locked to prevent accidental changes.

However if the mute or alarm silence key is pressed simultaneously with the select key the preset limit is cleared.

Syringe brand type: The Monoject syringe brand is normally recognized automatically.

Rapid Infusion:

The pump can also be used for rapid infusion of medication. Two different scenarios can be used for this feature.

Output volume is NOT calculated or added to total volume infused. With pump in STOP mode press FAST key two times within 1 second. The 2nd time press and do not release. The actual rapid rate is shown in Technical specs on page 4 of this manual. If "FAST" button is released then pump will return to the original program.

Output volume is calculated into total volume infused. In START mode press FAST key and Σ (total volume) simultaneously. The LED display will show volume infused including rapid infused amount.

Inquiry of total volume Σ

At any time during infusion pushing the Σ will give you total volume infused into patient.

Alarm Prompts

Near empty: when medication in syringes is down to 1.5ml the near empty light will flash and intermittent alarm will sound (NEAR EMPTY)

Empty: when infusion is complete the EMPTY light will flash and alarm intermittently sound

Note: the syringe will not be completely empty in some cases. i.e. 35cc Monoject syringe

The LED display will flash back and forth KVO (Keep Vein Open) 0.5ml/h and original flow rate.

Occlusion: when extension tubing or catheter is blocked. The OCCLUSION alarm will flash and sound. The pump will release pressure on the syringe. After the pressure is released a constant alarm will sound. Press mute key will silence alarm and restore pressure.

- If green clamp holding the syringe is not pressed against syringe an intermittent alarm will sound and syringe will flash
- If plunger on syringe is not inserted into groove on green advancing head, the pump will sound alarm.

Settings of Pressure Value

A pressure setting can be made to where the pump will have an occlusion alarm. It may be set at L” or “H” value. The default value is “L”. If the pump is occluding easily the alarm setting can be raised to the “H” setting. After unit is powered press “SELECT” button twice. OCCL appears on digital display. If single arrow key is pushed the “H” will appear. After the pump is started this cannot be changed.

Start or Use Pump

Pushing the green “START” button will activate pump. The syringe icon in upper left will light in succession repeatedly indicating pump is working. When “ml/h” lights it indicates present flow rate. When Σ button is pushed it will indicate amount infused at present time.

“STOP” Key:

Pushing this key will stop unit. This key is used when infusion is finished and also when an alarm has sounded i.e. occlusion. (blinks red and have audible chimes.)

Technical features and parameters

20ml syringe 0.1-399.9ml/h = infusion rate range

30ml syringe 0.1-600ml/h

50/60ml syringe 0.1-1200ml/h

Fast key or rapid rate

20ml syringe 400ml/hr

30ml syringe 600ml/hr

50/60ml syringe 1200ml/hr

Inquiry of total volume: 0-9999mls 0.1ml increments at above 1000ml will report in 1.0ml increments.

Volume infused limit: 9999ml

Accuracy = \pm 2

Occlusion pressure 40 Newtons \pm 10N (L)

60 Newtons \pm 10N (H)

Power 110V 50/60HZ

DC 12V the pump can continue for 4 hours using an internal battery (after it has been charging for 15 hours) at the rate of 5ml/h.

Precautions and Maintenance

After a prolonged period of use the membrane push button key may collapse inward. Please contact Jorgensen Labs at 1-800-525-5614 if this occurs.

Battery care: if low battery alarm sounds it should be immediately recharged to avoid damage to battery.

Fuse replacement: open rear of case by loosening recessed screws. The fuse is 0.5 AMP.

Note: never submerge syringe pump. The pump is not autoclavable.

Clean: use mild neutral detergent and wipe surface with nonabrasive cloth or towel.



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