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**KANGAROO JOEY™**

**Enteral Feeding Pump**

## Operation and Service Manual

Enteral Feeding Pump — Operation and Service Manual

Nutripompe — Manuel d'utilisation et d'entretien

Pumpe für die enterale Ernährung — Benutzer- und Service-Handbuch

Pompa di alimentazione enterale — Manuale operativo e di manutenzione

Bomba para alimentación enteral — Manual de operación y servicio

Enteral matningspump — Användar- och servicemanual

Enterale voedingspomp — Gebruiks- en onderhoudshandleiding

Bomba de alimentação entérica — Manual de funcionamento e assistência

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Pompa żywienia dojelitowego — Instrukcja obsługi i serwisowania

Enteral Besleme Pompası — Kullanım ve Servis Kılavuzu

Enteral ernæringspumpe — Bruker- og vedlikeholdshåndbok

**AccuSystem™**

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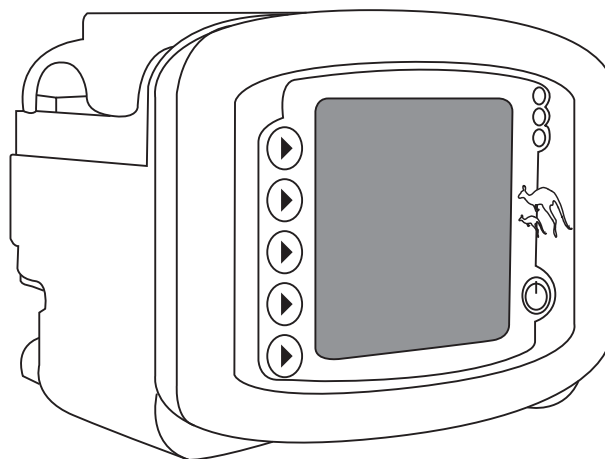
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Thank you for purchasing the KANGAROO JOEY™ Enteral Feeding Pump.  
With proper care, this device will provide you with years of precision service.

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## Section I – General Information

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The KANGAROO JOEY Enteral Feeding Pump is a simple-to-use, precision enteral feeding pump. It is easily programmed to provide patients with either continuous or intermittent feeding, and can provide automatic flushing capability when used with KANGAROO ePump™ Feed & Flush Sets.

### User Interface:

- Intuitive user interface
- Large, backlit LCD display
- Step-by-step prompts to guide programming and operation
- “Stoplight” LED array visually indicates pump status in a bright or darkened room

### Ergonomics:

- Quiet operation
- Compact, portable aesthetic design
- Tabletop usage or IV pole mounting
- Simple loading of pump sets
- Transparent top door to protect pump set
- Water-resistant
- “Soft Touch” rubberized casing for easy grip and drop protection
- “Quick Release” pole clamp for easy detachment of pump

### Features:

- MISTIC (Magnetic Intelligent Set Type Identification Connector) Feed-Only vs. Feed & Flush Set identification system to ensure match between the pump’s user interface and pump set type
- Automatic Anti-Free-Flow (AFF) System
- Audible alarm to indicate errors or pump set loading conditions
- Orientation-independent delivery design eliminates need for drip chamber on pump set
- Sensor technology detects both upstream and downstream flow conditions
- Continuous feed, intermittent feed, and flush capability
- Auto-prime feature reduces the need for time-consuming manual priming
- Hold feature with restart
- “Keep Tube Open” (KTO) feature
- Stores previous 72 hours of feeding and flushing history
- 15 Languages
- All sets operating on the KANGAROO ePump Enteral Feeding Pump will also operate on the KANGAROO JOEY Enteral Feeding Pump

**Service:**

- Serial I/O port for data retrieval and software updates
- Uses replaceable, rechargeable Lithium-Ion Battery Pack for 18 hours of backup power
- Easily removable power cord

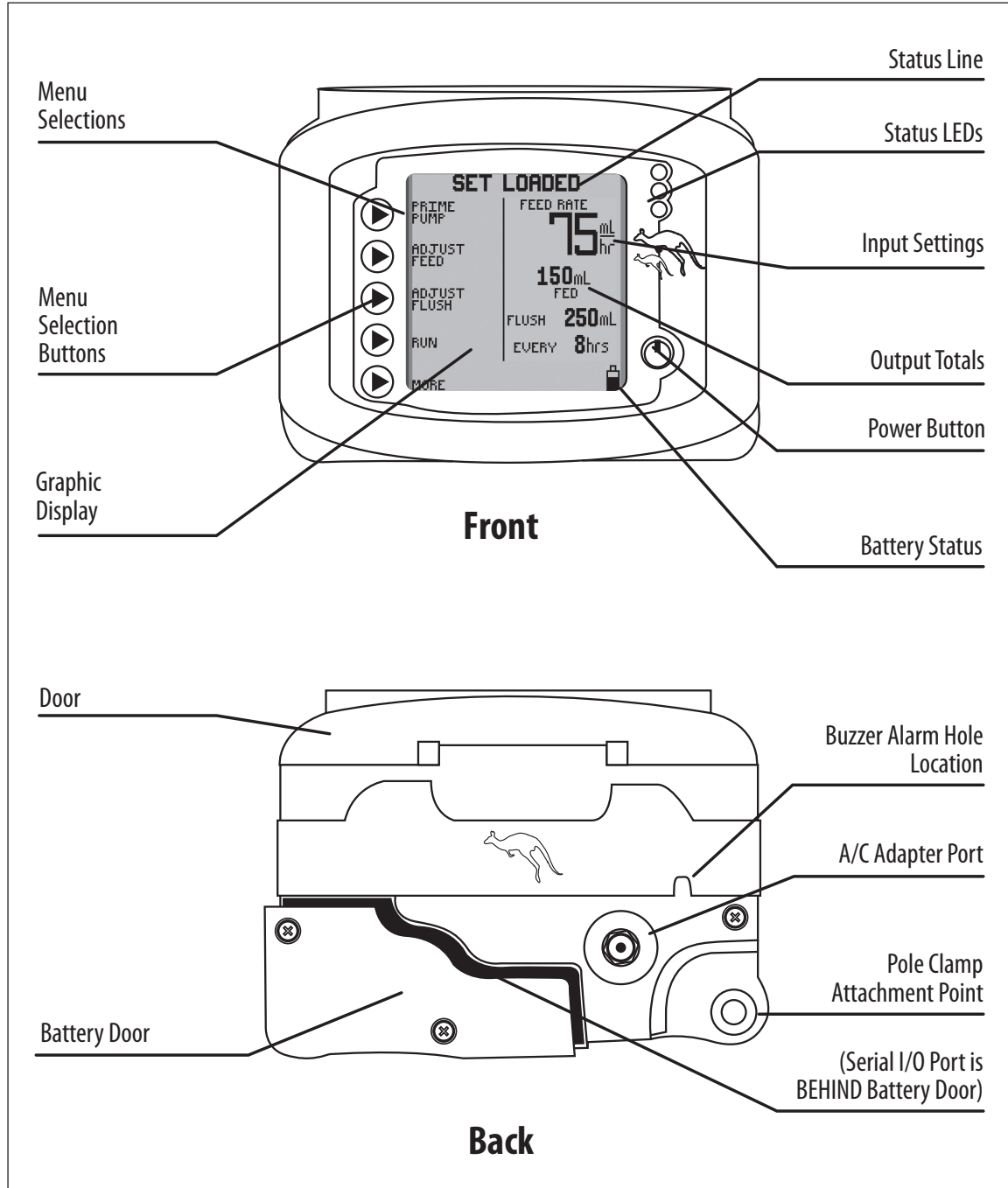


Figure 1A. KANGAROO JOEY Enteral Feeding Pump features, front and rear views.

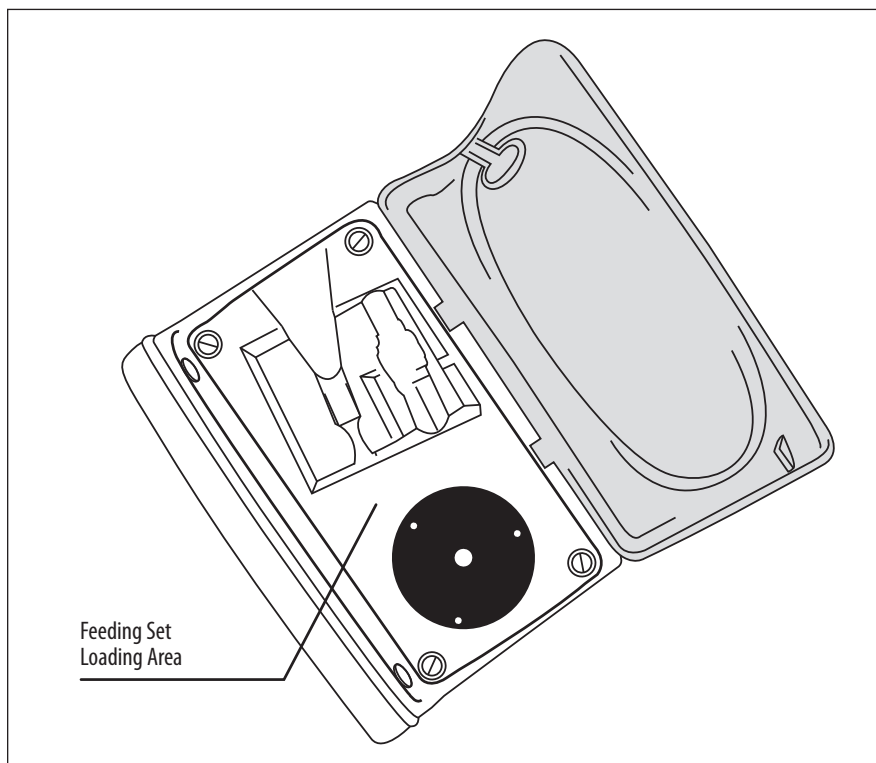


Figure 1B. KANGAROO JOEY Enteral Feeding Pump set loading area.

## Section II — Safety and Warnings

**CAUTION:** U.S. federal law restricts the sale of this device to physicians or to their direct representatives.

1. Read this booklet thoroughly before using the KANGAROO JOEY Enteral Feeding Pump.
2. Do not use this device near flammable anesthetics.
3. Disconnect power supply before cleaning or servicing.
4. The KANGAROO JOEY Enteral Feeding pump utilizes a two prong, medical grade power supply cord specifically designed for use only with the KANGAROO JOEY feeding pump's Lithium Ion battery charging circuit. **Use of an alternate consumer style power cord or DC car adapter may cause damage to the charging circuit and battery of the KANGAROO JOEY feeding pump.** Use only the supplied power adapter to charge your KANGAROO JOEY feeding pump from an AC power source. Use only KANGAROO JOEY Enteral Feeding Pump power cord (with built-in A/C adapter) with pump. See Section XIII - Service Part Numbers for replacement of power cord.
5. Use only KANGAROO ePump Enteral Feeding Pump sets with this device. Pump is not compatible with other pump sets.
6. For re-certification, see Section VI - Re-certification of Performance. For other integrity checks, consult with a qualified Biomedical Technician or contact the manufacturer (Section XI - Customer Service).
7. For service or for technical information, please contact Customer Service (Section XI).
8. Do not open the main housing, as there are no user-serviceable parts inside. Opening may affect function of device and voids the warranty. To replace battery, see Section VIII.
9. Dispose of old battery-powered electronic equipment in a manner consistent with institutional policy for expired equipment disposal.
10. Cleaning frequency and practices must be consistent with institutional policy for cleaning of non-sterile devices. See Section VII - Cleaning, for instructions on cleaning the KANGAROO JOEY Enteral Feeding Pump.
11. See icon descriptions in Section III - Icon Identification and Section X - Specifications and Symbols for additional safety information.
12. This device is designed to minimize the effects of uncontrolled electromagnetic interference and other types of interference from external sources. Avoid use of other equipment that may cause erratic operation or degradation in the performance of this device.
13. **WARNING:** The serial I/O port (see Figure 1A) is intended only for use by the manufacturer.

Any accessory equipment that can be connected to the serial I/O port, and which does not comply with the equivalent safety requirements

of this equipment, may lead to a reduced level of safety of the pump. While use of the pump's serial port is not recommended for customers, the following should be considered in the event that the customer decides to connect to this port:

- The accessory is specifically certified as complying with the safety requirements for accessories used with the pump, whereas the safety certification of the accessory has been performed in accordance to the appropriate IEC 60601-1 and/or IEC 60601-1-1 harmonized standard.
  - Under no circumstances should the certified accessory be connected to the serial I/O port while pump is in use for enteral feeding of a patient.
14. **CAUTION:** This enteral feeding pump should only be used for patients who can tolerate the flow rates and accuracy levels delivered by the pump. Premature infants may require higher accuracy rates than specified for this enteral feeding pump. **For optimal accuracy, the top of the starting volume of formula should be 6 inches above the pump, do not reuse feeding sets and avoid overstretching the silicone that wraps around the pump rotor.**
  15. Do not attempt to rotate the valve stem inside the feeding set valve assembly. Rotation of the valve stem can only be done by the pump while the valve assembly is properly loaded into the pump.
  16. Should feeding sets require rinsing, it is recommended that the feeding sets be rinsed while they are loaded in the pump.
  17. **The KANGAROO JOEY Enteral Feeding Pump has been programmed to optimize accuracy by taking into account the viscosity of formula. Formula that has been diluted and has a low viscosity will tend to deliver like water and thus deliver to the high side of the accuracy specification.**
  18. **CAUTION:** Ensure buzzer hole is unobstructed during normal operation so as to allow clear recognition of alarm.
  19. **CAUTION:** The battery cells used in this device may present a fire or chemical hazard if mistreated. Do not disassemble, heat above 100°C (212°F), or incinerate.

## Section III – Icon Identification

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### Run Mode

Vertically-moving droplet in *RUNNING* screen indicates Run mode.



### Battery Symbols

- Full charge
- 2/3 or less charge
- 1/3 or less charge
- Very low battery (15 minutes max.)



### Auto Priming Indicator

When auto priming, the bar will progress to show auto prime feature is active.



### Volume Setting

Indicates alarm volume setting.



### Error Indicator

Pump operations are stopped until the error is resolved.





### Information Indicator

This indicates information only, and does not require any immediate action.



### EZ Pump Mode Indicator

Indicates that EZ Pump Mode feature is activated.



### Communication Indicator

Indicates that communication feature is activated.



### Volume to be Delivered Indicator

Indicates that a VTBD has been programmed.



### Keep Tube Open

Indicates that Keep Tube Open feature is in operation.



## Section IV — Initial Setup

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### Attaching the A/C Adapter Power Cord

Plug the Power Cord into the A/C Adapter Port on the back of the pump. See Figure 1A to locate port on pump.

NOTE: It is important to make sure the power plug is pushed all the way into the pump for proper operation. If the display screen shows the pump is running on battery power after plugging in the A/C Adapter, check to make sure the A/C Adaptor plug is flush with the back of the pump.

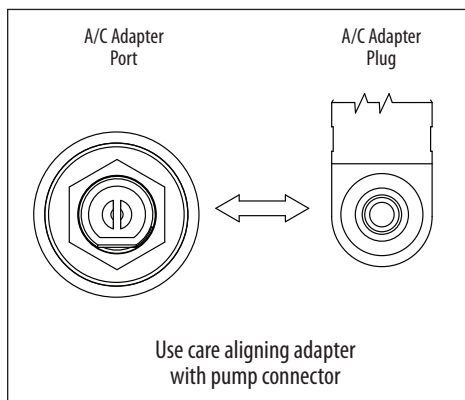


Figure 2A. Alignment of A/C Adapter plug with pump's adapter port.

### Do not detach the connector by pulling on the cord only.

(A cord extension accessory is available that will allow the wall plug to be separated from the power transformer, see Fig. 2B. The cord extension order number is located on page 38.)

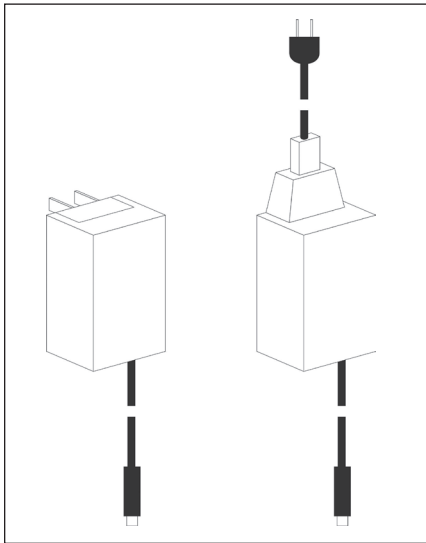


Figure 2B.

## Battery Setup

The battery is packed partially charged. Charge battery 6 hours prior to use off A/C power.

It is also recommended that the battery charge be “topped off” before battery-only operation is utilized. The battery pack will charge continuously whenever the pump is plugged into a wall outlet, including during normal use of the pump with A/C power. 6 hours of charging is required to fully recharge the battery pack.

A new battery pack will provide approximately 18 hours of service before needing to be recharged.

## Attaching Pole Clamp

The KANGAROO JOEY Enteral Feeding Pump can be attached to a vertical pole using the pole clamp which is included with the pump (a flexible arm pole clamp may also be purchased and attached to the vertical pole – Figure 3B). The pole clamp provides the ability to retain the power cord to prevent accidental cord removal or cord loss. Simply wrap the cord around the cord wrap posts to ensure that the cord stays with the pump.

To attach the pole clamp to the pump, simply slide the clamp onto the mounting stud on the back of the pump (Figure 3A). When engaged, turn the lever to secure attachment. Avoid overtightening or loosening of handle.

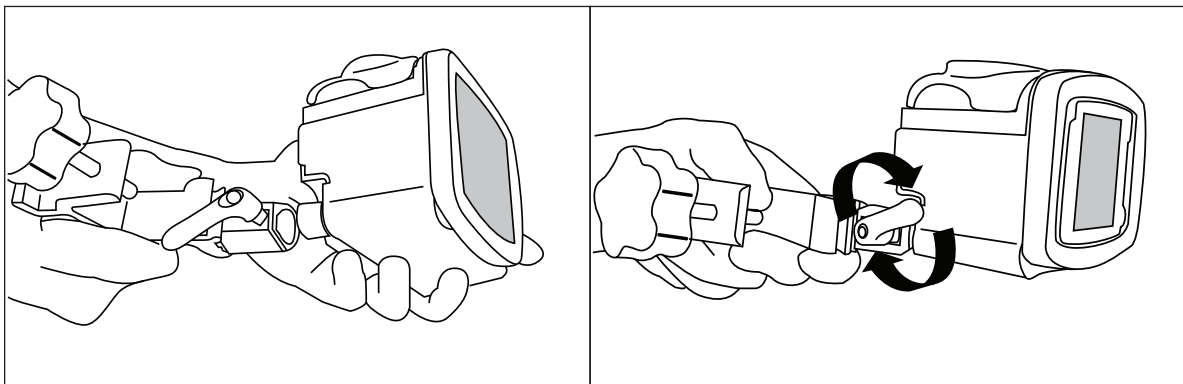


Figure 3A.

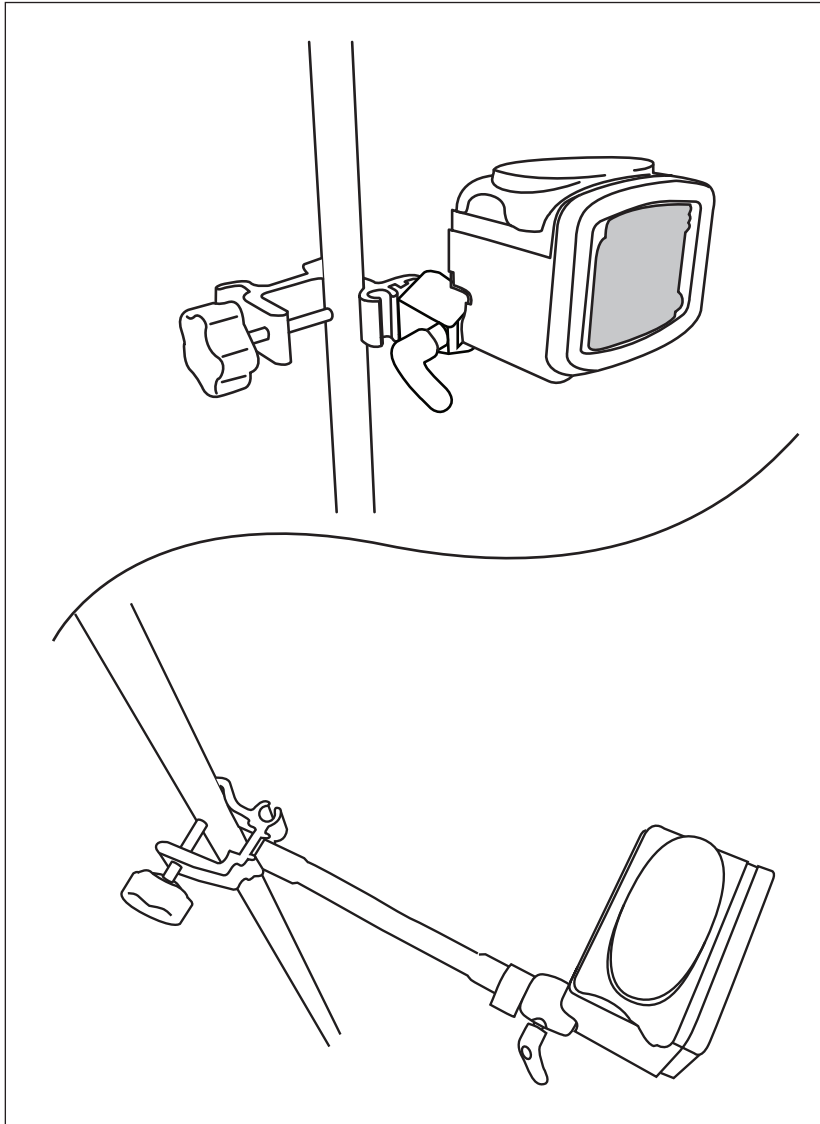


Figure 3B. Attaching and using the Pole Clamps.

## Section V — Instructions For Use

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### Quick Start

1. Press **⏻ POWER** on lower, right-hand corner of control panel.
2. Open blue door enclosing pump set loading area.
3. To load pump set (refer to Figure 4):
  - Grasp finger tab on valve and insert into front pocket (1).
  - Grasp black ring retainer and wrap tubing around rotor (2). Pull up on retainer and insert into back pocket (3). **Avoid overstretching the silicone tube.**
  - Push finger tab to right to ensure that valve is fully seated in the pocket.
  - Close blue door.

(**Note:** display status line should read **SET LOADED**).

4. **Suspend the pump set bag so that the top of the starting volume of formula is 6 inches above the pump (Figure 4B).**
5. To automatically prime the pump, press ▶ **PRIME PUMP** and ▶ **AUTO PRIME**. For Feed & Flush sets, auto priming will prime both lines.
6. To directly control pump priming, press ▶ **PRIME PUMP** and then press and hold the **HOLD TO PRIME** button(s) ▶ . If a Feed & Flush Set is used, remember to first press ▶ **HOLD TO PRIME FLUSH** until the flushing fluid has reached the valve, and then press ▶ **HOLD TO PRIME FEED** until the feeding fluid has reached past the valve and down to the distal end connector.
7. Use buttons ▶ on left side of LCD to set the feeding parameters. Set flushing parameters if a Feed & Flush Set is loaded. The continuous or intermittent feed mode selection is made under the **MORE** options menu.
8. Press ▶ **RUN** when ready to start. The screen will display **RUNNING**.
9. To stop, press ▶ **HOLD** or press and hold the ⏻ **POWER** button.

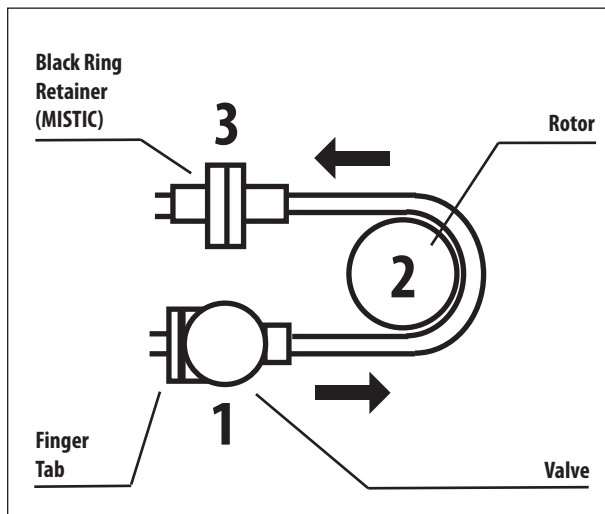


Figure 4A. Installation of Pump Set. (See Figure 6 for detailed view.)  
**WARNING: DO NOT OVERSTRETCH TUBE.**

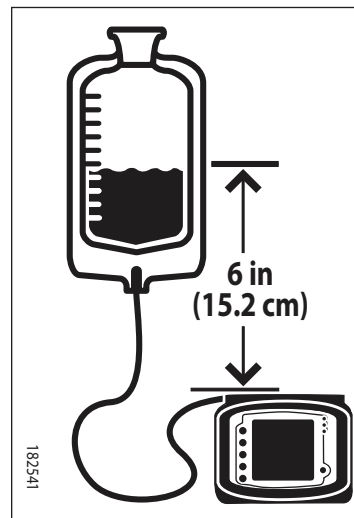


Figure 4B. Correct Fluid Level.

## General Startup

### Placement/Mounting

There are two recommended placement methods for the KANGAROO JOEY Enteral Feeding Pump.

- Attached to a vertical IV pole via the pole clamp peripheral device, included with the pump.
- Placed on any stable surface.

### A/C Power Operation

Plug the KANGAROO JOEY Enteral Feeding Pump into an A/C power outlet for normal operation. When the pump is not plugged in, or if A/C power is interrupted, a built-in rechargeable battery will run the pump.

### Battery Power Operation

If A/C power is not available to the pump, or if A/C power is interrupted, the pump will automatically operate on backup battery power. The built-in battery recharges any time the pump is plugged into an outlet.

A fully-charged, new battery will supply 18 hours of backup power at 125 mL/hr before requiring recharging. Contact Customer Service, Section XI, to replace the battery pack if battery life degrades.

**Note:** The KANGAROO JOEY Enteral Feeding Pump will not operate unless an approved KANGAROO JOEY Enteral Feeding Pump battery pack is installed in the pump.

## Power On/Off

To power up the pump, press the **POWER** button on the lower right of the front panel. To power down the pump, press and hold the **POWER** button until the pump display turns off.

## Language Selection, First Power Up

Immediately after powering up the pump for the *first time*, the language option screen will appear. Select the language using the ( **↑** ) or ( **↓** ) buttons. When the language is selected, push the fifth button ( **→** ) to enter the language selection. After the language is selected the first time the pump is powered up, the language selection screen will not appear during future power up operations. Should the language need to be changed after the initial power up, it can be changed through the **"MORE OPTIONS"** menu (see Figure 10A).

## Keep or Clear Prior Pump Settings

Immediately after powering up the pump, if the prior feed or flush settings were not cleared and the settings are not locked in the BioTech Screen, the pump will give the following two options:

**KEEP SETTINGS** - Select this option to start with the same settings that were most recently programmed into the pump. Any of the previously-programmed settings can be modified, if needed. The feed volume totals, **"mL FED"** (Continuous Feed Mode) or **"BOLUSES FED"** (Intermittent Feed Mode) and **"mL FLUSH"** are also maintained. If VTBD has been set, the VTBD setting originally programmed will not change, however value to be delivered will restart at one.

**CLEAR SETTINGS** - Select this option to reset all input feeding settings and the output feed totals to zero. It will then be necessary to program all settings before running the pump. The BioTech options settings will not change.

**Note:** The output feed totals (**"mL FED," "BOLUSES FED," "mL FLUSH"**) can be cleared at any time, and without clearing the input settings, by doing the following:

- Start the pump **RUNNING**
- Press **▶ HOLD**
- Press **▶ CLEAR VOLUME**

The status line of the pump will then show **LOAD A SET** (Figures 5A-5B), or, if the pump set is already loaded, it will show **SET LOADED** (Figures 7A-7D).

## Loading Pump Sets

The KANGAROO JOEY Enteral Feeding Pump will indicate **LOAD A SET** in the screen's status line if a pump set is not installed. A blinking icon of a pump set will also appear in the upper left corner of the screen. Figure 5A shows the screen for continuous feeding mode and Figure 5B shows the screen for intermittent feeding mode (intermittent feeding mode not available in EZ Pump Mode).

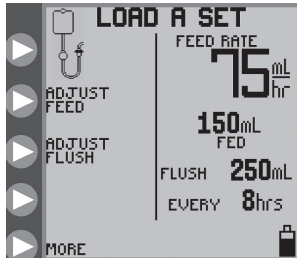


Figure 5A. **LOAD A SET** opening menu screen for Continuous Feeding mode (EZ Pump Mode not activated).

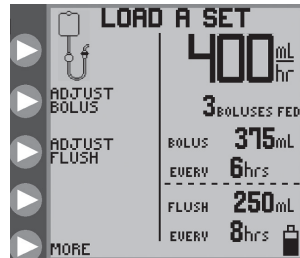


Figure 5B. **LOAD A SET** opening menu screen for Intermittent Feeding mode (EZ Pump Mode not activated).

To load a Pump Set, follow the steps below:

1. With the pump display facing you, open the blue transparent door that encloses the rotor and pump set loading area.
  2. Load the pump set by holding the finger tab on the valve, then inserting the valve into the valve slot on the left. (Figure 6A)
  3. Grasp the MISTIC retainer end (black ring retainer) and wrap the tubing counterclockwise around the rotor. **Avoid overstretching the silicone tubing. (Figure 6B).**
  4. Carefully pull the MISTIC retainer end left and upwards to position it over the slot on the left, and then lower the retainer into the slot. Push down on the retainer then release to ensure proper engagement. (Figure 6B)
  5. Push the valve's finger tab to the right to ensure proper seating.
  6. Close the blue transparent door, checking to make sure the valve finger tab is captured by the slot in the blue door.
- NOTE: To avoid nuisance alarms, make sure the pump set exterior is free from droplets of water or formula.
7. **The top of the starting volume of formula should be 6 inches above the pump (Figure 4B).**

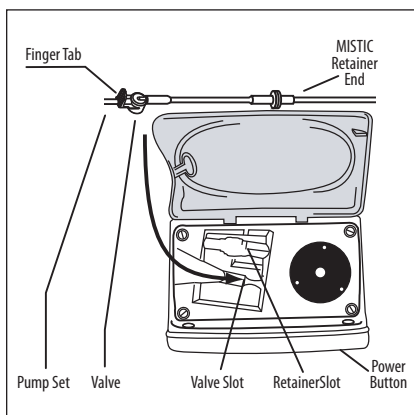


Figure 6A.

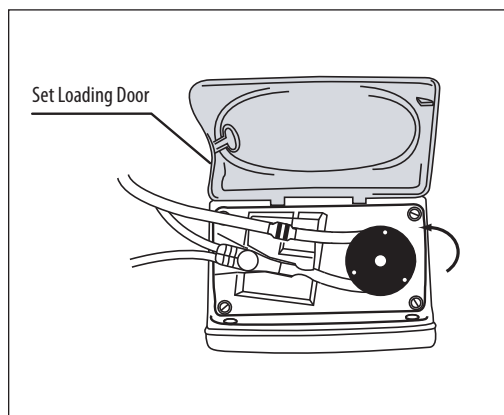


Figure 6B.

The display should read **SET LOADED** and will show one of the following opening menus, depending on the type of pump set detected, and whether continuous or intermittent feeding mode has been selected.

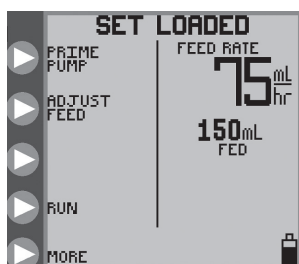


Figure 7A. Opening menu for Continuous Feed mode with a Feed-Only set.

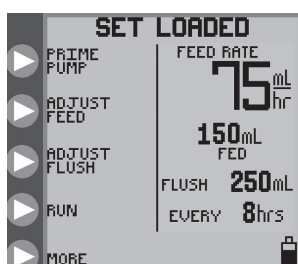


Figure 7B. Opening menu for Continuous Feed mode with a Feed & Flush set.

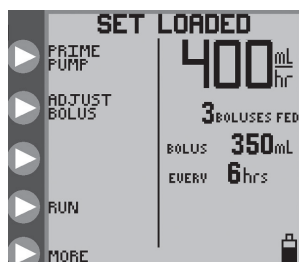


Figure 7C. Opening menu for Intermittent Feed mode with a Feed-Only set.

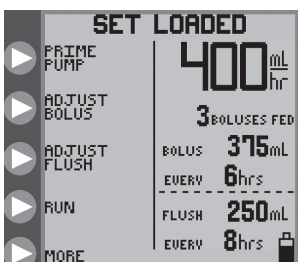


Figure 7D. Opening menu for Intermittent Feed mode with a Feed & Flush set.

## Prime Pump

The KANGAROO JOEY Enteral Feeding Pump may be primed automatically with a single button push, including the flushing line if a Feed & Flush Set is loaded. The pump can also be primed in a more interactive method using the hold-to-prime feature.

After a pump set has been loaded and the status line shows **SET LOADED**, press ► PRIME PUMP in the opening menu (Figures 7A-7D) to get one of the **PRIME PUMP** menus shown in Figures 8A and 8B.

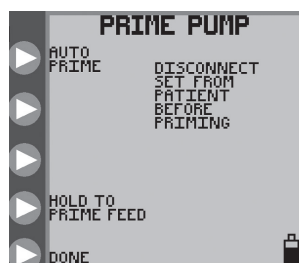


Figure 8A. PRIME PUMP menu for Feed-Only set.

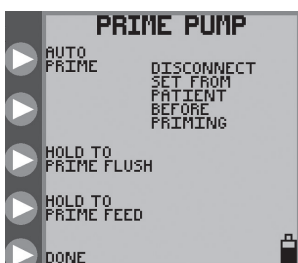


Figure 8B. PRIME PUMP menu for Feed & Flush set.

## Auto Priming

The **AUTO PRIME** option will be available if the pump senses that the currently installed pump set was not previously primed, and that there is no fluid in the line near the rotor. If auto-priming is desired, press and release ► **AUTO PRIME** to automatically prime the line(s). For Feed & Flush Pump Sets, the auto prime feature will automatically prime both lines, starting with the flush line.

Press ► **STOP** to cancel **AUTO PRIME**.

When auto-priming is completed, the status line will show **AUTO PRIME COMPLETE** and will no longer show the **AUTO PRIME** option. Be sure that the line(s) are fully primed. If not, use the hold-to-prime option(s) to complete the priming, as described below.

## Hold-to-Prime

The hold-to-prime options allow for precise interactive control of the priming process.

## Feed-Only Pump Sets

For Feed-Only Pump Sets, the screen will appear as in Figure 8A. Press and hold ▶ **HOLD TO PRIME FEED** until the feed line has been primed down to the stepped end connector at the end of the pump set.

## Feed & Flush Pump Sets

For Feed & Flush Pump Sets, the display will appear as in Figure 8B. First press and hold ▶ **HOLD TO PRIME FLUSH** to prime the flushing line, and then press and hold ▶ **HOLD TO PRIME FEED** to prime the feed line down to the stepped end connector at the end of the pump set.

If a Feed & Flush Pump Set is used, remember to first press ▶ **HOLD TO PRIME FLUSH** until the flushing fluid has reached the valve, and then press ▶ **HOLD TO PRIME FEED** until the feeding fluid has reached past the valve and down to the stepped end connector. If the feeding line is primed first, subsequent priming of the flushing line will force the air between the flush solution bag and valve into the main line, which already has been primed with enteral formula.

## Re-priming after Bag Empty

A pump set bag that has been emptied will trigger the **FEED ERROR** screen. In this condition the pump set bag can be refilled to continue the feeding, but only after the pump set has been re-primed.

To re-prime the pump set, do the following:

- ***Disconnect the feeding line from the patient***
- Refill the bag
- Press ▶ **CONTINUE** to begin the pump **RUNNING**
- Press ▶ **HOLD**
- Press ▶ **ADJUST SETTINGS**
- Press ▶ **PRIME PUMP**
- Press ▶ **HOLD TO PRIME** to prime the line(s)

Pump sets should not be reused after 24 hours of initial usage.

## Selecting Feed Mode

### EZ Pump Mode Option

The **EZ PUMP MODE** option is a limited, **CONTINUOUS MODE** only setting of KANGAROO JOEY Enteral Feeding Pump. It feeds non-stop (no VTBD option) at a rate 0-400mL/hr as defined by the user until manually stopped. It has no **BOLUS, FLUSHING, RUN MODE SCREEN LOCK**, or **AUTORESUME** capability and displays no **HISTORY** information.



Turning on **EZ PUMP MODE** will automatically force the unit out of the **INTERMITTENT (BOLUS FEED)** mode if set. Although the Continuous Mode feed VTBD will be set to 0 while **EZ PUMP MODE** is enabled, the previous value of the **Feed VTBD** will be stored in the pump memory and recalled when “**EZ PUMP MODE**” is deselected. The user can change the Feed Rate by normal means. All other user settings, including those not compatible with the **EZ PUMP MODE (BOLUS VTBD, NUMBER OF BOLUSES, SUPER BOLUS, etc)**, that were set before the pump was put into the **EZ PUMP MODE** will be ignored and invisible while in **EZ PUMP MODE** but remain stored in the pump memory for when **EZ PUMP MODE** is deselected. **EZ PUMP MODE** essentially has no effect on **CLEAR SETTINGS**; pressing **CLEAR SETTINGS** while **EZ PUMP MODE** is enabled will clear all Feed and Flush settings and totalizers as normal, not just those that apply to **EZ PUMP MODE**. Selecting the **CLEAR SETTINGS** option on power up will not clear **Biotech Options** such as **EZ PUMP MODE** or **LOCK SETTINGS**.

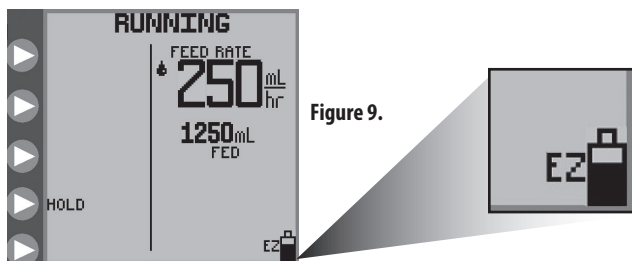
If the user selects the **ADJUST FEED** option from either the **LOAD A SET** or **SET LOADED** screens, control will pass directly to and from the Enter Feed Rate screen and bypass the **ADJUST FEED** screen since without the ability to adjust VTBD in **EZ PUMP MODE**, the Adjust Feed screen is redundant.

## Selecting EZ Pump Mode

**EZ PUMP MODE** may be selected through the **Biotech Options** button which may be accessed on the Biotech screen (see page 22). The **EZ PUMP MODE** setting will be stored in the machine pump memory and saved when the unit is shut off.

**NOTE:** If the user inserts a Feed/Flush set while the **EZ PUMP MODE** is enabled, **EZ PUMP MODE** will be cancelled and the unit will immediately revert back to the normal mode. If **EZ PUMP MODE** is desired, the user must then re-enable **EZ PUMP MODE** through the **Biotech Options** screen.

When enabled and not in **CERTIFICATION MODE**, a small **EZ** icon will be visible on the bottom of the screen near the battery icon. However, it will not appear in the **POWER DOWN, SYSTEM ERROR, or LOW BATTERY SCREENS**.



## Selecting Continuous or Intermittent Feed Mode

The KANGAROO JOEY Enteral Feeding Pump can be programmed to feed continuously or intermittently.

The continuous feeding mode will deliver the enteral nutrition at a steady rate, either until the programmed volume has been delivered or until the supply has been exhausted. The Intermittent feeding mode delivers boluses of enteral nutrition at programmed time intervals. The bolus volume and feed rate are also programmed.

To select continuous feed mode or intermittent feed mode, press ► **MORE** on the opening menu, shown in Figures 5A-5B or Figures 7A-7D, to access the **MORE OPTIONS** menu, Figure 10A.

The **MORE** option is available either before a pump set has been loaded (Figures 5A-5B) or after the pump set is loaded (Figures 7A-7D). See subsection “More Options” for information on the other options in the **MORE OPTIONS** menu.

Select ► **CONTINUOUS/INTERMITTENT** under the **MORE OPTIONS** menu, Figure 10A. Then press ► **CONTINUOUS MODE** or ► **INTERMITTENT MODE** from the **SELECT MODE** menu, Figure 10B. Press ► **DONE** to exit.

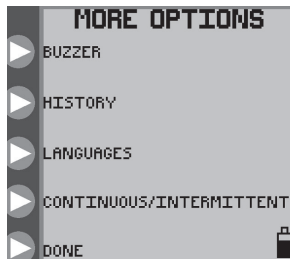


Figure 10A. **MORE OPTIONS** menu.

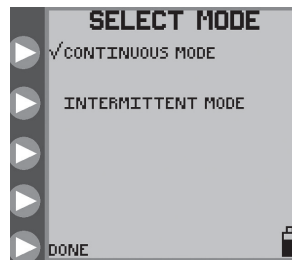


Figure 10B. **SELECT MODE** menu for continuous or intermittent mode selection.

## Continuous Mode — Adjust Feed

### Continuous Mode Feeding

For **CONTINUOUS** feeding mode, the **ADJUST FEED** option is available in the opening menus (Figure 7A for Feed-Only sets or Figure 7B for Feed & Flush sets). Select this option to program the feeding parameters from the **ADJUST FEED** screen, Figure 11A.

Press ► **FEED RATE** in Figure 11A to define the rate of delivery. Press the ► buttons in Figure 11B to program the rate from 1 to 400 in increments of 1 mL/hr. Press ► **ENTER** (top button) to exit the menu.

Press ► **FEED VTBD** in Figure 11A to define the Volume To Be Delivered. Press the ► buttons in Figure 11C to program the volume from 1 to 3000 mL in increments of 1 mL. Press ► **ENTER** (top button) to exit the menu. If the **FEED VTBD** is set to zero, the pump will run until the supply is exhausted.

**NOTE:** When a **FEED VTBD** is set, the remaining volume to be delivered (remaining VTBD) will be displayed next to the  icon on the lower right-hand portion of the screen (Figure 11A). If the **FEED VTBD** is reprogrammed during a feeding, from **HOLDING** mode, the pump will restart the feeding and deliver the entire volume of the new VTBD setting.

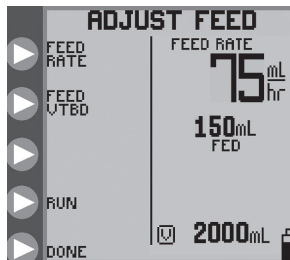


Figure 11A. **ADJUST FEED** menu.

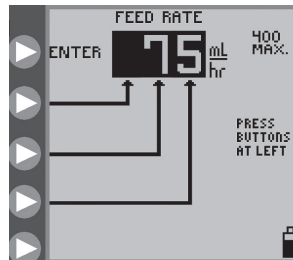


Figure 11B. Setting the Feed Rate.

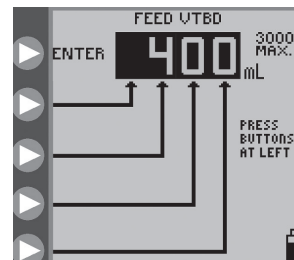


Figure 11C. Setting the Feed Volume to be Delivered.

### Continuous Mode Flushing (Not Available in EZMODE)

For **CONTINUOUS** feeding mode with a Feed & Flush Set loaded, the opening menu will appear as shown in Figure 7B.

Press ► **ADJUST FLUSH** in Figure 7B to program the flushing parameters from the **ADJUST FLUSH** screen, shown in Figure 12A.

Press ► **FLUSH VOLUME** in Figure 12A to define the volume per flush occurrence. Press the ► buttons in Figure 12B to program the flush volume from 10 to 500 in increments of 1 mL. Press ► **ENTER** (top button) to exit the menu.

Press ► **FLUSH INTERVAL** in Figure 12A to define the time interval between starts of flushing. Press the ► buttons in Figure 12C to program the time interval from 1 to 24 hours in increments of 1 hour. Press ► **ENTER** (top button) to exit the menu.

The pump will automatically limit flushing settings which exceed pump capabilities to deliver.

**CAUTION:** The KANGAROO JOEY Enteral Feeding Pump flushes at a rate of 1960 mL/hr (32.7 mL/minute). Use care when programming the flush volume so that it matches the patient's need.

**NOTE:** The pump will automatically flush an additional 25 mL of water after completing the programmed delivery of formula, as long as at least one flush had occurred during formula delivery.

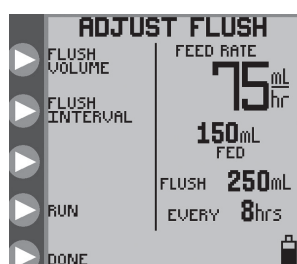


Figure 12A. **ADJUST FLUSH** menu, continuous mode.

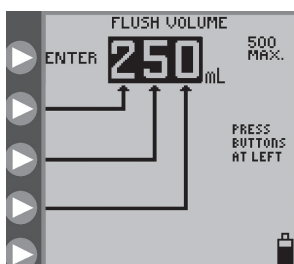


Figure 12B. Setting the Flush Volume.

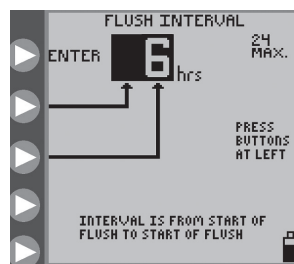


Figure 12C. Setting the Flush Time Interval.

## Intermittent Mode — Adjust Bolus (Not Available in EZ Pump Mode)

### Intermittent Mode Feeding

For **INTERMITTENT** feeding mode, the **ADJUST BOLUS** option is available in the opening menus (Figure 7C for a Feed-Only set or Figure 7D for a Feed & Flush set). Select this option to program the feeding parameters from the **ADJUST BOLUS** screen, Figure 13A.

Press ► **BOLUS RATE** in Figure 13A to define the rate of delivery.

Press the ► buttons in Figure 13B to program the delivery rate from 1 to 400 in increments of 1 mL/hr. Press ► **ENTER** (top button) to exit the menu.

Press ► **NUMBER OF BOLUSES** in Figure 13A to define the total number of boluses to be delivered.

Press the ► buttons in Figure 13C to program the number of boluses, up to a maximum of 99.

Press ► **ENTER** (top button) to exit the menu. The number of boluses can be set as zero, in which case the pump will run until the supply is exhausted.

Press ► **VOLUME PER BOLUS** in Figure 13A to define the Volume to be delivered in each bolus.

Press the ► buttons in Figure 13D to program the volume per bolus from 1 to 3000 mL in increments of 1 mL.

Press ► **ENTER** (top button) to exit the menu.

Press ► **BOLUS INTERVAL** in Figure 13A to define the time interval between starts of bolus deliveries.

Press the ► buttons in Figure 13E to program the time interval between starts of bolus deliveries from 1 to 24 hours in increments of 1 hour. Press ► **ENTER** (top button) to exit the menu.

The pump will automatically limit bolus settings which exceed pump delivery capabilities. For example, a bolus delivery volume of 200 mL cannot be made once per hour if a rate of 150 mL/hr is already programmed. In this case, the maximum volume allowed would be 150 mL.

**NOTE:** If the **NUMBER OF BOLUSES** is reprogrammed during a feeding (from HOLD mode), the pump will restart the bolus feeding and will deliver all the boluses as defined by the new setting.

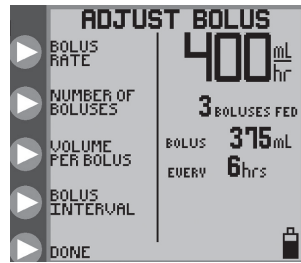


Figure 13A. *ADJUST BOLUS* menu.

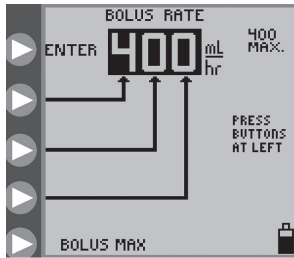


Figure 13B. Setting the Bolus Rate.

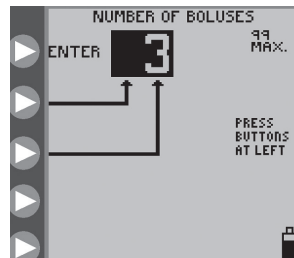


Figure 13C. Setting the Number of Boluses.

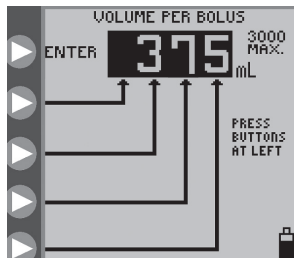


Figure 13D. Setting the volume per Bolus.

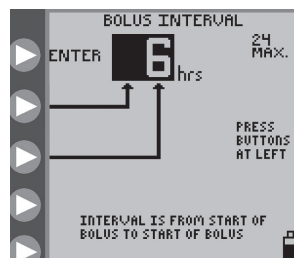


Figure 13E. Setting the time interval between starts of bolus.

### Intermittent Mode Feeding – Bolus Max (Not Available in EZ Pump Mode)

The **BOLUS MAX** option can be used to deliver a bolus at a high rate, similar to gravity feeding.

Press ► **BOLUS MAX** in the **BOLUS RATE** menu, Figure 13B, to program the **BOLUS MAX** mode.

The feeding rate for **BOLUS MAX** is 999 mL/hr.

### Intermittent Mode Flushing

For **INTERMITTENT** feeding mode with a Feed & Flush Set, the opening menu, shown in Figure 7D, will show the **ADJUST FLUSH** option. Press ► **ADJUST FLUSH** in Figure 7D to program the flushing parameters from the **ADJUST FLUSH** screen, Figure 14A.

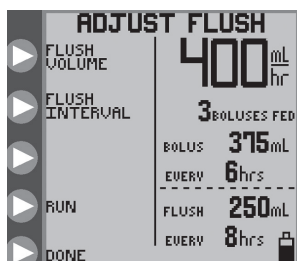


Figure 14A. *ADJUST FLUSH* menu, intermittent mode.

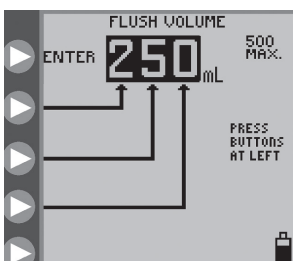


Figure 14B. Setting the Flush Volume.

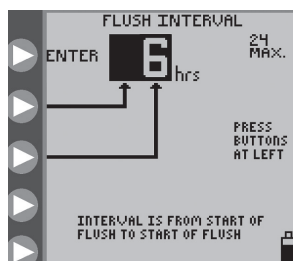


Figure 14C. Setting the Flush Time Interval.

**Note:** The nature of two intermittent processes, periodic bolus feeding and periodic flushing, is such that occasional conflicts can arise where each process needs to be running at the same time. The flushing process is assigned precedence over the feeding process for Feed & Flush pump sets. “Flushing precedence” means that a flush cycle will run to its end even if a bolus delivery is scheduled to begin. It also means that a flush cycle will interrupt a bolus feeding cycle that is already in progress. The feeding cycle will pick up where it was interrupted after the flushing cycle is complete. It is therefore possible that the net feeding volume is reduced from what may be intended, over a given time period.

Press ► **FLUSH VOLUME** in Figure 14A to define the volume per flush cycle. Press the ► buttons in Figure 14B to program the flush volume from 10 to 500 in increments of 1 mL. Press ► **ENTER** (top button) to exit the menu.

Press ► **FLUSH INTERVAL** in Figure 14A to define the time interval between starts of flushing. Press the ► buttons in Figure 14C to program the time interval from 1 to 24 hours in increments of 1 hour. Press ► **ENTER** to exit the menu.

The pump will automatically limit flushing settings which exceed pump capabilities to deliver.

**CAUTION:** The KANGAROO JOEY Enteral Feeding Pump flushes at a rate of 1960 mL/hr (32.7 mL/minute). Use care when programming the flush volume so that it matches the patient’s need.

**NOTE:** The pump will automatically flush an additional 25 mL of water after completing the programmed delivery of formula, as long as at least one flush had occurred during formula delivery.

## Run

The KANGAROO JOEY Enteral Feeding Pump will only run when a pump set is properly loaded and the necessary feeding parameters have been programmed. For a Feed & Flush Set, the flushing parameters do not have to be set for the pump to begin operating. If flushing parameters are set as zeros, there will be no flushing.

After the pump has been programmed, press ► **RUN** to start operation. Figure 15A shows the **RUNNING** screen for continuous feeding with flushing. The status line will indicate **RUNNING**, and the droplet icon will move vertically on the screen. The green LED indicator will be illuminated to give a quick visual indication of positive status in a darkened room.

The **RUNNING** screen shows the feed rate, amount fed, flushing data if a Feed & Flush Pump Set is used, and the remaining volume to be delivered (remaining VTBD). The remaining VTBD is shown next to the  icon.

The **RUN** option can be selected from the following screens, if the proper parameters are programmed and the pump set is loaded:

- **SET LOADED** screens (Figures 7A-7D)
- **ADJUST FEED** screen, continuous mode (Figure 11A)
- **ADJUST FLUSH** screens (Figure 12A, 14A)
- **HOLDING** screens (Figure 18A)

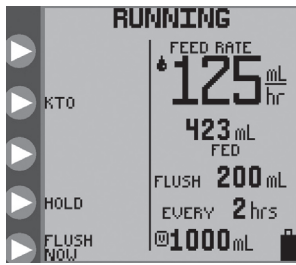


Figure 15A. **RUNNING** mode screen for continuous feed mode.

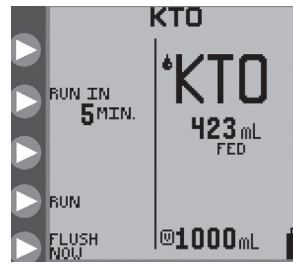


Figure 15B. **KTO**.

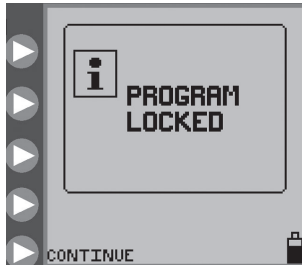


Figure 16. **Program Locked** screen, which indicates the pump is in **LOCK SETTINGS** mode.

### **KTO (Not Available in EZ Pump Mode)**

The Keep Tube Open (**KTO**) function within the KANGAROO JOEY Enteral Feeding Pump will help prevent a blockage of the feeding set by moving the feeding solution periodically within the tube. On regular intervals, calculated from the pump's presently programmed feed rate, a small and clinically insignificant portion of feeding solution is moved through the tube. The amount of delivered fluid is monitored, tracked, and calculated into the final feed volume totalizer amounts displayed to the user. The **KTO** feature can be activated via the **RUNNING** screen. To activate the **KTO** feature, press the input button to the left of the **KTO** icon, see Figure 15A, to immediately input a desired time in minutes for which the pump will remain in the "Keep Tube Open" mode before resuming the previously programmed feeding regimen. Each press of the input button will increment the **KTO** time by 5-minute increments, up to 30 minutes, see Figure 15B. After "30" is reached, each additional button press will increment in larger time steps, up to a maximum of 240 minutes. Another button push after 240 will cycle the **KTO** back to 5 minutes. No other input is needed to start the countdown, as the time immediately counts down after the incremental value is reached.

### **Lock Screen Feature**

The KANGAROO JOEY Enteral Feeding Pump can be set to **RUN** and then be locked out from unintended use. While the **LOCK SETTINGS** feature prevents changes only to the input parameters, the **LOCK SCREEN** feature will lock out any button presses, including **RUN** or **HOLD**, except power off.

Use **LOCK SCREEN** when the pump is running and there is a need to prevent unintended button activation, such as putting the pump into an unwanted **HOLD**. The **RUNNING** screen will show a padlock to indicate that no changes can be made without unlocking the screen.

To lock the screen, use the following procedure while the pump is in **RUNNING** mode:

- Press and hold the third ▶ button from the top (with padlock next to it) for at least 4 seconds, and then release it.

To unlock the screen, use the same procedure above.

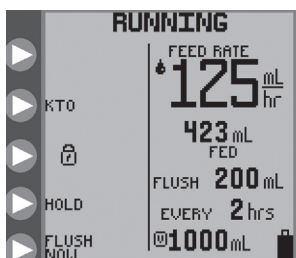


Figure 17. **Padlock** indicates pump is in **LOCK SCREEN** mode.

## Hold

Pump operation can be paused by pressing ► **HOLD** while it is **RUNNING**, such as in Figure 15A. The status line will indicate **HOLDING** and the yellow LED indicator will be lit up to give a quick visual indication of an informational status in a darkened room.

Note: the pump's alarm will sound if it has been left **HOLDING** for 10 minutes without further input.

There are five options available during **HOLDING**. See Figures 18A and 18B.

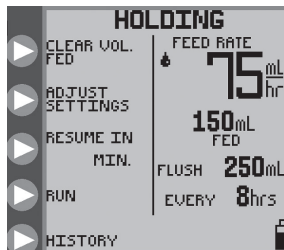


Figure 18A. **HOLDING** mode options, continuous feeding mode.

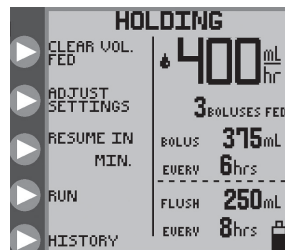


Figure 18B. **HOLDING** mode options, intermittent feeding mode.

## Clear Volume Fed

Press ► **CLEAR VOLUME** to re-zero the output feed totals “**mL FED**,” “**BOLUSES FED**,” and “**mL FLUSH**.”

## Adjust Settings

Press ► **ADJUST SETTINGS** to return to one of the opening menus shown in Figures 7A-7D, thus allowing any setting to be modified. If the pump set has been removed after going into **HOLD**, the opening menu will show **LOAD A SET**, as seen in Figures 5A-5B.

## Resume In \_\_\_ Minutes (Not Available in EZ Pump Mode)

Press ► “**RESUME IN \_\_\_ MIN**” once to immediately place the KANGAROO JOEY Enteral Feeding Pump into a 30-minute resume running mode. Pressing the ► **RESUME IN \_\_\_ MIN** button again will cycle the “resume in” time back to zero. No other input is needed to start the countdown, as the time immediately counts down after the 30-minute value is reached.

## Run

Press ► **RUN** to immediately restart pump operation. This option will not be available if the pump set is removed during **HOLD**.

## History (Not Available in EZ Pump Mode)

Press ► **HISTORY** to access the **HISTORY** screen. Use this screen to review feeding and flushing history. See subsection “More Options” below for further information.

## Flush Now (Not Available in EZ Pump Mode)

During the **RUNNING** mode, the pump can be diverted to immediately perform a flush (flush on demand) when a feed/flush set is loaded by pressing ► **FLUSH NOW** in the **RUNNING** menu, input a desired flush volume, then press ► **ENTER**. See Figure 15A. When ► **FLUSH NOW** is pressed, the screen will prompt for the volume to be immediately flushed, and will show the previously programmed flush volume as default but may be adjusted to the users desired volume. The screen will appear as the standard Flush input screen as shown in Figure 12B (or 14B). Setting the **FLUSH NOW** flushing volume is temporary and will not change the main/periodic flushing volume previously programmed. If ► **FLUSH NOW** is pressed by accident; the user may either press the cancel button or allow the screen to return to the **RUNNING** screen after 10 seconds, if there is no input for the flush volume.

If stopping a **FLUSH NOW** before the set volume has been delivered is desired, press ► **FLUSH NOW** and enter a volume of zero and press ► **ENTER**. The **FLUSH NOW** will stop immediately and the pump will return to the **RUNNING** mode.

## More Options

Press ► **MORE** in one of the opening menus, Figures 5A-5B or Figures 7A-7D, to access the **MORE OPTIONS** screen, Figure 19.



Figure 19. **MORE OPTIONS** menu.

### Buzzer

Press ► **BUZZER** in the **MORE OPTIONS** menu to access the **BUZZER** screen and increase or decrease the alarm buzzer volume. The alarm will be audible as the volume setting is changed. This sets the volume level for any warning or error that may occur with the pump. Critical errors of System Error and Pump Set Dislodged will always use the maximum volume setting.

### History (Not Available in EZ Pump Mode)

Press ► **HISTORY** in the **MORE OPTIONS** menu to access the **HISTORY** screen. Press the ► buttons in Figure 20 to set the time history of interest. The totals of **FEED mL** and **FLUSH mL** will be shown for the requested history time.

**WARNING:** A maximum of 72 hours of past history can be retrieved, excluding data from the current hour. **NOTE:** The 72-hour history includes time when the pump is powered OFF.



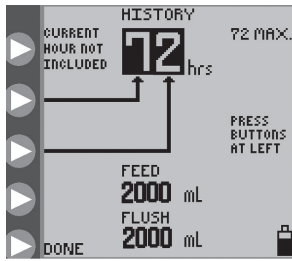


Figure 20. Feed and Flush totals for up to 72 hours of previous history, excluding data from the current hour.

## Languages

Press ► **LANGUAGES** in the **MORE OPTIONS** menu to change the preferred language for the screen interface.

## Continuous/Intermittent (Not Available in EZ Pump Mode)

Press ► **CONTINUOUS/INTERMITTENT** in the **MORE OPTIONS** menu to access the **SELECT MODE** menu, Figure 10B. Use this menu to select between continuous feeding mode and intermittent feeding mode. See subsection “Selecting Continuous or Intermittent Feed Mode” for more information.

Press ► **DONE** in the **MORE OPTIONS** menu to exit the menu.

## BioTech Menu

The **BioTech** screen will show technical information about the pump, and has a lock feature to lock the Pump Settings against unauthorized changes.

### Accessing the BioTech Screen

To get the **BioTech** screen, press the power button to start the pump, and press and hold the top ► button while the startup sequence (kangaroo icon “hops” across the screen) executes. You must be pressing the top ► button at the end of the sequence in order to access the **BioTech** menu. Figure 21 shows the **BioTech** screen.

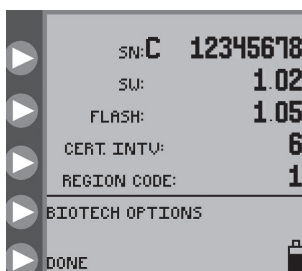


Figure 21. BioTech screen.

### BioTech Screen Data

**SN** is the serial number of the pump.

**SW** shows the software version number in this pump.

**FLASH** shows the version number of the flash data installed in this pump.

**CERT INTV** indicates the number of times the pump has been powered on since the last re-certification. See Section VI for details of re-certifying the pump.

## BioTech Options

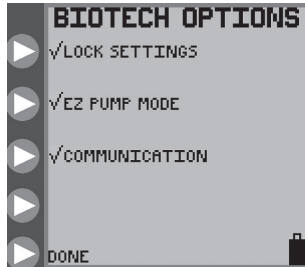


Figure 22. BioTech option screen, with Lock Setting, EZ PUMP MODE, and Communications features activated. (Full Communications feature to be added at later date.)

### LOCK SETTINGS — Program Locked

To “lock” the settings against unauthorized changes, press ▶ **LOCK SETTINGS** to get the check mark, as shown in Figure 22. The settings can only be changed again by pressing ▶ **LOCK SETTINGS** to remove the check mark. If the settings are locked and a change is attempted, the screen will indicate **PROGRAM LOCKED**, and will not allow access to the parameters, Figure 16.

The pump can be **PRIMED** or set to **RUN, HOLD**, etc. when settings are locked.

### EZ PUMP MODE

Press ▶ **EZ PUMP MODE** to activate the **EZ PUMP MODE** feeding option. A check mark will appear next to the ▶ **EZ PUMP MODE** button to indicate that the feature is active. Pressing the ▶ **EZ PUMP MODE** button again will remove the check mark indicating that the feature is off. If the **EZ PUMP MODE** feature is turned on, the **EZ PUMP MODE** icon will appear in the lower right corner of the LCD next to the battery icon (see Figure 9). See page 13 for **EZ PUMP MODE** details.