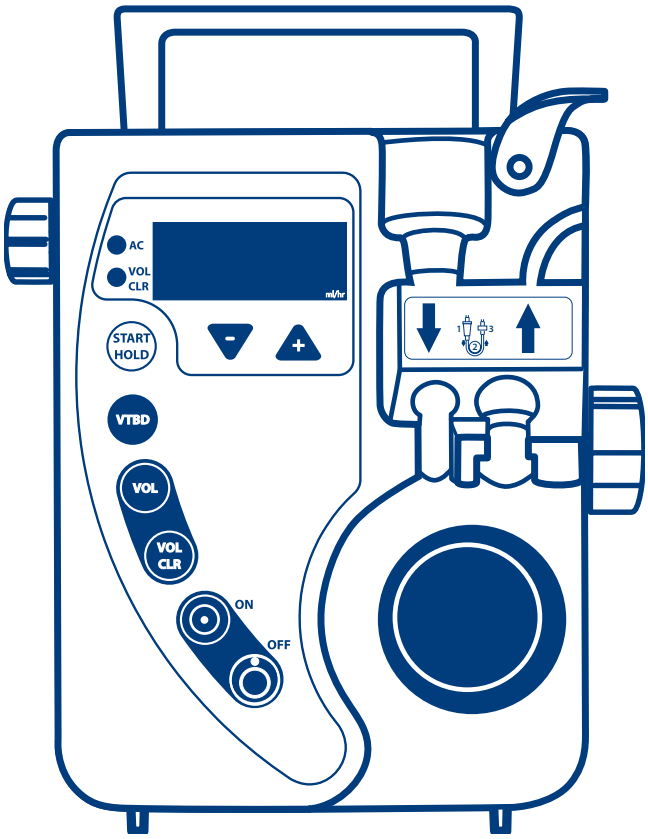
COVIDIEN

Operating Manual

Kangaroo™

924 Enteral Feeding Pump with Pole Clamp



en

Table of Contents

This product contains software solely owned by Covidien. Covidien grants the user a non-exclusive, limited license to use the software according to the operating instructions. A copy of the license can be obtained from Covidien.

Section I General Information

The Covidien Kangaroo™ 924 Enteral Feeding Pump with Pole Clamp is a rotary peristaltic pump designed to regulate the flow rate of enteral feedings. Among the features provided by this pump are:

- Portable operation-built in rechargable battery
- Wide flow rate range 1-300 mL/hr in 1 mL/hr increments
- Small and lightweight for easy transport
- Language Selection (13 languages available)
- Touch panel and knob operation
- Shut off and activation of audible and visible alarms when:
  - Feeding container is empty
  - Feeding tube becomes occluded
  - Drip sensors blocked
  - Battery low (alarms 15 minutes before pump shut off)
  - Unit is left on "**Hold**" longer than 5 minutes
  - Feeding set is improperly loaded
  - Self diagnosed problem which requires technical servicing
  - Pump motor malfunction
  - Ambient light error
- Automatic systems check after pump has been turned **ON**
- Large LED display
- Low occlusion pressure. Pump will not overcome back pressure greater than approximately 15 psi (103.4 kPa)
- Integral pole clamp
- Use of **Optix** feeding sets to prevent free flow from inadvertent misload of feeding set onto pump
- Pump running indicator lights
- DC motor with intermittent operation
- Adjustable alarm volume
- Memory of flow rate setting is retained for 16 or 24 hrs. after pump shut off, depending on AC connection status.

⚠ **Warning** **This Kangaroo 924 Enteral Feeding Pump with Pole Clamp requires the use of a Kangaroo 924 Feeding Set. The pump will not operate if sets other than Kangaroo 924 Feeding Sets are loaded into the pump.**

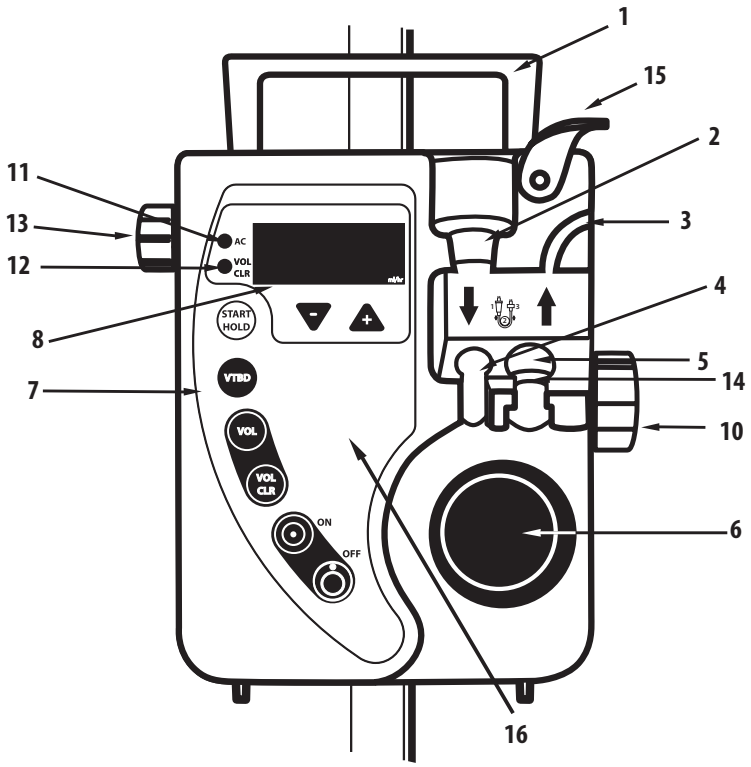


Figure 1

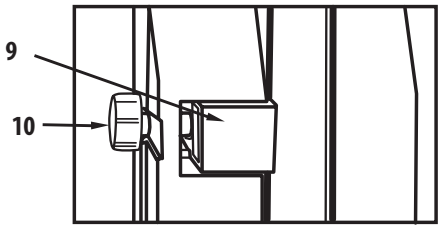


Figure 2

1. Handle
2. Upper Drip Chamber Guide (including drip sensor)
3. Tubing Guide
4 Lower Drip Chamber Guide
5. **Optix** Lock
6. Rotor Assembly
7. Buzzer Hole
8. LED Display and Pump Running Indicator Lights
9. Pole Clamp
10. Pole Clamp Knob
11. **AC** Light
12. **VOL CLR** Light
13. Adjustment Knob
14. Sensor Lens
15. Tubing Latch
16. Touch Panel

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 924 Enteral Feeding Pump.
2. Do not use this device near flammable anesthetics.
3. Disconnect power supply before cleaning or servicing. Inspect power cord for damage and send in for service if damaged.
4. Use only Kangaroo 924 Enteral Feeding Pump power cord (with built-in A/C adapter) with pump. See Section VII Factory Service for replacement of power cord.
5. Use only Kangaroo 924 Enteral Feeding sets with this device. Pump is not to be used with other sets. Sets are a single patient use device.
6. Used feeding sets should be disposed of in accordance with current hospital procedure or local disposal guidelines.
7. For service or for technical information, please contact Factory Service (Section VII).
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 VII.
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 V - Cleaning, for instructions on cleaning the Kangaroo 924 Enteral Feeding Pump.
11. 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.
12. **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, level of formula should be 28 inches (71.1 cm) above the pump, do not reuse feeding sets and avoid overstretching the silicone tube that wraps around the pump rotor.
13. The Kangaroo 924 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.
14. **Caution:** Ensure buzzer hole is unobstructed during normal operation so as to allow clear recognition of alarm.
15. **Caution:** The battery cells used in this device may present a fire or chemical hazard if mistreated. Do not disassemble, heat above 100ºC (212ºF), or incinerate.
16 **Caution:** Avoid getting black **Optix** connector wet. Wetting of the connector may cause a false "**Load Set**" alarm.
17. **Warning:** Always disconnect the feeding set from the patient before priming the feeding set.
18. **Warning:** For safe operation use only Covidien brand replacements battery, power cord or tubing latch.

Note: To disconnect AC power it is necessary to unplug power cord from the AC wall outlet. Replace the power cord only with Covidien approved part as listed below.

U.S. Power Cord Part Number: Not User Serviceable

U.K Power Cord Part Number: F090444

AU Power Cord Part Number: F090475

AC Light

On whenever pump is plugged in.

VOL CLR Light

On when volume delivered has been cleared.

ON

Powers the pump (See Figure 3 for location).

OFF

Shuts pump off. **Note:** To disconnect AC power it is necessary to unplug power cord from the AC wall outlet (See Figure 3 for location)

▲ Increases rate or **VTBD** desired.

▼ Decreases rate or **VTBD** desired.

Note: Numbers displayed will change more rapidly if either arrow button is depressed and held.

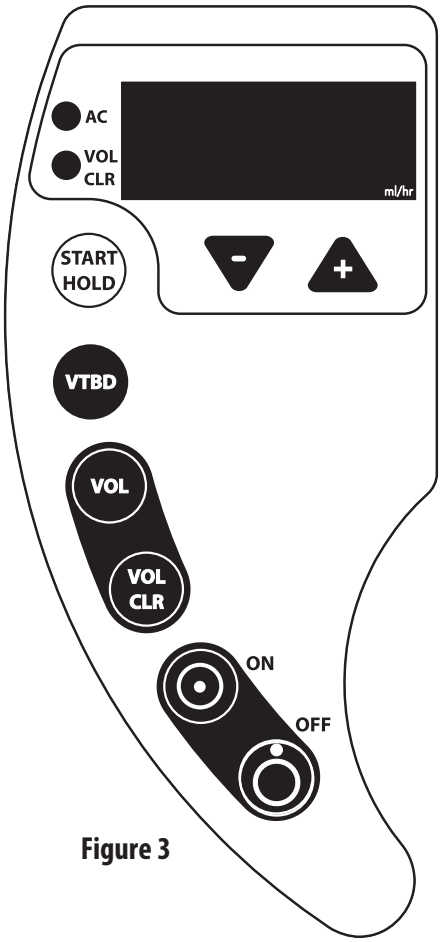


Figure 3

Adjustment Knob

Increases or decreases rate or **VTBD** desired.

VOL

Displays volume delivered for 5 seconds when pressed. When the pump has been off for 24 hours (16 hours battery), the volume delivered is automatically reset to zero.

VOL CLR

Clears volume delivered when pressed after **VOL** has been pressed. The **VOL CLR** light will go on when volume delivered has been reset to zero. Volume delivered cannot be cleared until the preset **VTBD** has been delivered or cleared.

VTBD (Volume To Be Delivered)

When pressed, allows user to preset a volume to be delivered by pressing ▲ or ▼ or rotating adjustment knob. Holding for 5 seconds will clear **VTBD** setting and volume. **VOL CLR** light flashes 3 times to signal that **VTBD** has been cleared.

START/HOLD

Starts pump rotor to deliver feeding formula to patient and alternately puts unit on **Hold**. **Hold** is used to stop fluid flow to: (1) correct alarm condition-alarm is silenced (2) change the flow rate (3) change administrative set. When on **Hold**, the LCD display flashes on and off and the total delivery is retained.

Note: If the pump has been placed on **Hold** and not restarted within 5 minutes, an alarm will sound.

Normal Operation

Insert power cord into AC wall outlet.

Battery Operation

Unplugging the pump from the AC line outlet will automatically put the pump on battery power. A new battery, when fully charged, will operate the instrument for more than 16 hours at 125 milliliters per hour. Approximately 15 minutes prior to battery discharge, a low battery alarm will occur, (see alarm section). When complete discharge occurs, the pump will automatically turn itself off.

Note: As the batteries get older, the time from low battery alarm to complete discharge may be less than 15 minutes.

To recharge battery, insert power cord into AC wall outlet. Battery will automatically begin charging. The recharge time for a fully discharged battery is approximately 12 hours.

The battery will charge whenever the pump is plugged into a wall outlet, even when the **OFF** button has been pressed. To be certain that power to all circuits has been disconnected, the power cord must be unplugged from the wall outlet.

Battery

Replacement battery packs are available from Covidien. (See Section VII - Factory Service)

⚠ **Warning** **Replace the battery pack only with the same type and rating of battery. Used battery packs must be disposed of in accordance with local environmental and institutional policies.**

Beginning Feeding

Below are general instructions for inserting all Covidien Kangaroo™ 924 Feeding Sets into the Kangaroo 924 Enteral Feeding Pump with Pole Clamp.

1. Close the control clamp on the Kangaroo 924 feeding set completely.
2. Fill feeding set bag with desired amount of formula.
3. Close and hand bag.
4. Ensure the formula fluid column hands 28″ (71.1 cm) above the top of the feeding pump at the start of feeding.

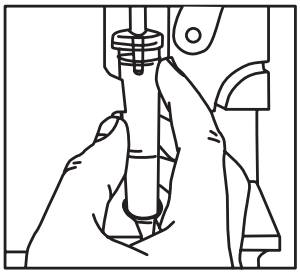


Figure 4A

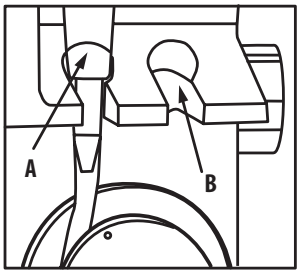


Figure 4B

5. Slide drip chamber into upper drip chamber guide (See Figure 4A).
6. Seat and secure chamber in lower drip chamber guide (A).
7. Remove distal connector protective cover from the feeding set.
8. Slowly open control clamp and fill entire line with fluid, leaving a few drops of fluid in the drip chamber.

Note: Avoid filling the drip chamber more than half full.

9. Close control clamp.
10. Attach distal connector to feeding tube.
11. Inspect lens in **Optix** lock area (B). Clean any contaminants from lens before proceeding to the next step (Figure 4B).

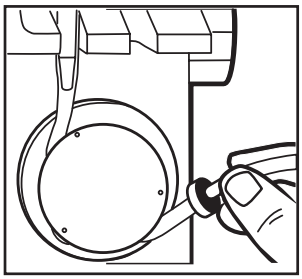


Figure 5A

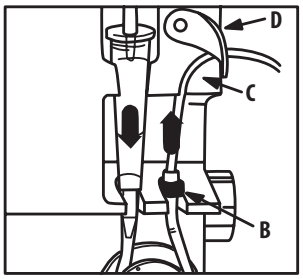


Figure 5B

12. Grasp the clear tubing below the **Optix** connector and guide the silicone tubing around rollers (see Figure 5A). Insert **Optix** connector into **Optix** lock (B). Thread tubing into tubing guide (C). Secure latch (D) over tubing (see Figure 5B).

Warning: Do not stretch the silicone tube beyond what is required to load the set. Over stretching the silicone tube can result in an over-delivery of formula to the patient.

Warning: Verify that the feeding set is properly loaded into the pump before proceeding. An improperly loaded feeding set could result in uncontrolled flow and possible patient injury.

13. Press **ON**.
14. Wait while pump performs a system check. (Displays "8888" for a moment.).
15. Check **VOL CLR** light or press **VOL** to insure that volume delivered is clear, if desired.
16. Set the delivery rate. The rate may be changed when the delivery rate is shown on the display by using the adjustment knob or by pressing the ▲ or ▼ buttons. Depressing and holding the button will cause the numbers to increase/decrease more rapidly.
17. Set Volume To Be Delivered **(VTBD)**, if desired. Press **VTBD**, then rotate adjustment knob or press ▲ or ▼ buttons to set **VTBD** desired.
18. Open the control clamp
19. Press **START/HOLD**.
20. Proceed with feeding.
21. When feed complete or after 24 hour use, dispose of feeding sets (set not to exceed 24 hours of use).

Used feeding sets shall be handled as follows:

To prevent employee exposure risk, the materials must be handled in accordance with bloodborne pathogen standards before being placed in an approved disposal container.

Disposal must be performed in accordance with current medical practices or local regulations in regards to disposal of infectious, biological or medical waste.

Example of proper placement of Feeding Set in Kangaroo 924 Enteral Feeding Pump with Pole Clamp (See Figure 6).

Note: Assure feeding bag is set so that the top of the fluid column is 28" (71.1 cm) above the top of the pump.

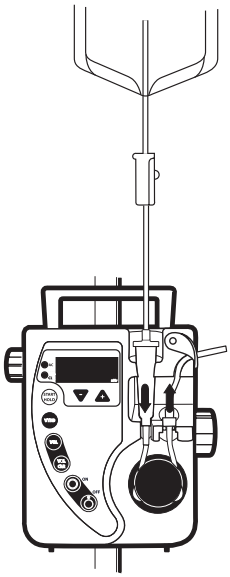


Figure 6

The Covidien Kangaroo 924 Enteral Feeding Pump with Pole Clamp has been designed to provide audible and visible alarms under several conditions where proper performance cannot be maintained. When an alarm occurs, press the **START/HOLD** button on the pump and perform the necessary procedures to correct the alarm condition.

Note: The visible alarm is in the form of a message shown on the display.

Load Set (LoAd SEt)

A. The feeding set is not installed or is installed improperly. See Operating Procedure for installation instructions.

B. Excessive Ambient Light (dots displayed with **LoAd SEt** message) indicates an excessive ambient light condition. To correct this situation, move pump away from bright light condition.

Flow Error (FLo Err)

A. The feeding container is empty.

To correct this situation, if more feeding is required, refill the container with the desired amount of formula and follow the steps in the Operating Procedures of this manual.

B. The feeding container, the feeding set tubing, or the feeding tube itself has become occluded beyond the pump's capability to pump. Alarm will activate at approximately 15 psi (103.4 kPa).

To correct this condition, determine where in the system the occlusion has occurred. Correct occlusion condition. Press **START/HOLD**. Continue with feeding.

C. The drip sensors are blocked and will not be able to detect drops as they come through the drip chamber.

To correct this condition, check drip sensors on inside of upper drip chamber guide and clean off any material that may be blocking sensors.

D. Tubing is pinched or kinked.

Low Battery (Lo bAt)

This alarm is activated when the battery begins to run down and flow rate accuracy can no longer be maintained.

To correct this condition, plug the pump into an AC wall outlet. When the pump is connected to a wall outlet, it will continue to operate and charge the battery at the same time. Once the low battery alarm has sounded, it will take approximately 12 hours to fully recharge.

Hold Error (HLd Err)

If the pump is left in the hold mode for approximately 5 minutes "**Hold Error**" will alarm.

System Error (SYS Err)

A. Rotor is not turning while pump is in start mode.
Note: Dots will flash across top of LED display while pump is running.

B. Rotor is turning, but is not detected by rotor sensors.
Do not try to repair pump. Return pump for technical service.

Note: For all alarm conditions, pressing the **START/HOLD** button will silence the audible alarm. The visible display will continue to flash until the **START/HOLD** button is pressed again.

VTBD Delivered (Vtbd dEL)

Preset **VTBD** has been delivered to patient.
When preset **VTBD** has been delivered, perform one of the following:

- Repeat the **VTBD** amount by pressing **START/HOLD** after clearing the alarm.
- Cancel the **VTBD** feature by pressing and holding **VTBD** for 5 seconds.
- To feed additional volume, increase **VTBD** amount by first pressing **VTBD**. Then rotate adjustment knob or press ▲ until new **VTBD** is displayed.
- Turn pump off.

Note: For all alarm conditions, pressing the **START/HOLD** button will silence the audible alarm. The visible display will continue to flash until the **START/HOLD** button is pressed again.

The alarm volume is set using the front panel in one of two ways:

1. Using the "Biotech Mode" as described. (See Section VI)
2. While the alarm is sounding, press ▲ to increase the volume, press ▼ to decrease the volume, or rotate adjustment knob.
   The volume is changed in steps from 1 to 10, with 1 the quietest and 10 the loudest.

⚠ **Warning** **If alarm does not sound during system check, or when any alarm condition exists, see "No Audible Alarm" symptom in Troubleshooting guide.**

Section V Cleaning

Cleaning is to be performed as required. The user will define the cleaning intervals based on their knowledge of the environment in which the pump is used. Cleaning may become necessary between intervals due to unforeseen soiling. Only personnel trained in the cleaning of medical devices shall perform cleanings.

Important User Information

⚠ **Caution** **Do not immerse pump or power cord in water or other cleaning solution; clean using a damp (not wet) cloth or sponge. Failure to follow the cleaning procedures described herein could result in hazards to users. As with any A.C. powered electrical device, care must be taken to prevent liquid from entering the pump or the power cord receptacle to avoid electrical shock hazard, fire hazard, or damage to electrical components.**

Should any of the following events occur, do not use the pump until it has been properly cleaned and serviced by personnel trained in servicing Kangaroo pumps:

- wetting of the pump's power cord or leakage into the pump interior during cleaning.
- spillage of large amounts of formula onto the pump exterior or any spillage on the power cord.

General Cleaning Directions

Cleaning of Kangaroo 924 Enteral Feeding Pumps must be performed as follows:

⚠ **Caution** **Disconnect pump from A.C. power source before cleaning. Upon completion of cleaning, do not connect to A.C. power source until pump and power cord are thoroughly dry.**

- A mild detergent should be used for general cleaning. If necessary, the pump may be cleaned with a 10:1 water and hypochlorite mixture, however, repeated cleaning with this solution can damage the plastic pump case. Isopropyl alcohol applied with a damp (not wet) cotton swab may be used for cleaning difficult-to-reach areas, such as the drip sensor, however, it should be used sparingly because repeat cleaning may damage the case.
- **Do not use** strong cleaners such as Spray Nine™*, pHisoHex™*, Hibiclens™*, or Vesta Syde™* because damage to the pump case housing can result.

Directions For Cleaning Pump Housing

- Refer to General Cleaning Directions before starting.
- Clean outside surface with a damp (not wet) cloth or sponge and keep pump in upright position as much as possible.
- Avoid excess moisture near handle hinges.
- Avoid excess moisture near pole clamp area.

Directions For Cleaning Pump Power Cord

- Refer to General Cleaning Directions before starting.
- Unless soiling is observed, the power cord should not be cleaned.
- If cleaning of the power cord is necessary, wipe the exterior surfaces of the wall plug of the power cord with a cloth dampened with isopropyl alcohol.

⚠ **Caution** **Avoid exposing power cord to excess moisture, as this can lead to an electrical shock or fire hazard.**

Directions For Cleaning Drip Detector

- Refer to General Cleaning Directions before starting.
- Clean the drip sensors in the upper drip chamber guide with a cotton swab dampened with isopropyl alcohol.
- Be sure sensor areas are clear.

Directions For Cleaning Optix Lock

- Refer to General Cleaning Directions before starting.
- Clean lens in the **Optix** lock area with a cotton swab dampened with isopropyl alcohol.
- Be sure sensor areas of the lens are clear.
- Avoid using abrasive cleaners to prevent scratching/damaging the lens.

Directions For Cleaning Rotor Assembly

- Refer to General Cleaning Directions before starting.
- Loosen rotor set screw with a 5/64" (2 mm) Allen wrench and gently pull rotor forward off shaft. After removing rotor, avoid getting any moisture in the rotor shaft opening.
- Clean rollers thoroughly with warm soapy water, or isopropyl alcohol if necessary.
- Be sure all parts of rotor are completely dry before putting it back onto shaft.
- To replace rotor, align set screw on hub of rotor with the flattened section of the output shaft.
- Push rotor into place and tighten set screw (do not over tighten).

Preventive Maintenance

This pump must be periodically serviced to assure proper functioning and safety. The recommended service interval is six (6) months, but in no case less than once each twelve (12) months. Servicing must be performed by personnel trained in servicing Kangaroo Enteral Feeding Pumps and may be done at the user's Biomedical Engineering department, an outside service, or by Covidien Factory Service. To arrange for Covidien Factory Service, call 1-800-448-0190 in the US or contact your local customer service center.

The Kangaroo 924 Enteral Feeding Pump with Pole Clamp contains no user serviceable parts. User maintenance consists of cleaning the exterior of the pump as stated in the cleaning section of this manual. All other maintenance is to be performed by the user's appropriately qualified technical personnel.

Section VI Troubleshooting Guide

Listed below are some of the probable causes of alarm conditions and their corrections.

Flow Error Alarm (FLo Err)

Feeding container is empty.

– Refill feeding container. If bag has been in use for 24 hours, replace.

Feeding tube or feeding set tubing is occluded.

– Locate point of occlusion and correct. **Note:** occlusion may occur upstream or downstream from pump.

- Feeding Container
- Feeding Set (control clamp closed)
- Feeding Tube - patency of feeding tube should be checked

Drip chamber is improperly placed in pump.

– Check to make sure drip chamber is properly "locked" in position in drip chamber guide.

Drip chamber walls are coated with feeding formula.

– Check to make sure formula is not preventing detectors from proper operation. If formula cannot be removed from inside walls of chamber via chamber manipulation, replace set.

Sensors in upper drip chamber guide are blocked.

– Check to make sure detectors are free of dried formula. Remove any deposits by using a cotton swab dampened with warm soapy water.

Low Battery Alarm (Lo bAt)

Battery has been run down below point of maintaining accuracy of pump.

– Plug pump power cord into wall outlet. If required, replace the power cord only with Covidien approved part as listed below.

U.S. Power Cord Part Number: Not User Serviceable

U. K. Power Cord Part Number: F090444

AU Power Cord Part Number: F090475

Hold Erro Alarm (HLd Err)

Pump has been left in the hold mode for over 5 minutes.

– Press **START/HOLD** to silence alarm, then press **START/HOLD** again to clear the visual alarm message. Press **START/HOLD** again to restart.

Load Set (LoAd SEt)

Feeding set has been improperly placed onto pump.

– Check to make sure only Kangaroo 924 Feeding Set has been placed onto the pump. Check to make sure **Optix** connector on feeding set has been properly positioned into the **Optix** lock on pump.

High Ambient Light Condition

– If dots appear with the **LoAd SEt** message on the display, this indicates a high ambient light condition. Remove from bright light area until error condition clears.

Feeding solution or other foreign substances have accumulated in the Optix lock and blocked or obscurred the optical set detection mechanism.

– Follow the instructions in Section V: Cleaning under "Directions for Cleaning **Optix** Lock" to remove the material blocking proper detection of the feeding set.

System Error Alarm (SYS Err)

Rotor is not turning while pump is running.

– Return pump for technical service.

Rotor is turning but is not detected by rotor sensors.

– Return pump for technical service.

VTBD Delivered Alarm (Vtbd dEL)

Preset VTBD has been delivered to patient.

No Audible Alarm

Battery is fully discharged.

– Charge battery for a minimum of 12 hours.

Alarm circuitry failure.

– Return pump for technical service.

The Kangaroo 924 Enteral Feeding Pump with Pole Clamp is designed to minimize the effects of uncontrolled electromagnetic interference and other types of interference. When using the Kangaroo 924 Enteral Feeding Pump with Pole Clamp, avoid the use of equipment that causes erratic operation or degradation in performance.

Biotech Mode

To enter Biotech mode:

1. Turn pump off.
2. Press and hold the **ON** button for 6-7 seconds.
3. Pump alternately displays: **biotECH** for 5 seconds. Pump then displays **SEt LAng** for 5 seconds. To select the language press ▲ or ▼ buttons or rotate adjustment knob to cycle through the list. When the desired language is displayed, press the **ON** button to set.
4. Pump now displays: **bEEP LVL** and (volume of speaker) Select desired volume (1 to 10) by rotating adjustment knob or pressing ▲ or ▼ buttons.
5. Pump returns to **Hold** mode.

Note: Pressing the **ON** button will set the value displayed and continue to the next item in the sequence. This will also happen automatically by waiting 5 seconds.

Note: Changes are saved permanently.

Section VII Factory Service

A. In the event that it is necessary to return a unit for repair, please observe the following:

1. Call Customer Service for an Authorized Return Number and shipping instructions, using the appropriate phone number below.

2. Pack the instrument carefully and ship the insured parcel to the following locations or your local service center:

United States
Covidien
Attention: Service
5920 Longbow Drive
Boulder, CO 80301
1-800-448-0190

Canada
Covidien
7300 Trans Canada Highway
Pointe-Claire, QC H9R 1C7
1-877-664-8926

U.K. Service Center
(Outside of U.S. and Canada)
Covidien
Unit 2 Talisman Business Center,
London Road,
Bicester, OX266HR, UK
+44-1869-328065

B. To place an order for repair or if technical assistance is required, call customer service or where designated by your local customer service center.

Technical information will be made available on request to allow the user's appropriately qualified technical personnel to repair the parts of the equipment designated by the manufacturer as repairable. Refer to the Kangaroo 924 Enteral Feeding Pump with Pole Clamp manual for more service information.

The Kangaroo 924 Enteral Feeding Pump with Pole Clamp contains no user serviceable parts. User maintenance consists only of cleaning the exterior of the pump as stated in the cleaning section of this manual. All other maintenance, including replacement of battery pack and line fuses, is to be performed only by the user's appropriately qualified technical person.

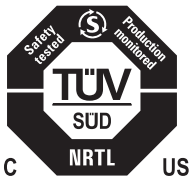
C. To order a replacement for the power cord or tubing latch, use the following part number.

U.S. Power Cord: Not User Serviceable

U. K. Power Cord: F090444

AU Power Cord: F090475

Tubing Latch: F31975



ES60601-1:2005, UL 60601-1

CAN/CSA-C22.2 No. 60601-1:08

Type Infusion Device

Volumetric

Pumping Mechanism

Rotary Peristaltic

Feeding Set Required

Covidien Kangaroo 924 Enteral Feeding Pump with Pole Clamp Feeding Sets
(see www.covidien.com for details on compatible administration sets)

Operating Range

Rate: 1-300 mL/hr in 1 mL/hr increments
Dose: 1-2000 mL in 1 mL increments
Volume Delivered: 1-9999 mL (rollover is accounted for)

Accuracy

10% or 0.5 mL/hr, whichever is larger, with top of the fluid column at 71.12 cm (28″) ± 0.76 cm (0.3″) above the top of the pump, at a room temperature of 22 °C ± 2 °C (72 °F ± 3 °F), using a new 924 feeding set for no longer than the recommended 24 hours of maximum usage. Confidence limits for accuracy are based upon those included in the ANSI/AAMI ID26-1992 American National Standard for Infusion Devices. Reported accuracy is based upon the time-based accuracy calculation in this standard, as applicable for enteral feeding.

Occlusion Pressure

15 psi (103.4 kPa) Nominal

Alarms

• Flow Error • Low Battery • Hold Error • Load Set • System Error • VTBD Delivered

Memory of Settings When Pump is Off

16 hours for battery, 24 hours for AC

Battery

- Rechargeable NiMH
- Automatically charges when pump is plugged into wall outlet. Recharge time for fully discharged battery is approximately 12 hours.
- A new battery, when fully charged, will operate for approximately 16 hours at 125 milliliters per hour.

Dimensions

Approximately 7.25″ High x 6.61″ Wide x 4.33″ Deep (18.4 cm High x 16.8 cm Wide x 11 cm Deep)

Weight

Approximately 3.89 lbs (1.76kg)

Case Material

ABS/PC Plastic - Fire Resistant

Power Requirements

120V~, 60 Hz, 1 Amp (North America)

230V~, 50Hz, 0.5 Amp (UK / Australia)

If the integrity of the protective earth conductor arrangement is in doubt, operate unit from its internal electrical power source.

Ambient Operating Conditions

10° to 40°C (50° to 105°F)

Transport and Storage (not to exceed 30 days)

0° to 50°C (32° to 122°F)

10-95% RH, non condensing

In the event that the environmental conditions for transport and storage are exceeded, return the unit for factory service.

In the event that the specified storage time limit is exceeded, within the environmental limits specified, perform the performance tests prior to use. Refer to the Kangaroo 924 Enteral Feeding Pump with Pole Clamp manual for servicing information.

Type of Protection Against Electric Shock

Class I (North America, UK and Australia)

Degree of Protection Against Electric Shock

Type BF

Mode of Operation

Continuous

Degree of Protection Against Ingress of Fluids

Drip-Proof IPX1 Per IEC 529

Degree of Protection Against Ingress of Flammable Anaesthetic Mixtures

Not suitable for use in the presence of a flammable anaesthetic mixture with air or with oxygen or nitrous oxide.

Symbols

Alternating Current

Store between these temperatures

Caution: For indoor use only

Do not use Kangaroo 924 Feeding Sets for greater than 24 hours

Do not use if package is opened or damaged

Feed

Feeding Formula

See Kangaroo 924 Enteral Feeding Pump with Pole Clamp manual for Feeding Set loading instructions

103 kPA

Maximum operating pressure 103 kPA

IPX1

Drip-Proof (Degree of protection against ingress of fluids)

Protective Earth

CE
0123

CE Mark - European Community Certification

European Union's Waste Electrical Equipment (WEEE) Directive in accordance with European Standard EN 50419

Set Loading Diagram

Consult Instructions for Use

Type BF Protection (Degree of protection against electrical shock - there is no conductive connection to the patient)

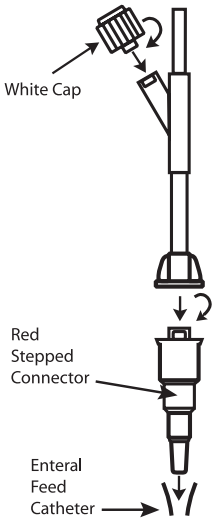
Manufacturing Date Code

SN

Serial Number

REF

Reorder number for the device located on the carton label



Assure that the white cap and red stepped connector are securely tightened.

Limited Warranty:

1. Covidien warrants to the original purchaser ("Customer") that this newly manufactured enteral feeding pump ("Pump" or "Pumps") will be free of defects in materials and workmanship, under normal use, for three (3) years from the date of shipment from Covidien. This Limited Warranty as applied to Pump batteries and power cords is limited to one (1) year from the date the date of shipment from Covidien for all Pumps.

2. This Limited Warranty does not extend to routine maintenance of Pumps such as cleaning and all recommended Performance Tests set forth in this Pump Operation and Service Manual which remain the sole responsibility of Customer. Failure of Customer to perform cleaning, routine maintenance and recommended performance testing on any Pump as outlined in this Pump Operation and Service Manual may void this Limited Warranty.

3. Customer agrees that, with the exception of customer serviceable parts and troubleshooting steps outlined in this Pump Operation and Service Manual, Covidien or its authorized dealer must perform Pump repairs.

4. This Limited Warranty does not cover any Pump, product or part that:

   (a) has been operated in an unsuitable environment or used for purposes other than intended;

   (b) has been subjected to unauthorized or non-Covidien repair or use of non-Covidien supplied parts;

   (c) has been altered, misused, abused or neglected;

   (d) has been subjected to fire, casualty or accident;

   (e) suffers damage caused by Customer's negligent acts or omissions; or

   (f) suffers damage beyond normal wear and tear.

5. For purposes of this Limited Warranty, "damage beyond normal wear and tear" includes without limitation:

   (a) Damage to housing, LCD, display overlay or power supply;

   (b) PCBA damage due to fluid ingress;

   (c) Use of non-qualified power supply or battery; or

   (d) Use of unauthorized cleaning fluids.

6. If a Pump does not operate as warranted during the applicable warranty period, Covidien may, at its option and expense, (a) repair or replace the defective part or Pump; or, (b) refund to Customer the purchase price for the defective part or Pump.

7. Dated proof of original purchase is required to process warranty claims. Removal, defacement or alteration of serial lot number voids this Limited Warranty.

8. Shipping costs for Pumps being returned to Covidien shall be borne by Customer. Customer is responsible for proper packaging for return shipment. Loss or damage in return shipment to Covidien shall be at Customer's risk.

9. Covidien disclaims all other warranties, expressed or implied, including any implied warranty of merchantability or fitness for a particular purpose or application other than as expressly set forth in the product labeling. In no event shall Covidien be liable for any incidental, indirect or consequential damages in conjunction with the purchase or use of the Pump, even if advised of the possibility of the same.

Section X Electromagnetic Conformity Declaration

The Kangaroo 924 Enteral Feeding Pump with Pole Clamp has been built and tested according to UL60601-1, ES60601-1:2005, CAN/CSA-C22.2 No. 60601-1:08, EN60601-1: 2006, and EN60601-1-2 Standards.

The Kangaroo 924 Enteral Feeding Pump with Pole Clamp is intended for use in the electromagnetic environment specified below. The user of the pump should assure that it is used in such an environment.

Emissions Test	Compliance	Electromagnetic Environment - Guidance
RF emissions (CISPR 11)	Group 1	The Kangaroo 924 Enteral Feeding Pump with Pole Clamp uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions (CISPR 11)	Class B	The Kangaroo 924 Enteral Feeding Pump with Pole Clamp is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions (IEC 61000-3-2)	Class A	
Voltage fluctuations/ flicker emissions (IEC 61000-3-3)	Complies	
Radiated Disturbance Immunity (EN60601-1-2 / IEC 61000-4-3:2002)	Complies	
Conducted Disturbance Immunity (EN60601-1-2 / IEC 61000-4-6:2001)	Complies	
Power Frequency Magnetic Field Immunity (EN60601-1-2 / IEC 61000-4-8:2001)	Complies	
Voltage dips and sags Immunity (EN60601-1-2 / IEC 61000-4-11:2001)	Complies	
Electrical Fast Transient / Bursts Immunity (EN60601-1-2 / IEC 61000-4-4:2001)	Complies	
Electrostatic Discharge Immunity (EN60601-1-2 / IEC 61000-4-2:2001)	Complies	
Surge Immunity (EN60601-1-2 / IEC 61000-4-5:2001)	Complies	

Recommended separation distances between portable and mobile RF communications equipment and the Kangaroo 924 Enteral Feeding Pump

The Kangaroo 924 Enteral Feeding Pump is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Kangaroo 924 Enteral Feeding Pump can help prevent electromagnetic interference by maintaining the minimum distance between portable and mobile RF communications equipment (transmitters) and the Kangaroo 924 Enteral Feeding Pump recommeneded below, according to the maximum output power of the communication equipment.

Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m		
	150 kHz to 80 MHz $d = 1,2\sqrt{P}$	80 MHz to 800 Mhz $d = 1,2\sqrt{P}$	800 MHz to 2,5 GHz $d = 2,3\sqrt{P}$
0,01	0,12	0,12	0,23
0,1	0,38	0,38	0,73
1	1,2	1,2	2,3
10	3,8	3,8	7,3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

Note 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

Note 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Guidance and Manufacturer's Declaration – Electromagnetic Immunity

The Kangaroo 924 Enteral Feeding Pump with Pole Clamp is intended for use in the electromagnetic environment specified below. The customer or the user of the Kangaroo 924 Enteral Feeding Pump with Pole Clamp should assure that it is used in such an environment.

Immunity Test	IEC 60601 test level	Compliance level	Electromagnetic environment – guidance
Conducted RF IEC 61000-4-6 Radiated RF IEC 61000-4-3	3 Vrms 150 kHz to 80 MHz 3 V/m 80 MHz to 2,5 GHz	3 Vrms 3 V/m	Portable and mobile RF communications equipment should be used no closer to any part of the Kangaroo 924 Enteral Feeding Pump with Pole Clamp, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance $d = 1,2\sqrt{P}$ $d = 1,2\sqrt{P}$ 80 MHz to 800 MHz $d = 2,3\sqrt{P}$ 800 MHz to 2,5 GHz where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,[a] should be less than the compliance level in each frequency range.[b] Interference may occur in the vicinity of equipment marked with the following symbol: 

Note 1 At 80 MHz and 800 MHz, the higher frequency range applies.

Note 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

[a] Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the Kangaroo 924 Enteral Feeding Pump with Pole Clamp is used exceeds the applicable RF compliance level above, the Kangaroo 924 Enteral Feeding Pump with Pole Clamp should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the Kangaroo 924 Enteral Feeding Pump with Pole Clamp.

[b] Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Rx ONLY

Consult instructions for use

CE 0123

COVIDIEN

Manual No. SMF0211-100

Covidien llc, 15 Hampshire Street, Mansfield, MA 02048 USA.
EC REP Covidien Ireland Limited, IDA Business & Technology Park, Tullamore.
www.covidien.com 1-800-962-9888 [T]
REV 04/2012