Infinity∞®

Enteral
Feeding Pump

BY MOOG®

OPERATOR'S MANUAL

MOOG®

Enhancing Healthcare.
Enriching Lives.™

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PRODUCT OVERVIEW

The Infinity® is a rotary peristaltic enteral feeding pump designed to deliver programmed doses of enteral nutrition solutions at selectable rates. It is easy to use with a simple user interface and keypad. Moog technology allows an accuracy rate of +/- 5% and the ability to safely operate in any orientation. The Infinity system includes a complete line of delivery sets that are made with materials that do not contain the plasticizer DEHP or natural rubber latex. All Infinity delivery sets feature automatic free-flow protection.

The Infinity is designed for both hospital and alternate site care use. It is durable, water resistant, and easily carried in a Moog carry pack. The Infinity's size, weight, accuracy, and portability promote and support physical activity.

Enteral feeding is considered a medical procedure and following the instructions for use in the Operator Manual is important for the pump to operate normally.

INDICATIONS FOR USE

The Infinity enteral feeding pump is a rotary peristaltic pump designed to deliver programmed doses of enteral nutrition solutions at selectable rates.

LIST OF WARNINGS AND CAUTIONS

Be sure to carefully read the following warnings and cautions. Failure to review all the warning and cautions can cause harm to the operator or patient. Healthcare personnel who provide training to lay users should be sure to review all the warning and cautions with the lay user. If there is a change in the performance of the pump, contact customer service.

WARNINGS

▸ Use ONLY feeding solutions prescribed by the responsible physician, registered dietitian, registered nurse, or other licensed practitioner. Failure to do so may result in harm to the patient.

▸ Use ONLY Infinity brand disposable sets to ensure proper fluid delivery. Others will not deliver the correct dose, may allow dangerous free-flow conditions, and may generate hazardous fluid pressures which may activate occlusion alarms at unpredictable pressures.

▸ Low flow rates, combined with high dose settings may exceed the life of the disposable set. The disposable bag set must be replaced every 24 hours and the spike sets must be replaced every 48 hours (max1.5 L) to maintain delivery accuracy, allow proper air and occlusion sensing, and prevent growth of bacteria.DO NOT PROGRAM RATE AND DOSE COMBINATIONS WHICH EXCEED A 24 HOUR FEED REGIMEN FOR THE DISPOSABLE BAG SETS OR A 48 HOUR FEED REGIMEN FOR THE SPIKE SETS.

▸ The battery capacity is an approximation. If you are unsure that enough capacity remains for your intended use, recharge it. Failure to do so may result in delayed or under-delivered therapy.

▸ To avoid electrical shock, never clean pump with charger plugged into an outlet or when pump is on.

▸ To avoid electrical shock, make sure the Infinity AC Adapter/Charger is completely dry before plugging into an electrical outlet.

▸ Do not use Infinity Enteral Feeding Pump for delivery of non-enteral solutions. Serious injury may result.

▸ Proper operation of pump requires door to be closed and latched. Make sure door is closed and latched when motor is running.

▸ If an error occurs (ER01 - ER99 will appear in display), check all settings and   volume counters and verify before starting a feeding. Failure to do so may result in delayed or under-delivered therapy.

- No modification of this equipment is allowed including the pump, disposable sets, and accessories. Modification can result in delayed therapy, over or under delivery, electrocution, injury, or death.

- Avoid leaving the power adapter or feeding set tubing where infants or children can become entangled. If these items become wrapped around a child's neck, strangulation or death may occur.

- This device contains small parts. Dispose of or store connector cap in a safe place when not in use to avoid choking hazard for children under 3 years.

CAUTIONS

- Federal law (U.S.A.) restricts this device to sale by or on the order of a physician, registered dietitian, registered nurse, or other licensed practitioner.

- Dispose of the Infinity Pump, Infinity Orange Pump and Disposable Sets properly, as required by local law

- If any leaks are detected in the disposable set, stop pump operation and disconnect set from patient and replace with a new disposable set. Failure to do so may result in under-delivered therapy.

- Care should be used when manually priming delivery set to ensure cassette is not damaged by excess force.

- Do not overload carry packs with personal items. Pump function may be affected by kinked or pinched tubing and/or unintentional button presses.

- The Infinity uses an optical air-in-line sensor to detect air in the tubing as it passes through the pump, causing the pump to alarm if feeding is inadvertently interrupted or when feeding is complete. It is important to keep this sensor free of debris including spilled fluids or food that may adhere to the sensor and prevent proper detection of air in the tubing.

  The clinician and caregiver should be trained regarding the care, use, and maintenance of the Infinity pump and accessories, including proper cleaning of the area around the optical air-in-line sensor.

  Clinicians, care providers, and end users should be aware of the following considerations whenever using or teaching others to use the pump:

  - The clinician will need to determine whether the programmed dose, infinite dose, or interval feeding setting is most appropriate for the patient. Regardless of the pump setting, whenever a feeding is delivered, the

patient and pump delivery should be monitored with special attention given to those patients who may not be able to inform the clinician or care provider of discomfort or other concerns related to the feeding.

- If a continuous feed is desired with the infinite dose setting, the delivery should be monitored and proper amounts of additional food should be added prior to food depletion in the bag or bottle.

- If the infinite dose setting is used with a planned discontinuation after food is delivered from the bag or bottle, allow all food to move through the pump. The pump will alarm when the feeding cycle is complete. Monitor the pump and feed flow to ensure the appropriate dose has been received by the patient.

- Use ONLY commercially available pre-packed or commercially prepared feeding solutions formulated for use with a feeding pump that are prescribed by a licensed health care provider or dietitian.

- DO NOT USE HOMEMADE BLENDERIZED OR LIQUIDIZED FOODS, OR OTHER NON-PRESCRIBED, NON-COMMERCIALLY AVAILABLE FEEDING SOLUTIONS. Use of homemade blenderized or other non-prescribed feeding solutions may cause sticky solids which could cause an obstruction of the optical sensor. It is recommended that all users clean and maintain the pump and optical sensors according to manufacturer's recommendations.

- The use of commercially available blenderized formula (HCPCS Code: B4149) can impact pump accuracy and performance. It is recommended to follow the formula manufacture guidelines for pump use.

- The Infinite Dose or Interval Feeding programming option listed in the operator's manual should NOT be used for adults or children who are seriously health compromised, or who are extremely sensitive to receiving air in the stomach with an enteral feeding. It is recommended that a single feeding regimen for specific dose be used for this particular user group.
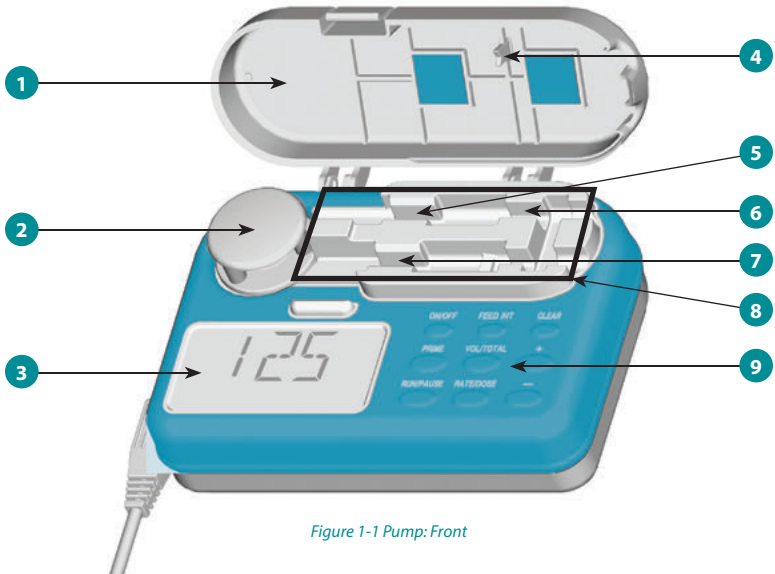
1. PUMP COMPONENTS

Infinity Enteral Feeding Pump

Figure 1-1 Pump: Front

1. Door
2. Pump Wheel
3. Display
4. Tab
5. Upstream Pressure Sensor
6. Air Sensor
7. Downstream Pressure Sensor
8. Receptacle for Cassette
9. Keypad

Infinity Enteral Feeding Pump

Figure 1-2 Pump: Rear

1. Serial Number Label
2. Charger/Power Connector
3. Receptacle for Pole Clamp
4. Speaker
5. Pump Instruction Label

Keypad

ON/OFF Press **ON/OFF** key for 1.5 seconds to either turn Infinity on or off.

PRIME Press and hold **PRIME** key to rapidly fill disposable set with fluid. Release key to stop.

RUN/PAUSE Press **RUN/PAUSE** key to either start pump or place it in pause mode.

FEED INT Press **FEED INT** key to display feed interval setting.

Figure 1-3 Keypad Layout

VOL/TOTAL Press **VOL/TOTAL** key once to display volume delivered for current feeding. Press key again to display total cumulative volume delivered in all feed cycles since total volume was last cleared.

RATE/DOSE Press **RATE/DOSE** key to transition between rate and dose settings.

CLEAR Press **CLEAR** key to reset displayed function to its minimum value. Press and hold for three seconds to clear rate, dose, feed interval and volume delivered to minimum values at the same time.

+ Press **+** key to increase displayed feed function. Press and hold key to increase value rapidly.

− Press **-** key to decrease displayed feed function. Press and hold key to decrease value rapidly.

Note: The following keys only function when pump is in pause mode: **PRIME**, **CLEAR**, **+**, and **-** .

Display

The display includes large alphanumeric characters, as well as smaller symbols and words. All segments and symbols on the display are shown in *Figure 1-4*.

Settings and messages are displayed in large alphanumeric characters (*Figure 1-5*).

When the large alphanumeric characters display numbers, one of the smaller words below the characters indicates which function is being displayed (*Figure 1-6*).

The run symbol indicates pump is running (*Figure 1-7*).

The wall plug symbol indicates the charger is plugged in, and connected to a live power outlet. The battery symbol indicates pump is running on battery power only. The fuel gauge symbol indicates how much battery charge remains (*Figure 1-8*).

NOTE: When operating on A/C power the display light will remain on. When operating on battery power the display light will automatically turn off 10 seconds after the last key is pressed. If you would prefer the light to turn off when connected to an outlet, you can change the pump light setting to OFF. See the User Preference Settings section (*Page 19*) for instructions to change this setting.
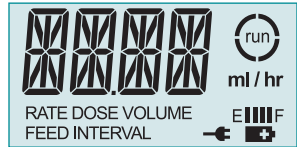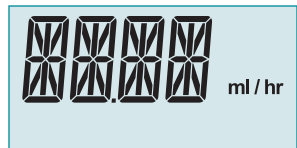

Figure 1-4 Display Segments

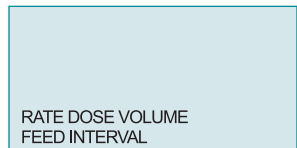*Figure 1-5 Alphanumeric Characters and Units*
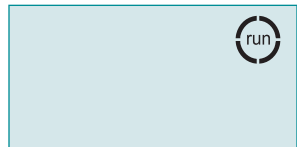

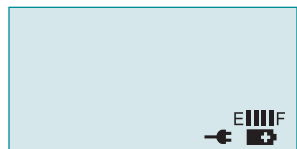*Figure 1-6 Setting Indicators*

Figure 1-7 Run Indicators

Figure 1-8 Power Indicators

Disposable Set

The only disposable sets approved for use with Infinity pump are:

- Infinity 500 ml Bag Set - Order Number INF0500-A
- Infinity 500 ml ENFit only bag set - Order Number INF0500-E
- Infinity 1200 ml Bag Set - Order Number INF1200-A
- Infinity Safety Screw Spike Set - Order Number INF0020-A

Figure 1-9 Infinity 500ml or 1200ml Bag Set

Figure 1-10 Infinity Safety Screw Spike Set
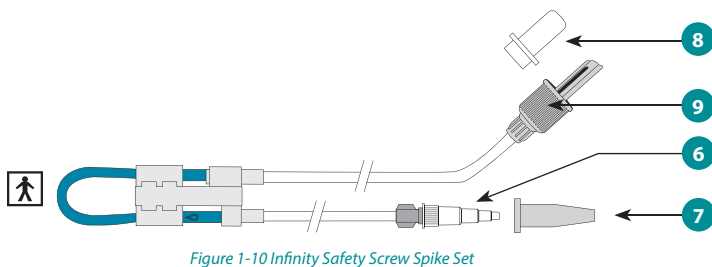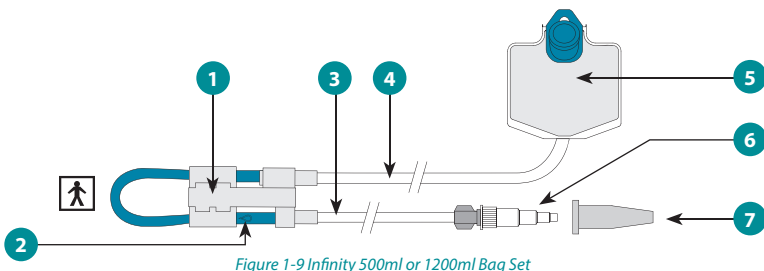
1. Cassette
2. "⬡" Symbol
3. Downstream Tubing
4. Upstream Tubing
5. 500ml or 1200ml Feeding Bag
6. ENFit connector with transitional stepped connector
7. Protective cover for transitional stepped connector
8. Protective Cover for Safety Screw Spike tip
9. Infinity Safety Screw Spike

Symbols

Brief instructions for operation of pump as well as a brief explanation of each alarm message which pump may communicate are printed on the label attached to pump. These are not intended to be used in place of the Operator's Manual. They are simply a quick reference guide. Please read the Operator's Manual before operating the Infinity.

Consult Accompanying Documents

Figure 1-11 Consult Accompanying Documents

The bag symbol is printed on pump door over port where upstream tubing enters pump.

Figure 1-12 Feeding Bag Connection

The patient symbol is printed on pump door over port where downstream tubing exits pump.

Figure 1-13 Patient Connection

EN 60601-1 Type BF degree of protection against electrical shock. No electrical connection to patient. Drop from any angle from height of 3 feet shall not damage pump operation.

Figure 1-14 TYPE BF Shock Protection

EN 60529 degree of protection against water entering the enclosure. Water jets from any direction shall have no effect.

IP25

Figure 1-15 EN 60529

This symbol is printed on pump delivery sets. It indicates only one patient should use each disposable set.

SINGLE USE ONLY

Figure 1-16 Single Patient Use

This symbol is printed on pump delivery sets. It indicates pump delivery sets are made with materials that do not contain the plasticizer DEHP

DEHP

This Device is Not Made with DEHP

Figure 1-17 DEHP-free

The Infinity pump and delivery sets are made with materials that do not contain natural rubber latex.

This symbol is printed on pump delivery sets. It indicates pump delivery sets should be replaced every 24 hours.

24+

REPLACE EVERY 24 HOURS

Figure 1-18 Replace Every 24 Hours

2. DIRECTIONS FOR USE

Recommendation for First Use:

Since battery may not be fully charged when pump is first received, it is recommended that battery be charged for 6 hours prior to operating on battery power (*see Page 18 for additional information*).

Priming and Loading the Disposable Set

Step 1:

▸ **If you are using the Infinity Safety Screw Spike Set with a vented bottle or pre-filled bag**

Remove protective cover from tip, then insert tip into formula exit port of container. If using the Infinity Safety Screw Spike Set, secure the tip by tightly screwing threaded components together. (*Figure 2-1*).

▸ **If you are using the 500ml or 1200ml disposable set:**

Hold bag upright and pour in feeding solution (*Figure 2-2*). Close cap securely.

NOTE: Blenderized or aggressively mixed solutions may have foam. If using this type of solution, allow it to sit for 10 to 15 minutes before pouring into bag. This will reduce the chance of an alarm due to air in the tubing.

Step 2:

Remove protective cover from transitional stepped connector. If using pole clamp, protective cover may be placed in the groove on back of clamp (*Figure 2-3*).

NOTE: If set is to be used with a carry pack, all air must be removed from bag and tubing. **Continue to step 3 for instructions on removing air**. If set is to be hung above pump, i.e. on an IV pole, **you may skip to step 4**.
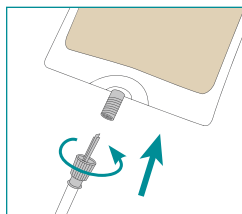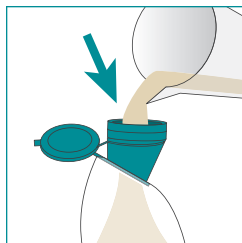

Figure 2-1 Screw Tip onto Container
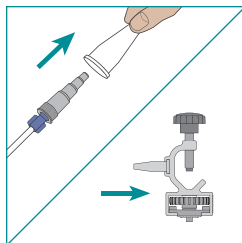

Figure 2-2 Fill Bag

Figure 2-3 Remove Cover from Transitional Stepped Connector / Place Cover on Pole Clamp

Step 3:

Turn bag upside down and gently squeeze. Tilt bag as needed to to evacuate air through tubing port (*Figure 2-4*).

Step 4:

Gently pinch teal colored tubing **below** "⬙" symbol. Hold this position until air is removed from tubing. Gently squeeze bag at same time to assist fluid flow. If fluid does not flow, pinch pressure may be too strong. (*Figure 2-5*).

NOTE: Inside the teal colored tubing, below the "⬙" symbol is the in-line occluder. The in-line occluder is the built-in anti free-flow valve. By pinching tubing gently, the tubing moves away from the in-line occluder allowing fluid to flow (*Figure 2-6*). It is important to only pinch the tubing below the "⬙" symbol to avoid damaging the in-line occluder.

NOTE: Be extremely careful to pinch tubing using only the flat, soft part of your finger. Do not use fingernails when pinching tubing; doing so may puncture the delivery set (*Figure 2-7*). If you suspect that the delivery set has been punctured, please discard and use a new set.

NOTE: Air may also be removed from tubing using the pump's priming feature. See step 7 for instructions on using the priming feature.
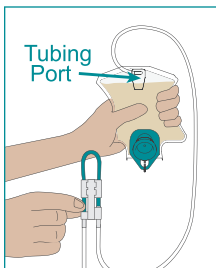
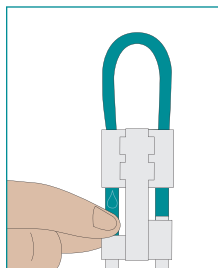Tubing Port

Figure 2-4 Squeeze Bag
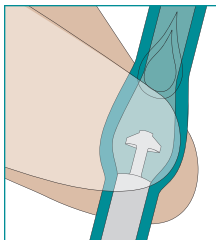
Figure 2-5 Pinch Tubing
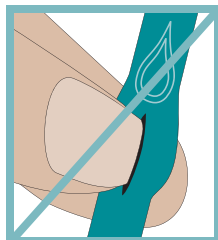
Figure 2-6 Tubing Segment Being Pinched

Figure 2-7 Tubing Segment Being Punctured by Fingernail

Step 5:
Loop silicone tubing around pump wheel stretching lightly. Place cassette into pump (*Figure 2-8*). **Close pump door** (*Figure 2-9*).

NOTE: See pages 33-34 for pump use with a backpack.

Step 6:
Press and hold **ON/OFF** key for 1.5 seconds to turn pump on. While pump runs through a self test, display will light and an audible alarm will sound as pump displays the nine digit serial number three digits at a time for one second each. The display will then show the letter 'R' followed by a number, which is the software revision.

Next, all segments of display will be shown for 2 seconds. **Verify all display segments and symbols are active.**

The self test is complete and pump will then display last programmed rate and will be in pause mode.

If any air is still in the tubing, continue to Step 7 to use pump prime feature.

Step 7:
Press and hold **PRIME** key. Alarm will sound once and pump will begin pumping at an approximate rate of 700 ml/hr. Display will read "TO STOP LET GO" (*Figure 2-10*). Once all air is removed from tubing, release key. Pump will stop, display will revert to last programmed rate, and pump will be in pause mode.

NOTE: Occlusion and air in line alarms are disabled while priming.

For pump operation instructions:

▸ For a Single Feeding Example: go to *Page 10*.
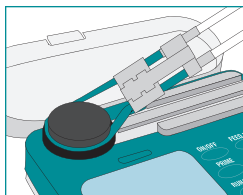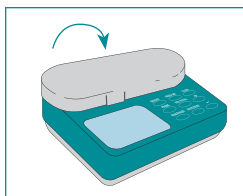▸ For an Interval Feeding Example: go to *Page 13*.

Figure 2-8 Seat Cassette
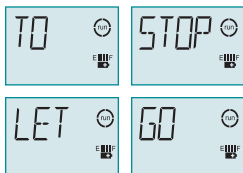

Figure 2-9 Close Pump Door

Figure 2-10 Priming Indication

Operating the Pump
A Single Feeding Example

CAUTION: Please refer to pages v-vi for additional usage considerations.

If you want to deliver 500 ml of enteral feeding solution at a rate of 120 ml/hr and then stop the pump:

Key Sequence for "A Single Feeding Example"

| ON/OFF | ⇨ | + − | 120 ml/h | ⇨ | RATE/DOSE | ⇨ | + − | 500 ml | ⇨ | RUN/PAUSE |

Step 1:
Prepare the disposable set with enteral feeding solution as described in the Priming and Loading the Disposable Set instructions (*page 7*).

Step 2:
Hang feeding bag or container so that the bottom of bag is at or above the level of the pump door (refer to page 37).

> **OR** - If an Infinity carry pack is to be used, load pump and feeding bag into the proper compartments, securing pump, bag, and tubing with the pack's straps (*Pages 33-34*).

Step 3:
Turn pump on by pressing the **ON/OFF** key. After running the self test, display will show last programmed rate.
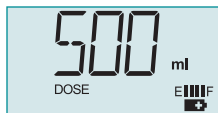
Step 4:
Press the **+** or **-** key to change the rate to 120 ml/hr. Hold down either key to change rapidly (*Figure 2-11*).

Step 5:
Press the **RATE/DOSE** key to display dose. Press the **+** or **-** key until a dose of 500 ml is displayed (*Figure 2-12*).

Figure 2-11 Program Rate to 120 ml/hr

Figure 2-12 Program Dose to 500 ml

NOTE: For a single feeding the feed interval setting should be programmed to NONE (*Figure 2-13*). When you have finished setting rate and dose check the display to see if it reads FEED INTERVAL. If it does, press the **FEED INT** key, then press the **CLEAR** key. Display will read NONE.

Figure 2-13 Clear Feed Interval

Step 6
Connect end of disposable set to the patient's enteral feeding tube (*Figure 2-14*).

Step 7
Press the **RUN/PAUSE** key. Pump will begin running. Display will show programmed rate and the arcs around the run symbol will rotate (*Figure 2-15*).

While pump is running, the following may be viewed by pressing the appropriate key: **Rate**, **Dose**, and **Feed Interval**.

To view the amount delivered in the current feeding, press the **VOL/TOTAL** key (*Figure 2-16*). This counter will reset itself when the previously programmed dose has been completed and a new feeding is started, or if a feeding is interrupted and Rate, Dose or Feed Interval is changed.

To view the amount delivered over the course of several feedings press the **VOL/TOTAL** key a second time. Display will read TOTL then the amount. This counter never resets itself. It can only be reset by the user (*Figure 2-17*).

While pump is running, the settings cannot be changed and the Prime feature is disabled.

If you want to stop pump at any time, press the **RUN/PAUSE** key. Display will show rate, and pump will be in pause mode. Pump will save the memory of where it was in the feeding before being paused. Or, turn pump off by pressing the **ON/OFF** key.
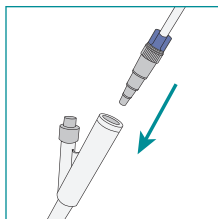

Figure 2-14 Connect disposable set to feeding tube

Figure 2-15 Pump is Running

Figure 2-16 Amount Currently Delivered

Figure 2-17 Total Amount Delivered

11

To restart pump when in paused mode, press the **RUN/PAUSE** key. The pump will restart the feeding at the point where it was paused.

NOTE: ANY CHANGES TO PUMP SETTINGS DURING A FEEDING CYCLE WILL CAUSE PUMP TO START A NEW FEEDING; IT WILL NOT START WHERE IT LEFT OFF.

Feeding Completion:
When the dose has been completely delivered, pump will stop running, and display will read DOSE DONE. Pump will be in a pause mode until it is turned off or feeding is restarted. To clear DOSE DONE, press and hold the **ON/OFF** key for 1.5 seconds to turn pump off, or press the **RUN/PAUSE** key to put pump in pause mode. Adjustments to settings can be made at this time, or press the **RUN/PAUSE** key a second time to start another feeding using same rate, dose, and feed interval settings.

If you would prefer the alarm to sound when the dose is complete, you can change the pump dose complete alarm setting to BEEP WHEN DONE. See the User Preference Settings section (*Page 19*) for instructions to change this setting. When set to BEEP WHEN DONE, the pump will stop at the end of the feeding, beep intermittently, and display will read DOSE DONE (*Figure 2-18*). To silence alarm when the dose is complete, press and hold the **ON/OFF** key for 1.5 seconds to turn pump off, or press the **RUN/PAUSE** key to put pump in pause mode.

Figure 2-18 DOSE DONE

NOTE: To program an infinite dose, press and hold the **+** key until display reads INF.
When an infinite dose has been programmed, pump will not alarm DOSE DONE. Pump will run continuously as long as feeding solution remains in the bag. When empty, pump will alarm NO FOOD or NO FLOW IN.

Next Feeding:

Turn pump on. Previous settings for rate, dose, and feed interval will be saved in memory. If no changes are required, verify each setting is correct and restart pump running.

NOTE: Rate, dose, and feed interval settings can be locked so that changes cannot be made. See the User Preference Settings section (*Page 19*) for instructions to change this feature.

Operating the Pump
An Interval Feeding Example

CAUTION: Please refer to pages v-vi for additional usage considerations.

If you want to deliver 100 ml of enteral feeding solution at a rate of 50 ml/hr, and repeat this feeding every 6 hours:

Key Sequence for "An Interval Feeding Example"

Step 1:

Prepare the disposable set with enteral feeding solution as described in the Priming and Loading the Disposable Set instructions (*Page 7*).

Step 2:

Hang feeding bag or container so that the bottom of bag is at or above the level of the pump door (refer to page 37).

OR - If an Infinity pack is to be used, load the pump and feeding bag into the proper compartments, securing pump, bag and tubing with the pack's straps (see *Page 32*).

Step 3:

Turn pump on by pressing the **ON/OFF** key. After running the self test, display will show last programmed rate.

Step 4:
Press the **+** or **-** key to change the rate to 50 ml/hr. Hold down either key to change rapidly (*Figure 2-19*).

Step 5:
Press the **RATE/DOSE** key to display dose. Press the **+** or - key until a dose of 100 ml is displayed (*Figure 2-20*).

Step 6:
Press the **FEED INT** key to display the feed interval setting. Press the **+** or **-** key until 6.00 hr is displayed (*Figure 2-21*).

NOTE: The amount of time to complete a rate and dose combination can be figured by dividing the dose by the rate (Dose/Rate = Time). The number of hours to be programmed as the feed interval is the amount of time to deliver the dose plus the amount of time pump should pause. Example: 100 ml divided by 50 ml/hr equals 2 hours for feeding delivery, plus a pause of 4 hours equals a feeding interval of 6 hours (100 ml ÷ 50ml/hr = 2 hours running + 4 hours pause = 6 hours from feeding start time to start time).

Pump will calculate number of hours it will take to deliver the rate and dose combination. When the **FEED INT** key is pressed the first available value will be compatible with that combination. In this example the first available value will be 2.00 hr.

NOTE: Feed interval is displayed in hours and minutes, i.e. 5.10 = 5 hours and 10 minutes.

NOTE: Feed interval cannot be programmed if rate and dose combination requires more than 24 hours to deliver.

Figure 2-19 Program Rate to 50 ml/hr

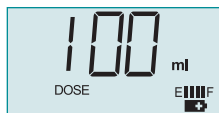*Figure 2-20 Program Dose to 100 ml*
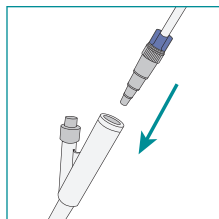

Figure 2-21 Program Feed Interval 6.00 hr

Figure 2-22 Connect disposable set to feeding tube

Step 7:
Connect end of disposable set to patient's enteral feeding tube. (*Figure 2-22*).

Step 8:

Press the **RUN/PAUSE** key. Pump will begin running. Display will show programmed rate, the arcs around the run symbol will rotate and display will read FEED INTERVAL (*Figure 2-23*).

Figure 2-23 Pump is Running

While pump is running the following may be viewed by pressing the appropriate key: Rate, Dose, and Feed Interval.

To view the amount delivered in the current feeding, press the **VOL/TOTAL** key (*Figure 2-24*). This counter will reset itself when the previously programmed dose has been completed and a new feeding is started, or if a feeding is interrupted and Rate, Dose or Feed Interval is changed.

Figure 2-24 Amount Currently Delivered

To view the amount delivered over the course of several feedings press the **VOL/TOTAL** key a second time (*Figure 2-25*). Display will read TOTL then the amount. This counter never resets itself, it can only be reset by the user.

Figure 2-25 Total Amount Delivered

While pump is running, the settings cannot be changed and the Prime feature is disabled.

If you want to stop pump at any time, press the **RUN/PAUSE** key. Display will show rate, and pump will be in pause mode. Or, turn pump off by pressing the **ON/OFF** key.

When you would like to restart pump, press the **ON/OFF** and/or the **RUN/PAUSE** key. Pump will save the memory of where it was in the feeding before stopping. Press the **RUN/PAUSE** key and pump will restart at the point where it was stopped.

NOTE: Any changes to pump settings during a feeding cycle will cause pump to start a new feeding; it will not start where it left off.

Feeding Completion:

When the dose has been completely delivered,
pump will stop running and display will read NEXT
DOSE then give the number of hours and minutes
until feeding will be repeated (*Figure 2-26*). Display
will show the run symbol flashing without the arcs
rotating around it. Pump will repeat this cycle until
disposable set is empty or until it is stopped by user.

NOTE: When a feed interval has been programmed,
pump will not alarm DOSE DONE. Pump will
cycle continuously as long as feeding solution
remains in the bag. When empty, pump
will alarm NO FOOD or NO FLOW IN.

To stop feeding, press the **ON/OFF** key for 1.5
seconds to turn pump off or press the **RUN/PAUSE**
key to put pump in pause mode. Adjustments
to settings can be made at this time.

*Figure 2-26 Time Until
Next Feeding*

New Feeding Cycle:

Turn pump on. Previous settings for rate, dose, and feed interval
will be saved in memory. If no changes are required, verify
each setting is correct and restart pump running.

NOTE: Rate, dose, and feed interval settings can be locked into place
so that changes cannot be made. See the User Preference Settings
section (*Page 19*) for instructions to change this feature.

The Battery
Running on Battery Power

Infinity will run for 24 hours at a rate of 125 ml/hr. A fully depleted battery takes approximately 6 hours to fully charge.

When pump is running on battery power the battery symbol will appear in the display (*Figure 2-27*).
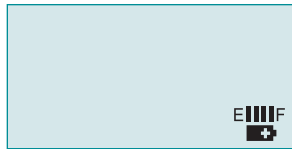
Figure 2-27 Battery Power Indicator

The segments or blocks between E and F represent the fuel gauge of the battery. Each block represents approximately 6 hours of charge. When each bar is half spent, it will begin to flash, indicating approximately 3 hours of charge is left for that bar. When the last block is gone, the battery symbol will blink to indicate there is approximately 30 minutes of charge left. Display will flash LOW BATT every 3 seconds and pump will beep every 2 seconds to remind user of low battery condition. When battery is fully depleted pump will turn off automatically.

NOTE: The battery life is an approximation based on a fully charged battery and a flow rate of 125 ml/hr. Higher flow rates, high number of charge/discharge cycles, or extreme temperatures usage will run the battery down faster, while lower flow rates will allow the battery to last longer. The expected service life of the battery is 2 to 5 years, depending on usage.

The Battery
Charging the Battery

To charge the battery, insert plug from AC Adapter/Charger into port on the left side of pump. Plug charger into a wall outlet.

Pump will charge whether it is turned off or running.

When charger is plugged in and charging, the plug symbol will appear in the display and the fuel gauge will display four bars scrolling from E to F. This pattern continuously repeats while pump is charging (*Figures 2-28a through 2-28e*). When bars stop scrolling pump is done charging.

To check the status of battery during charging, disconnect charger from pump and turn on pump.

NOTE: If pump shuts down due to low battery, charging less than 10 minutes may result in an ER99 alarm. Fully charge battery if depleted (*see page 22 to clear alarm*).
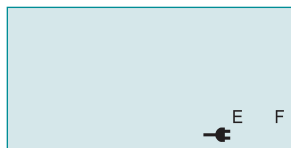
a
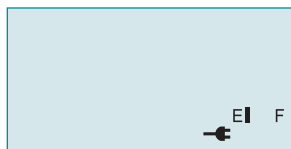
b
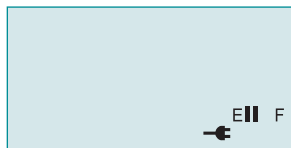
c
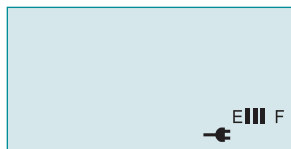
d
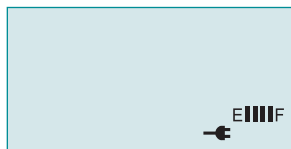
e

Figure 2-28 Fuel Gauge

User Preference Settings

There are **four** user preference settings. These settings can be changed to fit the user's needs.

1. Alarm Volume:
The alarm has two volumes, high or low. Pump default is low (*Figure 2-29*).

2. Settings Lock:
This allows user to set a rate, dose, and feed interval and then lock those settings so they cannot be changed unintentionally. This will also lock the volume counters from being unintentionally cleared. Pump default is unlocked (*Figure 2-30*).

3. Dose Done:
There are two settings for the DOSE DONE alarm: MUTE WHEN DONE or BEEP WHEN DONE. Pump default is MUTE WHEN DONE (*Figure 2-31*).

4. Backlight:
To conserve battery life, the backlight will turn off automatically 10 seconds after the last key has been pressed. However, while pump is connected to an A/C current the backlight settings can be adjusted. The light can be set to ON or OFF. With the ON setting the backlight will remain on the entire time pump is plugged in to a live power outlet. With the OFF setting, the backlight will turn on when a key is pressed and turn off 10 seconds after the last key has been pressed. Pump default is ON (*Figure 2-32*).

NOTE: Regardless of setting, the backlight will always turn off 10 seconds after pump is turned off.
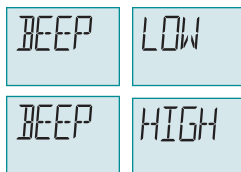

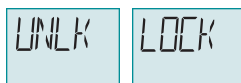*Figure 2-29 Alarm Volume Settings BEEP LOW and BEEP HIGH*

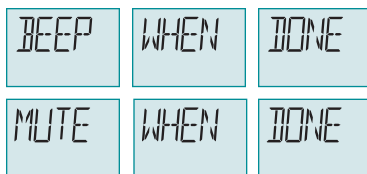*Figure 2-30 Settings Lock UNLK and LOCK*

Figure 2-31 Dose Done Settings BEEP WHEN DONE and MUTE WHEN DONE

Figure 2-32 Backlight Settings LITE OFF and LITE ON

To adjust these settings:

Key Sequence for "Adjusting User Preference Settings"

ON/OFF		+	HIGH	PRIME	+	LOCK	PRIME	+	MUTE	PRIME	+	LITE ON	PRIME
+		–	LOW		–	UNLK		–	BEEP		–	LITE OFF	

Step 1:

With pump turned off, press and hold for 1.5 seconds the **+ and** the **ON/OFF** keys at the **same time**. Pump will beep and then display the words BEEP HIGH or BEEP LOW. Press the **+** key to change to HIGH or the **-** key to change to LOW. Pump will give a triple beep when the **+** or **-** keys are pressed and setting will change. If setting is as desired, do not press either key.

Step 2:

Press the **PRIME** key. Display will read UNLK (unlocked) or LOCK (locked). Press the **+** key to change to LOCK (locked) or the **-** key to change to UNLK (unlocked). If setting is as desired, do not press either key.

Step 3:

Press the **PRIME** key again. Display will read MUTE WHEN DONE or BEEP WHEN DONE. Press the **+** key to change to BEEP WHEN DONE or the **-** key to change to MUTE WHEN DONE. If setting is as desired, do not press either key.

Step 4:

Press the **PRIME** key again. Display will read LITE ON or LITE OFF. Press the **+** key to change to LITE ON or the **-** key to change to LITE OFF. If setting is as desired, do not press either key.

Step 5:

Press the **ON/OFF** to turn pump off. Setting changes will be saved automatically.

NOTE: Once user has changed the desired user preference setting, it is not necessary to view the remaining user preference settings. Each change will be automatically saved as it is made.

NOTE: Pump will turn off automatically after 2 minutes in the User Preference Settings if the user does not turn it off before then.

3. ALARMS, MESSAGES, AND INDICATIONS

Following is a list of all alarms, display messages, and indications that are used by the Infinity enteral feeding pump. Each alarm, message, or indication is described in detail on the following pages:

Should any of these alarms or indications continue after troubleshooting, contact your healthcare provider for pump service.

Alarms

ER01 - ER99 (*Figure 3-1*)

Pump will sound a continuous beep and display
will read ER followed by a two digit number or ERR
followed by a letter to indicate a self-test has failed.

> **To clear alarm:** Turn the pump
> off and then back on.
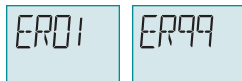
Figure 3-1 ER01 - ER99 Alar ms

WARNING: If an error occurs
(ER01 - ER99 will appear in display), all settings and volume counters
should be checked and verified before starting a feeding.

LOAD SET (*Figure 3-2*)

Pump will sound a dual tone beep repeatedly
and display will read LOAD SET.

> **Why:** This alarm will sound when pump attempted
> to run with the set improperly loaded or missing.
>
> **To correct the problem:** Press the **RUN/
> PAUSE** key to silence alarm and place pump
> in pause mode, then check the following:

1. An Infinity disposable set is loaded into
   pump properly and door is closed.

2. Check cassette receptacle for cleanliness,
   especially around pressure sensors.
   If cleaning is necessary, refer to
   CHAPTER 5 - CLEANING (Page 31).

Figure 3-2 LOAD SET Alarm

LOW BATT (*Figure 3-3*)

When 1 hour or less of battery life is available,
display will flash LOW BATT every 3 seconds and
pump will beep every 2 seconds to indicate battery
is low and pump will soon stop running.

> **To correct the problem:** Plug in AC
> Adapter/Charger to recharge battery.

Figure 3-3 LOW BATT Alarm

NO FLOW IN (*Figure 3-4*)

Pump will sound a dual tone beep repeatedly and display will read NO FLOW IN.

> **Why:** This alarm has occurred because pump has detected blockage in the set between pump and bag.

> **To correct the problem:** Press the **RUN/PAUSE** key to silence alarm and place pump in pause mode, then check the following:

1. Check tubing for kinks or formula clumps. Correct blockage.

2. Check cassette receptacle for cleanliness, especially around the pressure sensors. If cleaning is necessary, refer to *CHAPTER 5 - CLEANING* (*Page 31*).

Figure 3-4 NO FLOW IN Alarm

NO FLOW OUT (*Figure 3-5*)

Pump will sound a dual tone beep repeatedly and display will read NO FLOW OUT.

> **Why:** This alarm has occurred because pump has detected a blockage in the set between pump and patient.

> **To correct the problem:** Press the **RUN/PAUSE** key to silence alarm and place pump in pause mode, then check the following:

1. Check tubing for kinks or blockages. Remove kink or blockage.

2. Check cassette receptacle for cleanliness, especially around pressure sensors. If cleaning is necessary, refer to *CHAPTER 5 - CLEANING* (*Page 31*).

3. Back pressure from patient may also cause this alarm. Discuss with physician.

Figure 3-5 NO FLOW OUT Alarm

NO FOOD (*Figure 3-6*)
Pump will sound a dual tone beep repeatedly
and display will read NO FOOD.

> **Why:** This alarm has occurred because
> pump has detected air in the tubing. It takes
> approximately 1 ml of air, which is approximately
> 5 inches (12.7 cm) in length entering the
> teal colored tubing to cause an alarm.

> **To correct the problem:** Press the **RUN/**
> **PAUSE** key to silence alarm and place pump
> in pause mode, then check the following:

Figure 3-6 NO FOOD Alarm

1. Check feeding bag for food. If it is empty,
   refill bag and prime the set to remove air from the bag and tubing.

2. Check tubing for air bubbles. If bag is full but air is present in the
   tubing, disconnect set from patient, press and hold the **PRIME**
   key until air bubble has moved to the end of the tubing.

3. Check cassette receptacle for cleanliness, especially around the air
   sensor. If cleaning is necessary, refer to
   CHAPTER 5 - CLEANING (*Page 31*).

4. Check that an Infinity disposable set is loaded
   into pump properly and door is closed.

5. Check disposable set for worn tubing.
   If it is worn, replace with a new set.

NOTE: Blenderized or aggressively mixed solutions
may have foam. Small foam bubbles may collect in
the air sensor area and must be cleared in order to
avoid a NO FOOD alarm. Allowing foamy solutions
to sit for 10 to 15 minutes after mixing and prior to
pouring into the bag will reduce the amount of foam.

PUSH RUN TO FEED (*Figure 3-7*)
 Pump will sound a dual tone beep repeatedly
and display will read PUSH RUN TO FEED.

*Figure 3-7 PUSH RUN
TO FEED Alarm*

Why: This alarm has occurred because pump has been in pause mode for 2 minutes.

To correct the problem: Press the **RUN/PAUSE** key to silence alarm and place pump in pause mode again. Program and use pump or press the **ON/OFF** key to turn it off.

SHUT DOOR (*Figure 3-8*)

Pump will sound a dual tone beep repeatedly and display will read SHUT DOOR. Note: This alarm is available only on select pumps.

Figure 3-8 SHUT DOOR Alarm

Why: This alarm has occurred because the pump door was opened while pump was running.

To correct the problem: Press the **RUN/PAUSE** key to silence alarm and place pump in pause mode then shut the door. Check door is latched securely. If door will not stay closed, check door latch and latch pocket on pump are not broken or cracked.

Messages

DOSE DONE (*Figure 3-9*)
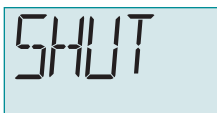
This message indicates a single feeding dose has been delivered.

Figure 3-9 DOSE DONE Message

To clear pump: Either press the **ON/OFF** key to turn pump off, or press the **RUN/PAUSE** key to put pump in pause mode before starting another feeding.

NEXT DOSE (*Figure 3-10*)

If the interval feeding feature is in use, between feedings display will read NEXT DOSE ##.## hr. (##.##, indicates the time in hours and minutes until the next dose begins.)

Figure 3-10 NEXT DOSE Message

If the currently programmed feeding is not desired, either press the **ON/OFF** key to turn pump off or press the **RUN/PAUSE** key to place pump in pause mode where adjustments can be made to the settings.

Indications

CHEK (*Figure 3-11*)

Pump will sound a dual tone beep once and CHEK, RATE, DOSE, and FEED INTERVAL will all blink on the display.

RATE DOSE
FEED INTERVAL

Figure 3-11 CHEK Indication

> **Why:** This alarm sounds when the RATE, DOSE, and FEED INTERVAL are not compatible. As discussed in the Interval Feeding Example (Page 13), pump divides the dose by the rate to determine the amount of time required for the dose to be delivered.

Based on the RATE and DOSE combination, when the FEED INTERVAL is being programmed, the first value available will be the first value that is compatible with the RATE and DOSE settings. Should the RATE or DOSE be changed after the FEED INTERVAL has been programmed, and the combination requires the delivery time to be longer than the amount of time programmed as the FEED INTERVAL, user will receive this alarm.

> For example, if rate is 100 ml/hr, and dose is 200 ml, then the pump will take 2 hours to deliver the dose. The first available FEED INTERVAL will be 2.00 hr. However, if the dose is changed to 300 ml, the dose will now take 3 hours to deliver and therefore 2.00 hr is an impossible FEED INTERVAL. If the **RUN/ PAUSE** key is pressed before the FEED INTERVAL has been changed (the next available value being 3.00), the pump will give the CHEK alarm.

> **To correct the problem:** Press the RUN/ PAUSE key to put pump in pause mode, and reprogram the settings.

TO STOP LET GO (*Figure 3-12*)

When pressing and holding the **PRIME** key during manual prime, alarm will sound once, pump will begin pumping at an approximate rate of 700 ml/ hr and display will read "TO STOP LET GO"

> **To stop priming:** Release the **PRIME** key.

Figure 3-12 Manual Priming Indication

Battery Doesn't Hold Its Charge

Battery will lose its charge if stored for a long period of time or if stored at high temperatures (such as in an automobile during summer).

To correct the problem: Recharge the battery. If the problem continues during regular use, contact your healthcare provider for service.

Battery Doesn't Charge

If the battery symbol and the E and F of the fuel gauge (*Figure 3-13*) are flashing while the pump is plugged in, the battery is not charging.

To correct the problem: Contact your healthcare provider for service.
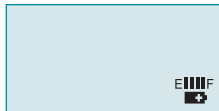
Figure 3-13 Battery Symbol and the E and F of the Fuel Gauge

Charger Installed but No Plug Symbol Visible

If the plug symbol does not display after the AC Adapter/Charger is plugged into pump and a live power outlet, then charger is not charging battery.

To correct the problem: Check the following:

▸ Verify that the wall outlet works by plugging in another appliance, such as a lamp.

▸ Charger is connected properly.

If this does not correct the problem, pump or charger may be damaged. Contact your healthcare provider for service.

NOTE: There are no user serviceable or replaceable components inside the Infinity.

4. TROUBLESHOOTING GUIDE

NO FOOD Alarm

If re-priming of the pump delivery set is required, it is advisable to disconnect the enteral adapter from the patient's feeding tube while re-priming.

Is bag of pump delivery set empty?	**YES ▶**	Refill bag, re-prime delivery set and resume feeding.
▼ NO ▼		
Is air present in the tubing?	**YES ▶**	Has all air been removed from **bag** of pump delivery set?
▼ NO ▼		**IF NO:** Manually prime tubing by turning bag upside down, gently squeezing lower half of bag while pinching the teal colored tubing just below the " 🝱 "drop symbol. Hold this position until all air is removed from bag and tubing. **IF YES:** Press and hold the PRIME key to move the air in the tubing past pump delivery set cassette and resume feeding.
Is formula blenderized or aggressively mixed?	**YES ▶**	Let formula sit for 10-15 minutes before preparing pump delivery set for feeding. If foam is present in tubing, flush by priming pump delivery set either manually or with the pump and resume feeding.
▼ NO ▼		
Are air bubbles trapped inside the cassette?	**YES ▶**	Remove tubing from pump and manually prime tubing by turning bag upside down, gently squeezing lower half of bag while pinching the teal colored tubing just below the drop symbol. Hold this position until all air has passed through the teal segment of the tubing.
	NO ▶	**If alarm continues, contact Moog Customer Service at 800.970.2337 for assistance.**

ER01 - ER99 Alarms

Was pump door open while pump was turned on or while running?	**YES / UNSURE ▶**	Turn pump off. Unload and reload delivery set cassette. Make sure door is closed securely, then turn pump back on.
	NO ▶	**If alarm continues, contact Moog Customer Service at 800.970.2337 for assistance.**

LOAD SET Alarm

Is door closed securely?	NO / UNSURE ▶	Turn pump off. Unload and reload delivery set cassette. Make sure door is closed securely, then turn pump back on.
▼ YES ▼		
Is door cracked or tab on side of door broken?	YES ▶	**If alarm continues, contact Moog Customer Service at 800.970.2337 to order a new door.**
	NO ▶	**If alarm continues, contact Moog Customer Service at 800.970.2337 for assistance.**

NO FLOW IN or NO FLOW OUT Alarms

▸ **NO FLOW IN** - Occlusion between delivery set and pump.
▸ **NO FLOW OUT** - Occlusion between pump and patient.

Is delivery set tubing pinched, kinked, or clogged?	YES ▶	Check delivery set for obstructions or kinks in tubing. Correct blockage and resume feeding.
▼ NO ▼		
Is tab on inside of door broken?	YES ▶	**Contact Moog Customer Service at 800.970.2337 to order a new door.**
▼ NO ▼		
Is pressure sensor region of cassette receptacle clean?	NO ▶	Clean pressure sensor area with a cotton swab, soft cloth, or dampened sponge; or wash entire pump under running water. Do not use abrasive materials or harsh chemicals.
▼ YES ▼		
Are there visible signs of damage to pressure sensors area?	YES ▶	**Contact Moog Customer Service at 800.970.2337 to return pump for service**
	NO ▶	Disconnect from patient and fill a new delivery set with food. Prime set and start pump. **If alarm continues, contact Moog Customer Service at 800.970.2337 to return pump for assistance.**

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Charging Problems

Is A/C adapter charger plugged into wall outlet and pump properly?	**NO / UNSURE ▶**	Check connections for both wall plug and pump adapter. Green indicator light on charger wall plug should be illuminated and pump display should have plug symbol with scrolling bars between E and F of fuel gauge. When pump is fully charged, bars will stop scrolling.
▼ YES ▼		
Is wall outlet functioning properly?	**NO / UNSURE ▶**	Plug another device into outlet to verify outlet is functioning properly.
▼ YES ▼		
Does charger adapter appear to have any damage?	**YES ▶**	**Contact Moog Customer Service at 800.970.2337 to order a new charger**
▼ NO ▼		
Does charger port appear to have any damage including bent or missing pins?	**YES ▶**	**Contact Moog Customer Service at 800.970.2337 to return pump for service.**
▼ NO ▼		
Is Battery Symbol and E and F of fuel gauge flashing?	**YES ▶**	**Contact Moog Customer Service at 800.970.2337 to return pump for service.**
	NO ▶	

5. CLEANING

WARNING: To avoid electrical shock, never clean pump or Infinity AC Adapter/Charger with charger plugged into an outlet or pump turned on.

WARNING: Make sure the Infinity AC Adapter/Charger is completely dry before plugging into an electrical outlet.

To clean the Infinity enteral feeding pump:
Pump may be cleaned with warm soapy water (standard dish soap) and a nonabrasive sponge or soft cloth. Use a cotton swab to clean pathways of cassette receptacle and to remove teal silicon residue from pump wheel roller pins.

OR - Apply one of the following solutions for approximately 10 minutes, then wipe pump clean with a damp cloth or sponge:

  ‣ 5% bleach and water solution
  ‣ Multipurpose household disinfectant cleaner

Rinse pump by holding under a stream of warm water. Then, dry with a clean cloth.

NOTE: Clean pump as needed. If the pump is used on more than one patient, clean between each patient.

NOTE: Avoid harsh cleaners/disinfectants. They may cause damage to pump surfaces and may affect pump functionality. Moog has tested the following disinfectants for acceptability for cleaning/disinfecting the Infinity pump. These cleaning products are categorized below:
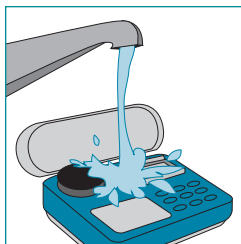
Figure 5-1 Rinsing Pump Under Stream of Water

Acceptable	Unacceptable
Metrex CaviCide	Ball Ruthless
5% Bleach and Water Solution	Wex-Cide 128
Warm Soapy Water (Standard Dish Soap)	Alcohol
	Vesphene Ilse

To clean the Carrying Packs:
The Infinity packs are machine-washable. Use cold water and gentle cycle, whenever possible. Hang to dry.

To clean the AC Adapter/Charger:
Infinity AC Adapter/Charger normally does not require cleaning. When desired, a dry or slightly damp cloth may be used to clean the outside surface of AC Adapter/Charger while it is disconnected from the wall outlet.

6. ACCESSORIES

Infinity AC Adapter/Charger
Order Number 23401-001
Plug AC Adapter/Charger into a wall outlet and plug connector into pump to operate on AC power and/or recharge battery (*Figure 6-1*).
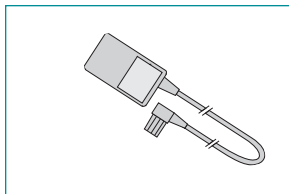
Figure 6-1 AC Adapter/Charger

Infinity Pole Clamp
Order Number 11981-001
Thread bolt into receptacle on the back of pump and tighten gray wheel to mount pump on clamp. If gray wheel is slightly loosened, pump can be rotated to snap into different positions. Retighten gray wheel when pump is in the desired position. Tighten black wheel to mount clamp on a pole (*Figure 6-2*).
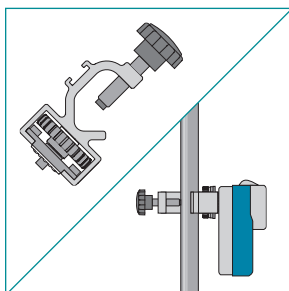
Figure 6-2 Pole Clamp / Pole Clamp with Pump Attached to IV Pole

Infinity
Adjustable Angle Pole Clamp
Order Number 29152-001
Thread bolt into receptacle on the back of pump and tighten knob to mount pump on clamp. If knob is slightly loosened, pump can be rotated to snap into different positions. Retighten knob when pump is in the desired position. Tighten black wheel to mount clamp on a pole. Pull pin to adjust angle (*Figure 6-3*).
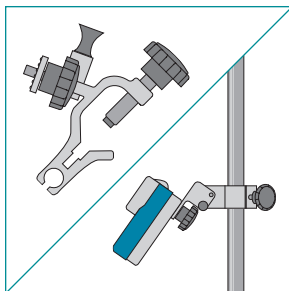
Figure 6-3 Adjustable Angle Pole Clamp / Adjustable Angle Pole Clamp with Pump Attached to IV Pole

Infinity Mini Backpack

Order Numbers PCK1001 (red), PCK1002 (light green and gray), PCK1003 (black and gray)
Pack holds Infinity with a 500 ml bag in the front section or can accommodate a
1200 ml bag in the rear section. Pump is secured with a Velcro® strap. A Velcro strap
secures the neck of the 500 ml or 1200 ml bag. The tubing is loaded into pump and
any excess length of tubing can be secured with a Velcro tab. The downstream tubing
then feeds through a port at bottom of pack (either side). Also included in this pack
is a pocket that may be used to hold an ice pack. *Dimensions: 13" H x 8" W x 4.5" D (33.0 cm*
*H x 20.3 cm W x 11.4 cm D). Approximate weight when loaded with pump and 500ml delivery set filled*
with 500ml of water: 2.9 lbs. (1.32 kg); 1200ml delivery set filled with 1200ml of water: 4.5 lbs. (2.04 kg)

Figure 6-4 Mini Backpack
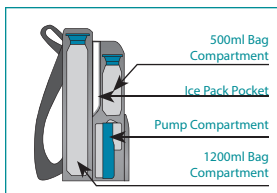
Figure 6-5 Mini Backpack (Cutaway
View of Internal Compartments)

500ml Bag
Compartment

Ice Pack Pocket

Pump Compartment

1200ml Bag
Compartment
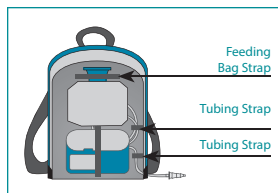
Figure 6-6 Mini Backpack (Cutaway
View of Internal Straps)

Feeding
Bag Strap

Tubing Strap

Tubing Strap

Infinity Super-Mini Backpack

Order Numbers PCK2001 (black), PCK2002 (light green and gray),
Pack holds Infinity with a 500 ml bag. Pump is secured with a Velcro strap. A
Velcro strap secures the neck of the 500 ml bag. The tubing is loaded into
pump and any excess length of tubing can be secured with a Velcro tab. The
downstream tubing then feeds through a port at bottom of pack (either side).
Dimensions: 9.5" H x 8" W x 4" D (24.1 cm H x 20.3 cm W x 10.2 cm D). Approximate weight
when loaded with pump and 500ml delivery set filled with 500ml of water: 2.3 lbs. (1.04 kg)

Figure 6-7 Super-Mini
Backpack
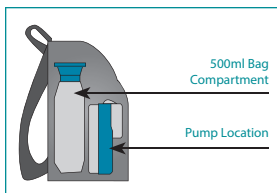
Figure 6-8 Super-Mini
Backpack (Cutaway View of
Internal Compartments

500ml Bag
Compartment

Pump Location
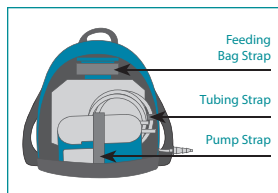
Figure 6-9 Super-Mini Backpack
(Cutaway View of Internal Straps)

Feeding
Bag Strap

Tubing Strap

Pump Strap

Infinity Waist Pack

Order Numbers PCK3001 (black and gray)

Pack holds Infinity with a 500 ml bag. Pump is secured with an elastic strap. A Velcro strap secures the neck of the 500 ml bag. The tubing is loaded into pump and any excess length of tubing can be secured with a Velcro tab. The downstream tubing then feeds through a port at bottom of pack (either side).

Dimensions: 7" H x 11" W x 3" D (17.8 cm H x 27.9 cm W x 7.6 cm D)

Figure 6-10 Waist Pack

Tubing Strap
Pump Strap
Feeding Bag Strap
Tubing Strap
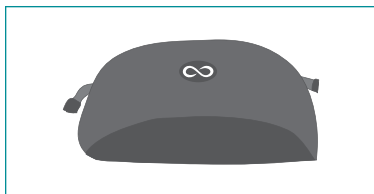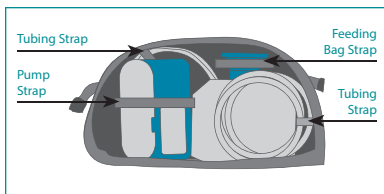
Figure 6-11 Waist Pack (Cutaway View of Internal Compartment and Straps)

Infinity Backpack

Order Numbers PCK4001 (black and gray)

Pack holds Infinity with a 500 ml bag or a 1200 ml bag. Pump is secured with a Velcro® strap. A Velcro strap secures the neck of the 500 ml or 1200 ml bag. The tubing is loaded into pump and any excess length of tubing can be secured with a Velcro tab. The downstream tubing then feeds through a port at bottom of pack (either side). Also included in this pack is a pocket that may be used to hold an ice pack. *Dimensions: 17" H x 8" W x 4" D (43.2 cm H x 20.3 cm W x 10.2 cm D)*

Figure 6-12 Backpack

Ice Pack Pocket
1200ml & 500ml Bag Compartment
Pump Compartment
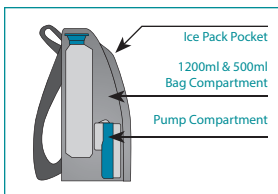
Figure 6-13 Backpack (Cutaway View of Internal Compartments)

Feeding Bag Strap
Tubing Strap
Tubing Strap
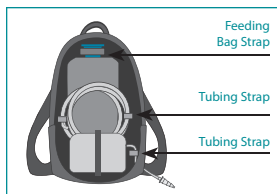
Figure 6-14 Backpack (Cutaway View of Internal Straps)

7. SPECIFICATIONS

SIZE	Pump Dimensions:	1.95" D x 5.65" W x 4.05" H
		(4.9 cm D x 14.4 cm W x 10.3 cm H
	Pump Weight:	14.4 oz (411.0 g)
BATTERY	Type:	Lithium Ion
	Life:	24 hours @ 125 ml/hr
		9 hours @ 600ml/hr
	Service Life:	2 - 5 years, depending on usage
	Charge Time:	Approximately 6 hours
	Charge temperature:	10 ℃ - 40 ℃
	Charge Level Indicator	
	Compact Wall Charger	
POWER SUPPLY	AC Adapter/Charger	
	Input:	100-240 VAC
		50-60 Hz
		400 mA
	Output:	5 VDC
		3.0A
	IP Rating:	IP42
DISPLAY	Backlit LCD	
MODE OF OPERATION	Continuous	
OPERATING ORIENTATION	Any	
FLOW RATE	Range:	0.1 - 600 ml/hr
	Increment:	0.1 ml/hr from 0.1 ml/hr to 10 ml/hr
	Accuracy:	1 ml/hr from 10 ml/hr to 600 ml/hr
		± 5% (*see page 37*)
DOSE	Range:	0.1 ml to 3000 ml or infinite dose
	Increment:	0.1 ml from 0.1 - 10 ml
		1 ml from 10 - 3000 ml
MAXIMUM INFUSION PRESSURE	Maximum dead head pressure is 40 PSI	
VOLUME DISPLAY	Current Dose Status	
	Accumulated	
INTERVAL FEED	Interval Feed Indication	
	Displays Time to Next Feed	
PROGRAM MEMORY RETAINED	When Pump is on or off	
PEDIATRIC USE	Yes	
PRIME	Yes	
DISPOSABLE SET FEATURES	Automatic Free-flow Protection	
	No Drip Chamber	
	Not made with DEHP	
	Not made with natural rubber latex	
	Expected shelf life: 3 years	
	Expiration date listed on packaging	

ALARMS	CHEK	Programming error - Incompatible RATE, DOSE, and FEED INTERVAL settings
	ER01 - ER99	Self-test error
	LOAD SET	Set not loaded properly
	LOW BATT	Battery Low
	NO FLOW IN	Upstream occlusion -5 psi (-34 kPa) Tolerance = ± 3psi (21 kPa) psi (pounds per square inch) kPa (kilopascals)
	NO FLOW OUT	Downstream occlusion, 12 psi (83 kPa) Tolerance = ± 3psi (21 kPa) psi (pounds per square inch) kPa (kilopascals) Downstream occlusion will alarm at 5 minutes at 125 ml/hr 2 hours at 1 ml/hr 12 hours at 0.1 ml/hr After occlusion is cleared, up to 1 ml of fluid will be released
	NO FOOD	Air in tubing - bag or set may be empty
	PUSH RUN TO FEED	Pump unused for 2 minutes
	SHUT DOOR	Door opened while pump was running
ACCESSORIES	AC Adapter/Charger Multi-position Pole Clamp (rotates 360°) Multi-purpose Infinity Custom Carry Packs	
WARRANTY	2 years	
OPERATING ENVIRONMENT	Temperature: Humidity: Pressure:	41 °F to 104 °F (5 °C to 40 °C) 10% to 95%, non- condensing 700 -1,060 hPa These conditions apply before and after the pump and disposable have been removed from their packaging. The pump requires 30 minutes to warm up/ cool down to its normal operating temperature from low/high storage temperatures.
STORAGE ENVIRONMENT	Temperature: Humidity:	-4 °F to 122 °F (-20 °C to +50 °C) 10% to 95% noncondensing These conditions apply before and after the pump and disposable have been removed from their packaging.
SERVICE LIFE	The pump is designed to provide a minimum of 5 years of service life	
CLASSIFICATION INFORMATION	Infinity Enteral Feeding Pump with internal battery Type BF Applied Part Infinity AC Adapter / Charger – Class II	

8. IMPORTANT PEDIATRIC CONSIDERATIONS

Infinity can be used on pediatric patients if the specifications of pump meet delivery requirements of the patient. The specifications of primary importance are:

▸ The flow rate range of Infinity is 0.1 ml/hr to 10 ml/hr in 0.1 ml/hr increments and 10 ml/hr to 600 ml/hr in 1 ml/hr increments.

▸ The pump and administration set ("pump system") is accurate to ±5% per volume delivered over one hour for flow rates of 5-600 mL/h, under the following conditions:

    ⇥ utilizing Moog Infinity disposable sets

    ⇥ fluid head height at +6.0 inches ± 0.3 inches (+15.24 cm ± 0.76 cm) at 95% confidence and 90% reliability with respect to center of rotor.

Note: Head height effect on accuracy is shown below (*Figure 8-1*).
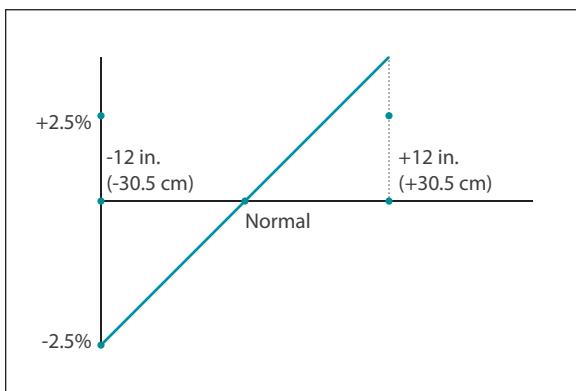
Figure 8-1 Head Height Effect on Accuracy

If these specifications meet the required feed regimen, Infinity can be used to deliver enteral formulas to pediatric patients. **ALWAYS VERIFY RATE, DOSE AND FEED INTERVAL BEFORE PROCEEDING TO FEED.**

9. ADDITIONAL TECHNICAL INFORMATION

For any questions or additional information, refer to the contact information on Page 46.

Infinity Disposable Set Displacement

When fully primed, the Infinity Disposable Set tubing contains approximately 15 mL of fluid. As the Infinity delivers fluid and empties the bag, approximately 3.5 mL of air is drawn into the tubing before the pump detects that the bag is empty. Therefore, approximately 11.5 ml of fluid remains in the disposable set when pump stops feeding. Be sure to account for this 11.5 ml of residual fluid when filling the disposable bag sets, especially for volume-sensitive users.

If you want to deliver 500 ml of fluid, this is how you would calculate how much fluid to place into the bag set.

3.5ml   15ml   11.5 ml

Figure 9-1 Disposable Set Residual Fluid

Total Fluid Desired for Feeding	+	Residual Fluid	=	Minimum Fluid Required in Bag Set
500 ml	+	11.5 ml	=	511.5 ml

Continue setting up the disposable bag set and pump according to *CHAPTER 2: DIRECTIONS FOR USE*, making sure to set the dose to 500 ml.

Electromagnetic Emissions/Interference

Electromagnetic emissions may affect the operation of any electronic medical device, including enteral feeding pumps.

The Infinity will not be affected by electromagnetic emissions in most environments. However, some electromagnetic fields produced by personal communication equipment, household appliances, or occupational tools may cause electromagnetic interference (EMI) which can affect the pump.

Possible sources of electromagnetic interference with electronic medical devices include, but are not limited to: cellular phones, cordless telephones, microwave ovens, anti-theft/security systems, blenders, and high-powered tools (i.e. drills, saws, chain saws). If electromagnetic emitting devices are operated within one yard/meter of the Infinity, the pump may automatically shut off and settings may return to their default values. Check the pump regularly if operating near sources of electromagnetic emissions.

The Infinity can safely be operated on commercial aircraft and is designed in accordance with EN 60601-1-2, EN 60601-1-4 and RTCA DO160D standards for electromagnetic emissions and immunity.

Guidance and manufacturer's declaration – electromagnetic emissions		
The Infinity is intended for use in the electromagnetic environment specified below. The customer or the user of the Infinity should assure that it is used in such an environment.		
Emissions Test	**Compliance**	**Electromagnetic environment - guidance**
RF Emissions CISPR 11	Group 1	The Infinity 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	
Harmonic emissions IEC 61000-3-2	Class B	The Infinity 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.
Voltage fluctuations/Flicker emissions IEC 61000-3-3	Complies	

Guidance and manufacturer's declaration – electromagnetic immunity			
The Infinity pump is intended for use in the electromagnetic environment specified below. The customer or the user of the Infinity pump should assure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Electrostatic discharge (ESD) IEC 61000-4-2	± 8 kV contact ± 15 kV air	± 8 kV contact ± 15 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrostatic fast transient/burst IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for input/output lines 100 kHz PRR	± 2 kV for power supply lines ± 1 kV for input/output lines 100 kHz PRR	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	2kV (0, 90, 180, & 270° phase)	2kV (0, 90, 180, & 270° phase)	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<0 % U_T (>95 % dip in U_T) for 0.5 cycle 40 % U_T (60 % dip in U_T) for 5 cycles 70 % U_T (30 % dip in U_T) for 25/30 cycles <0 % U_T (>95 % dip in U_T) for 250/300 cycles	<0 % U_T (>95 % dip in U_T) for 0.5 cycle 40 % U_T (60 % dip in U_T) for 5 cycles 70 % U_T (30 % dip in U_T) for 25/30 cycles <0 % U_T (>95 % dip in U_T) for 250/300 cycles	Mains power quality should be that of a typical commercial or hospital environment. The Infinity pump allows continued operation during power mains interruptions via the internal battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m	Class 2 (30 A/m)	Power frequency magnetic fields should be at levels characteristic of a typical location in the typical commercial or hospital environment.
NOTE U_T is the a.c. mains voltage prior to application of the test level.			

Guidance and manufacturer's declaration – electromagnetic immunity			
The Infinity pump is intended for use in the electromagnetic environment specified below. The customer or the user of the Infinity pump 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	3 Vrms 150 kHz to 80 MHz 6 Vrms (ISM bands)	3 Vrms 6 Vrms (ISM bands)	Portable and mobile RF communications equipment should be used no closer to any part of the Infinity pump, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance $d=1.2\sqrt{P}$
Radiated RF IEC 61000-4-3	10 V/m 80 MHz to 2.7 GHz	10 V/m	$d=1.2\sqrt{P}$ 80 MHz to 800 MHz $d=2.3\sqrt{P}$ 800 MHz to 2.7 GHz
Radiated RF RTCA/DO-160E Section 20	75 V/m 100 MHz to 8 GHz	No Equipment Category specified (75 V/m)	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 meters (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 Infinity pump is used exceeds the applicable RF compliance level above, the Infinity pump should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the Infinity pump.			
[b] Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.			

Recommended separation distances between portable and mobile RF communications equipment and the Infinity pump			
The Infinity pump is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Infinity pump can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Infinity pump as recommended below, according to the maximum output power of the communications equipment.			
Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m		
	150 kHz to 80 MHz d=1.2√P	80 MHz to 800 MHz d=1.2√P	800 MHz to 2.7 GHz d=2.3√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. | | | |

Routine Maintenance

There is no routine calibration or adjustment procedure required for Infinity.

There are no user-serviceable parts. All service requests should be referred to Moog technical service.

Disposal Information

At the end of their service lifetime, the pump and its electrical accessories (AC Adapter Charger and Data Download Accessory Cable) should be disposed of according to local standards and regulations governing the disposal of electronic waste (e-waste). Other accessories can be disposed of or recycled as standard non-hazardous waste.

Start Up Graph and Trumpet Graph

Available upon request

10. WARRANTY

Solely for the benefit of the original buyer, Moog Medical Devices Group ("Moog"), warrants all new Infinity products of its manufacture (hereafter "Products") to be free from defects in material and workmanship, and will replace or repair, F.O.B., at its factory in Salt Lake City, Utah, or other location designated by Moog, any Products returned to it within twenty-four (24) months of original purchase by the buyer. Such repair or replacement shall be free of charge.

Moog warrants to the original buyer, that the Moog-repaired portion of the Products, or replaced Products will be free from defects in material and workmanship, and Moog will replace or repair defective Products F.O.B., at its factory in Salt Lake City, Utah, or other location designated by Moog. Such Moog-performed re- pair or replacement shall carry a warranty of ninety (90) days from the date of repair or replacement or the balance of the new Product warranty as described above, whichever is greater.

THE FOREGOING WARRANTIES AND REMEDIES ARE SOLE AND EXCLUSIVE AND ARE IN LIEU OF ANY REMEDIES OR WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHER WARRANTY OF QUALITY, WHETHER EXPRESS, STATUTORY OR IMPLIED. IN NO EVENT SHALL MOOG BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENCIAL DAMAGES.

This Warranty may not be modified, amended or otherwise changed, except by a written document properly executed by a duly authorized representative of Moog.

In addition, this Warranty does not apply to Products that have been altered or repaired by personnel other than those employed by Moog; nor does it apply to Products that have been subjected to misuse, abuse, neglect, improper operation of warranted Products contrary to applicable operation manuals, accident, improper maintenance or storage, Acts of God, vandalism, sabotage or fire.

MOOG PUMPS ARE DESIGNED TO BE USED ONLY WITH MOOG BRANDED ADMINISTRATION SETS. USE OF ADMINISTRATION SETS THAT HAVE NOT BEEN DESIGNED AND MAUFACTURED BY MOOG ARE CONSIDERED COUNTERFEIT PRODUCT AND WILL VOID ANY AND ALL WARRANTIES ON MOOG PUMP EQUIPMENT AND ADMINISTRATION SETS. THE USE OF COUNTERFEIT PRODUCT POSES ACCURACY AND SAFETY RISKS TO PATIENTS. CUSTOMER AGREES THAT THEY WILL NOT PURCHASE OR USE COUNTERFEIT PRODUCT WITH MOOG DEVICES.

This Warranty is void if the Product is opened or tampered with in any way without prior authorization from Moog.

This Warranty does not cover normal wear and tear and maintenance items, and specifically excludes batteries, administration sets, extension sets or any other accessory items used with the Products.

Other than Moog's standard warranty which has been modified as stated herein, all other terms of Moog's standard terms and conditions of sale apply, as the only terms governing this transaction.

LIST OF FIGURES

WHO TO CALL

Additional Information:

YOUR HEALTHCARE PROVIDER:

_____

_____

_____

_____

_____

YOUR PHYSICIAN:

_____

_____

_____

_____

_____

**Contact Moog Medical for additional information
on using or maintaining the device.**

Moog Medical
4314 ZEVEX Park Lane
Salt Lake City, Utah 84123 USA
Clinical and Customer Support: (800) 970-2337
www.infinityfeedingpump.com

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Take an interactive tour of the Infinity Pump at **infinityfeedingpump.com**. Or, call us at **800.970.2337** to schedule a demonstration or request additional information.

Speak live with a Moog Clinical Representative for pump questions and troubleshooting guidance 24 hours per day, 7 days per week: Clinical & Customer Support **800.970.2337**

Tel: **801.264.1001**
Toll Free: **800.970.2337**
Fax: **801.264.1051**

4314 Zevex Park Lane
Salt Lake City, UT 84123 USA

infinityfeedingpump.com
medcustomerservice@moog.com

EC REP   UAB Vilteb meda,
Mok inink 6, LT-08412
Vilnius Lithuania

carbon neutral
All Moog Administration and Delivery Sets are manufactured at a carbon neutral facility.

CE 0123

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Enhancing Healthcare.
Enriching Lives.™