WARNINGS

To ensure proper operation of the MedSystem III® infusion pump, the user must be familiar with related features, setup, programming, and IV sets and accessories prior to use.

This guide is not intended to be comprehensive instructions for the setup and operation of the MedSystem III® infusion pump. For complete instructions along with Warnings and Cautions, refer to the MedSystem III® infusion pump Directions for Use.
To Prime the Administration Set
1. Use only MedSystem III® administration sets.
2. Close roller clamp. Spike container. Fill drip chamber to approximately half full.
3. Confirm that vent is in the correct position.
4. With cassette inverted, prime set slowly. Use a syringe to aspirate air from SmartSite® needle-free valve. Massage pressure dome to expel all air.

To Insert the Cassette
Note: Pump must be turned ON prior to cassette loading. Slide clamp must be in the fully closed (out) position.
1. With tubing downward, insert cassette upward and in at a 45° angle.
2. Press the slide clamp in until flush with the cassette.
3. Gently pull tubing collar down and press it into the recess below the cassette.
4. Three 'beeps' indicate proper placement.

To Set Up a Primary Infusion
1. Select channel by pressing "A", "B" or "C".
2. Press SELECT to highlight the value you wish to program (Rate or Volume Remaining or to clear the Volume Infused.)
3. Use ↑, ↓, Fast ↑, or Fast ↓ to reach the desired value, then press ENTER.
   The highlight bar will automatically move to the next field.
Note: The direction of the 'Fast' key can be changed by pressing the corresponding ↑ or ↓ arrow.
4. To recall a setting before Enter is pressed, press MORE OPTIONS then RECALL.
5. Press START/STOP to begin or stop infusion.
6. VERIFY:
   - flow of solution from the primary solution container
   - settings on the standard display are correct
   - Infusion Status "Infusing" on the selected channel.

To Change Rate or VTBI
1. Select channel by pressing "A", "B" or "C".
2. Change the rate using ↑, ↓, Fast ↑, or Fast ↓ to reach the desired value, then press ENTER.
3. Or press SELECT to move to the Volume Remaining field. Change the VR using ↑, ↓, Fast ↑, or Fast ↓ to reach the desired value, then press ENTER.
Note: Infusion does not stop during changes. New rate is in effect immediately upon pressing the Enter key.

To Clear the Volume Infused
1. Select Channel by pressing "A", "B", or "C".
2. Press SELECT to move to the Volume Infused (VI) field.
3. Press CLEAR to reset to zero. Press ENTER.
Note: Information does not clear from the Total Volume page.
OR
1. Press MORE OPTIONS, then TOTVOL. Total Volume page appears.
2. Press CLRTOT. All values for each channel will clear and flash. Press ENTER.
Note: Information will be cleared from all channel pages, A, B, and C.

To Stop a Channel
Temporarily - "Stopped" Status
1. Select channel by pressing "A", "B" or "C".
2. Press START/STOP.
3. Verify Infusion status "Stopped" on the selected channel. If cassette remains in the channel, a 'CHANNEL NOT IN USE' advisory will sound in two minutes.
Note: In the OR Device Modes, there is no "Stopped" option, and "Standby" mode is reached directly when "STOP/START" is pressed.
Indefinitely - "Standby" Status
1. Select channel by pressing ‘A, B or C’.
2. Press START/STOP. Press STANDARD DISPLAY.
3. Press STNDBY.
4. Verify infusion status ‘Standby’ on the selected channel. No advisory will sound.

To Clear the Standard Display for channel(s) Not in Use
1. Remove cassette from channel.
2. Ensure the highlight bar is on an active channel. (To move the highlight bar, select any infusing channel by pressing A, B, or C as appropriate.) The information for the channel not in use will disappear from the STANDARD DISPLAY within 2 minutes.

To Start an Infusion Following Infusion Complete (KVO Status)
1. Select channel by pressing ‘A, B or C’.
2. Press the CHANNEL key again, press REPEAT to restore previous settings, then press ENTER, OR set new values then press ENTER.
3. Press START/STOP.

To Set Up Secondary (Piggyback) Infusion
1. Use a primary set with a check valve.
2. Hang the primary container at least 8 inches below the secondary container.
3. Attach the secondary set to the upper ‘Y’ site of the primary set.

WARNING:
Setting a secondary rate over 275 ml/hr may result in concurrent flow with the primary container.

To Program a Secondary Infusion:
1. Select channel by pressing ‘A, B or C’.
2. Press MORE OPTIONS, then 2° SEC. The secondary programming page will appear. Note that the secondary page is reverse highlighted.
3. Press SELECT to highlight the value you wish to program (Rate or Volume Remaining or to clear the Volume Infused.)
4. Use ↑, ↓, Fast ↑, or Fast ↓ to reach the desired value, then press ENTER. The highlight bar will automatically move to the next field. (Note: the direction of the “Fast” key can be changed by pressing the corresponding ↑ or ↓ arrow.)
5. To recall a setting before ‘Enter’ is pressed, press MORE OPTIONS then RECALL.
6. Open secondary roller clamp then press START/STOP while on the secondary page to begin secondary infusion.
7. VERIFY:
   · flow of solution from the secondary container
   · settings on the standard display are correct
   · Infusion Status ‘Infusing’ on the selected channel
8. When the VR on the secondary infusion reaches zero, the primary rate automatically resumes.

WARNING:
Failure to enter a correct Secondary Volume Remaining may result in the secondary solution being administered at an incorrect rate. The fluid in the secondary set stops flowing when it reaches the level of the fluid in the primary container.

To Interrupt a Secondary and Return to Primary Infusion
1. Select channel by pressing ‘A, B or C’.
2. Press MORE OPTIONS, then 1° PRI to access Primary programming page.
3. Close the secondary roller clamp and press START/STOP. The primary infusion will begin.
To Turn Pump Off
1. Hold the ON/OFF key in for one full second.

ADVANCED FEATURES
To Program a Dose Rate Calculation
Note: Infusion must be stopped before accessing the Dose Rate Calculation feature to enter a new program or to change Drug Name, Patient Weight or Drug Concentration values.
1. Select channel by pressing ‘A, B or C’.
2. Press MORE OPTIONS, then press CALCON. Drug? will be highlighted.
3. Press SELECT to program values for Drug? (to customize any dosing parameters)
OR
4. Choose a specific drug name by pressing ↑ or ↓, and scrolling through the list.
5. Press ENTER to select the desired drug name.
6. Press SELECT to highlight the value you wish to program (Weight, Concentration, Dose, Rate, Volume Remaining or to clear the Volume Infused and Dose Infused.)
7. Use ↑, ↓, Fast ↑, or Fast ↓ to reach the desired value, then press ENTER. The highlight bar will automatically move to the next field.
Note: The direction of the “Fast” key can be changed by pressing the corresponding ↑ or ↓ arrow.
8. To recall a setting before Enter is pressed, press MORE OPTIONS then RECALL.
Note: If Dose is entered, Rate will automatically be calculated. If Rate is entered, Dose will automatically be calculated.
9. Press START/STOP to begin or stop infusion.
10. VERIFY:
    · flow of solution from the primary solution container
    · settings on the standard display are correct
    · Infusion Status “Infusing” on the selected channel.

To View Dose Rate Program
Parameters
1. Select channel by pressing ‘A, B or C’. Dose Rate Calculation programming page will display.
To Change Dose or Rate (Titrate During Infusion)
1. Select Channel by pressing A, B, or C. Dose will be highlighted.
2. Use ↑, ↓, Fast ↑, or Fast ↓ to reach the desired dose value then press ENTER.
OR
1. Press SELECT to highlight Rate. Use ↑, ↓, Fast ↑, or Fast ↓ to reach the desired rate value then press ENTER.

To Change Weight or Concentration
1. Select Channel by pressing A, B, or C.
2. Press START/STOP.
3. Press SELECT to highlight the value you wish to change. (Weight or Concentration)
4. Use ↑, ↓, Fast ↑, or Fast ↓ to reach the desired value then press ENTER.
5. Press START/STOP to restart the infusion.

To Exit Dose Rate Calculator
1. Select Channel by pressing A, B, or C.
2. Press START/STOP.
3. Press MORE OPTIONS, then CALCOFF.
ALARM RESPONSE

Advisory
Two beeps will accompany advisory description message on STANDARD DISPLAY.
Red LED on the affected channel will flash.
1. Press QUIET to silence.
2. Press the alarming channel, A, B, or C, to access alarm information and follow the instructions.

Alarm
Four quick beeps will accompany an alarm description message on the STANDARD DISPLAY.
Red LED on the affected channel will flash.
1. Press QUIET to silence.
2. Press the alarming channel, A, B, or C, to access alarm information and follow the instructions.

"WatchDog"
Continuous audible tone sounds to alert the user that safety checks built into the software have detected a situation which may be transient in nature. (For example a power surge may trigger WatchDog.)
Screen will be blank. All Green and Red LEDs will flash.
Press and hold the ON/OFF key in for one full second to turn instrument off.
All current settings will be retained in memory.
Turn pump back on and restart infusion(s) by selecting the channel(s) and then pressing START/STOP.

Fault
European "police siren" alarm will sound to alert the user that a fault condition exists. A fault may be a transient, correctable situation. See examples under "Troubleshooting".
Fault description message appears on the STANDARD DISPLAY.
Red LED on the affected channel will flash.
1. Press QUIET to silence.
2. Press the alarming channel, A, B, or C, to access alarm information and follow the instructions.
3. Clear fault by pressing RETRY if available. The option exists to disable the channel by pressing SERVICE. The remaining two channels would still be available for use, but the instrument will eventually need to be serviced. **DO NOT PRESS SERVICE UNLESS YOU HAVE EXHAUSTED OTHER MEANS OF CLEARING THE FAULT AND YOU WISH TO DISABLE THE CHANNEL.**
TROUBLESHOOTING

Pumping Latch Closed
Fault message indicates that the pumping latch jaw, next to the air sensor, is in the closed position. The latch MUST be opened so that it is able to accept a cassette. No RETRY option exists because resolution of this condition requires manually opening the latch jaw.

1. Press the alarming channel, A, B, or C, to access alarm information and follow the instructions.
2. Do not press SERVICE unless you wish to disable the channel.
3. Using your finger, push down the pumping latch jaw until it snaps open.
4. If the latch will not open or the lower jaw is visibly broken, the channel may be disabled by pressing SERVICE. The remaining two channels will be unaffected and may still be used. Contact your service personnel to repair the pump.

CAUTION: Never use a blunt instrument to open a closed pumping latch.

CHECK FLUID SIDE
Alarm indicates that flow is restricted upstream (pump to container).

1. Press the alarming channel, A, B, or C, to access alarm information and follow the instructions.
2. Check for any upstream obstruction to flow such as closed roller clamp, kinked tubing, empty syringe or burette, or closed air vent.
3. Correct the obstruction if found.
4. If none found, press CONFIRM.
5. Press START/STOP to restart the infusion.

AIR-IN-LINE
Alarm indicates that air has been detected by the Air Sensor.

1. Press the alarming channel, A, B, or C, to access alarm information and follow the instructions.
2. If clinically appropriate, press CLR AIR to clear small amount of air from the tubing (0.2 ml/pulse, maximum 5 pulses per alarm; TOTAL = 1 ml).
3. 3 beeps indicates that the air has passed the Air Sensor.
4. Press START/STOP to restart the infusion.