Directions For Use

IMEDI® GEMINI® FC-2TX®
VOLUMETRIC INFUSION PUMP/CONTROLLER

Improving and Extending the Quality of Human Life
WARNING AND CAUTION NOTICES:

CAUTION: FEDERAL (U.S.A.) LAW RESTRICTS THIS DEVICE TO SALE BY OR ON THE ORDER OF A PHYSICIAN.

USE ONLY HOSPITAL GRADE PLUG TO INSURE PROPER GROUNDING. GROUNDING RELIABILITY CAN ONLY BE ACHIEVED BY CONNECTION TO A RECEPTACLE MARKED "HOSPITAL GRADE".

DANGER: EXPLOSION HAZARD, DO NOT USE IN THE PRESENCE OF FLAMMABLE ANESTHETICS.

WARNING

TO PREVENT UNRESTRICTED FLOW, CLOSE OR ADJUST ROLLER CLAMP WHEN FLO-STOP® MECHANISM IS OPEN. CLOSE ROLLER CLAMP BEFORE OPENING DOOR.

CAUTION: ELECTRIC SHOCK HAZARD, DO NOT OPEN INSTRUMENT CASE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL. WHEN CASE IS OPENED, AN ELECTRICAL SHOCK HAZARD EXISTS WHICH CAN RESULT IN SERIOUS INJURY TO PERSONS AND INSTRUMENT COMPONENT DAMAGE.

CAUTION: REFER TO MAINTENANCE MANUAL.

WARNING: REPLACE FUSE AS MARKED.

WARNING

THE PC-2TX IS A POSITIVE PRESSURE DELIVERY SYSTEM CAPABLE OF DEVELOPING POSITIVE FLUID PRESSURES TO OVERCOME WIDELY VARYING RESISTANCES TO FLOW. IT IS NEITHER DESIGNED NOR INTENDED TO DETECT INFILTRATIONS AND WILL NOT ALARM UNDER INFILTRATION CONDITIONS.

CAUTION: THE SELECTION, TESTING, AND USE OF HOST COMPUTER HARDWARE AND SOFTWARE, IN CONJUNCTION WITH THE PC-2TX IS STRICTLY THE RESPONSIBILITY OF THE PURCHASER.
EPIDURAL ADMINISTRATION: The pump can be used for epidural administration of anesthetic and analgesic drugs. This application is only appropriate when using anesthetics and analgesics labeled for continuous epidural administration and catheters intended specifically for epidural use. Use only Gemini series sets, without a "Y" connector or injection port, for epidural infusions. The pump's secondary features must not be used when the pump is being used for epidural administration of anesthetic and analgesic drugs.

Epidural administration of anesthetic drugs - Use in-dwelling catheters specifically indicated for short-term (96 hours or less) anesthetic epidural drug delivery.

Epidural administration of analgesic drugs - Use in-dwelling catheters specifically indicated for either short-term or long-term analgesic epidural drug delivery.

WARNING

* EPIDURAL ADMINISTRATION OF DRUGS OTHER THAN THOSE INDICATED FOR EPIDURAL USE COULD RESULT IN SERIOUS INJURY TO THE PATIENT.

IT IS STRONGLY RECOMMENDED THAT THE INFUSION PUMP CONTAINER AND ADMINISTRATION SET USED FOR EPIDURAL DRUG DELIVERY BE CLEARLY DIFFERENTIATED FROM THOSE USED FOR OTHER TYPES OF ADMINISTRATION.

WARNING

THIS PUMP IS DESIGNED TO STOP FLUID FLOW UNDER ALARM CONDITIONS. PERIODIC PATIENT MONITORING MUST BE PERFORMED TO ENSURE THE INFUSION IS PROCEEDING AS EXPECTED.

WARNING

IF THE PUMP IS DROPPED OR SEVERELY JARRED, AT ANY TIME, THE INSTRUMENT SHOULD BE TAKEN OUT OF SERVICE AND INSPECTED BY QUALIFIED SERVICE PERSONNEL PRIOR TO USE.

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INTRODUCTION

The IMED® GEMINI PC-2TX® is a two channel volumetric infusion pump and controller which provides accurate and automatic infusion of intravascular drugs, fluids, whole blood and packed red blood cells. The two channels are independent, and the PC-2TX may be operated as any combination of pump and/or controller.

Secondary (or piggyback) fluid may also be automatically infused at delivery rates and volumes independent of the primary infusion parameters, with automatic changeover to the primary infusion parameters when the secondary infusion is complete and when using a check valve administration set.

The PC-2TX can be set to run in three different operating conditions:

- **INDEPENDENT Operation** - the PC-2TX operates as a stand-alone instrument, with no computer interface.
- **MONITOR Operation** - the PC-2TX controls the infusion and a host computer monitors instrument operation.
- **COMPUTER CONTROL Operation** - the PC-2TX is under the control of a host computer, which sets the infusion parameters and monitors PC-2TX operation.

To enhance safety and ease of operation, the PC-2TX provides operator prompts and advisories, a full range of alarms, and malfunction visual and audio alerts. Also provided is a tamper-resistant option which enables the user to lock out the front panel once infusion parameters have been entered and the infusion started.

The GEMINI PC-2TX utilizes peristaltic action in both the pump, controller and selectable occlusion pressure limit operating modes. When the PC-2TX is operated in the controller mode, it senses the pressure created by the height of the fluid container and uses that pressure as the occlusion pressure limit. In the pump mode, the occlusion pressure limit is preset at approximately 10 psi for rates above 30 mL/hr. For rates 30 mL/hr and below, the occlusion pressure is rate-dependent to ensure rapid response to occlusions. The selectable pressure limit mode allows the user to set the occlusion pressure limit for each channel in increments of 25mm Hg up to the maximum occlusion pressure.

The infusion rate is selectable from 0.1 mL/hr to 999 mL/hr, and the volume to be infused (VTBI) from 0.1 mL to 9999 mL. The Rate Titration feature allows the selected channel's rate to be increased or decreased 1 mL/hr or 0.1 mL/hr (if a fractional rate is displayed) with each single control press. Greater rate changes can be achieved by pressing and holding the Δ or ▼ controls until the desired rate is attained. Rates between 0.1 and 99.9 mL/hr may be selected in tenths of a milliliter increments. VTBI's between 0.1 and 999.9 mL may be selected in tenths of a milliliter increments if the rate is also in tenths. Using the System Configuration mode, the Biomedical Engineering Department can configure the maximum allowable flow rate.
If not disabled in the System Configuration, the Gemini PC-2TX allows the following advanced programming options on each channel:

**Volume/Time** allows the user to program a volume to be infused (VTBI) and a duration (infusion time). The flow rate is calculated based upon the volume and time inputs.

**Delayed Start** allows the user to pre-program a primary or primary/secondary infusion to begin up to 23 hours 59 minutes later. The infusion starting time is based upon a real time clock incorporated within the instrument. The user may also specify a call-back audio alert upon completion of the delayed start infusion.

**Multidosing** allows the user to pre-program 1-24 infusions with the same rate and volume to be infused (VTBI) over a 1-24 hour period. Between doses, the channel is in a standby (not pumping) mode. In addition, the user may choose to delay the start of the first dose by up to 8 hours.

**Drug Calculations** allows the user to enter either:

- the **desired drug dose** and the PC-2TX calculates the correct flow rate to achieve the desired drug dose, or
- the **desired flow rate** and the PC-2TX calculates the corresponding drug dose

The PC-2TX utilizes the following parameters entered by the user during the drug calculations setup procedure to calculate the rate and dose:

- Drug amount - amount of drug in the IV container (gram, mg, mcg, or units)
- Diluent volume - Volume of fluid used as the drug diluent (ml)
- Patient weight - Weight of the patient (kg), this is an optional parameter and is not needed unless the drug dose is normalized for patient weight
- Time units - the time base for all calculations (min or hour).

The above parameters are used to calculate drug dose and flow rate parameters as follows:

- Drug concentration = Drug amount / Diluent volume (ml)
- Flow rate = Drug dose / Drug concentration (normalized for patient weight if specified by entering a patient weight)
- Drug dose = Flow rate x Drug concentration (normalized for patient weight if specified by entering a patient weight).

**Occlusion** allows the user to choose between pump (automatic pressure setting), controller and selectable (user determined) pressure settings in the System Configuration - PCS Mode.
Dynamic Pressure Display allows the user to observe in-line operating pressure sensed by the instrument.

Pressure History allows the user to display previous 2 hours of average pressure measurements displayed in 2 minute intervals.

The PC-2TX uses a wide variety of ALARIS Medical GEMINI® disposable administration sets. Primary sets are used for separate, independent primary infusions and for stand-alone gravity administration. Secondary infusions are possible using GEMINI check valve sets and appropriate Secondary sets. GEMINI disposable sets utilize a unique clamping device, the Flo-Stop® mechanism, to prevent inadvertent free flow when a set is removed from the PC-2TX.

The PC-2TX has been designed to interface with optional accessory equipment, including an empty container detector (ECD) and a Nurse Call system. When an ECD is attached to the drip chamber of the primary administration set, the PC-2TX can infuse the entire contents of the fluid container. The Nurse Call feature, when connected, activates an externally powered nurse call system whenever the PC-2TX initiates any alarm, malfunction, the "PRESS START" prompt, "INFUSION COMPLETE - KVO", "EMPTY CONTAINER - KVO" or "LOW BATTERY" advisories.

NOTES

Although the PC-2TX is built and tested to exacting specifications, it is not intended to replace the supervision of IV infusions by medical personnel. The user should become thoroughly familiar with features and operation of the PC-2TX and exercise vigilance in its utilization.

ALARIS Medical Systems™ has available a PC-2TX Maintenance Manual which includes circuit diagrams, component parts lists and descriptions, calibration and test procedures, and other technical information to assist qualified service personnel in repair and maintenance of the instrument's repairable components. Maintenance procedures are intended to be performed only by qualified personnel.
INSTALLATION PROCEDURES

The PC-2TX has been thoroughly inspected before shipment from the factory to insure its mechanical and electrical integrity. However, handling in transit may cause visible or hidden damage. Therefore, prior to initial use, the PC-2TX should be inspected at the user's facility.

Remove the unit from the shipping container and inspect it carefully for damage. Check that the doors operate freely. Check to ensure the urethane seals covering the pumping mechanisms are not cut or torn. Check the pole clamp for freedom of operation. Check the power cord for nicks and bent prongs on the connector. Check the AC power entry module for contamination. Check for any loose parts.

NOTE

If the instrument shows evidence of damage in transit, notify carrier's agent immediately. Do not return damaged equipment to the factory before the carrier's agent has authorized repairs.

Contact ALARIS Medical Systems for authorization to return equipment for repair, whether damage or malfunction is the responsibility of the carrier, or of ALARIS Medical Systems.

Performance Check

Refer to the PC-2TX Maintenance Manual.

Battery Charge

The PC-2TX is shipped with the batteries in a charged condition. However, since a considerable time period could elapse between shipment from the factory and initial use of the unit, perform a pre-operational battery charge. Connect the power cord to a 110 Volt receptacle. Allow the battery to charge for 24 hours. Whenever possible, leave the power cord connected to an external AC power source while operating.

New, fully charged batteries will provide approximately 8 hours of operation with one channel infusing at 125 mL/hr before a "BATTERY DISCHARGED" message displays. New batteries will recharge to 90% of capacity in 4 hours with the instrument operating or off and will return to a fully charged condition within 10 hours.

NOTE

Failure to fully recharge the battery between consecutive battery operations will reduce battery life.

RS-232 Connection/Computer Interface

Refer to the PC-2TX Maintenance Manual and to the ALARIS Medical Systems C2 Communications Programmer's Guide.
SYSTEM CONFIGURATION

The current PC-2TX System Configuration may be viewed by pressing [ ] to bring up the System Options Menu, then pressing [ ] to access the System Configuration listing. Use the [ ] control to exit the System Configuration and System Options modes. The Biomedical Engineering Department should select or enable/disable specific system features based on hospital protocol and patient care requirements.

SYSTEM CONFIGURATION OPTIONS


NOTE

Prior to use, the user must determine whether the instrument configuration is appropriate for the prescribed infusion therapy.

For additional information on the System Configuration mode, direct inquiries to the Biomedical Engineering Department, or other personnel trained to set up specialized instrument configurations in the System Configuration mode.
DESCRIPTION OF CONTROLS AND INDICATORS

Channel Information (Alarm/Status) Display - Channel A or B displays various advisories, alarms, and malfunctions. (Refer to CHANNEL, CENTRAL INFORMATION DISPLAY AND ALARM RESPONSE PROCEDURES section of this manual for specific response procedures.)

RATE display - Channel A or B - displays primary and secondary rate infusion parameters.

Channel Select A or B indicators - when illuminated, indicate that the corresponding channel is selected for infusion parameter entry and infusion setup.

Standby indicator: illuminates when the channel is programmed for a future start time.

Alarm Indicator: illuminates when the channel is in an alarm or infusion complete condition.

Infusing indicator - flashes when the channel is actively infusing.

Central Information Display - displays VTBI (volume-to-be-infused), dynamic pressure, current time of day and other operating parameters during operation of the instrument. Utilized during set up procedures for data entry, editing, confirmation and display of prompts, advisories and alarm conditions. During battery operation, display backlight will extinguish ≈2 minutes after the last key press and relight upon next key press.

controls - when pressed once, selects the corresponding channel for infusion parameter entry and infusion setup.

when pressed during an infusion, the infusion for the selected channel is stopped. (After ≈2 minutes, the "PRESS START" visual and audio prompt begins unless operating in Anesthesia mode.)

when pressed, stops the infusion for the selected channel, deselects the selected channel, and if only that channel had been infusing, powers off the PC-2TX. Repeat for all other running channels to power off the PC-2TX. When pressed during a software-detected system malfunction, powers off the PC-2TX.

when pressed, allows the rate infusion parameter on the selected channel to be changed using the appropriate data entry controls.

when pressed, allows the VolumetobeInfused parameter on the selected channel to be changed using the appropriate data entry controls.

data entry controls - when pressed, allows sequential entry of Rate, VTBI and other numerical operating parameters.

when pressed, inserts a decimal point in numeric data.
DESCRIPTION OF CONTROLS AND INDICATORS (continued)

- when pressed, allows entry of Start Time for delayed start and multidose infusions, as well as Duration when volume/time infusion option is enabled.
- when pressed, clears the currently selected infusion parameter setting to '0'. When pressed following press of the Volume Infused control, clears the total primary and secondary volume infused displays for the selected channel or both channels.
- when pressed during an alarm, silences the audio for ~2 minutes.
- when pressed, will increase or decrease the rate parameter with each keypress or will scroll up or down when pressed and held. Also used to select options in infusion setup sequences and to adjust contrast on the central information display through the options menu.
- when pressed, applies electrical power to PC-2TX. If pressed during a hardware malfunction, silences audio alarm and turns off electrical power to all circuits.
- when pressed, starts the infusion on the selected channel.
- when pressed following data entry in the central information display, confirms the entry and allows entry of data for the next step of the programming sequence.
- indicator - when flashing, indicates the PC-2TX is operating on battery power.
- indicator - when illuminated, indicates the PC-2TX is connected to an external power source.
- when pressed, will cause primary, secondary and total volume infused and secondary volume infused to display for both channels.
- when pressed, allows the entry of secondary infusion parameters on the selected channel. If pressed during a secondary infusion, allows the user to toggle between viewing primary and secondary parameters.
- when pressed, allows the entry of a medication dose in the Drug Calculation mode.
- when pressed, allows access to the available system or channel options and editing functions.
- when pressed, discontinues the current programming sequence and returns the central information display to the previous display screen.

AUDIO/TAMPER-RESISTANT CONTROL (on rear panel) - when rotated, varies the audio volume; when pressed and held for 3 seconds with the tamper-resistant feature enabled, will lock out all of the keypad controls except VOLUME INFUSED, SEC/PIGGYBACK and SILENCE. A repeat 3 second press will unlock the keypad controls. Tamper-Resistant mode must be enabled in Systems Configuration.
ABBREVIATED SETUP AND OPERATING PROCEDURES

Introduction
The abbreviated procedures necessary to set up, start, and operate the PC-2TX are described in the following sections.

These procedures are provided for use by personnel already trained and familiar with the setup and operation of the PC-2TX. Refer to Setup and Operating procedures for detailed instructions.

To Set Up a Primary Infusion on Any Channel
1. Connect PC-2TX to external AC power source.
2. Press [ ].
   - If following screen displays, remove instrument from service.

   ![Warning: Malfunction]

   CHANNEL MALFUNCTION
   REMOVE IN SIT IMMEDIATELY
   A MALFUNCTION HAS BEEN DETECTED ON THIS CHANNEL.
   THIS INFUSION HAS BEEN STOPPED.
   > Press [ ].

   NOTE
   During initialization, ensure the following occur:
   • All LEDs illuminate.
   • Rate displays show "000.0" then extinguish except channel A which shows "--.--".
   • Message displays illuminate then extinguish.
   • Central display screen displays IMED logo. (If display appears abnormal, remove pump from service.)

3. Remove set from package and close roller clamp.
4. Insert the set spike into the prepared fluid container and hang the container a minimum of 24 inches above the PC-2TX.
5. Fill the drip chamber approximately 2/3 full.
6. Open roller clamp and prime set to remove all air.
7. Close roller clamp.
8. Open door and install the administration set upper fitment first, then the Flo-Stop mechanism.
10. Close door and open roller clamp.
11. Select channel, press [ ] or [ ].
12. Press [ ] to change rate, use numeric data entry or [ ] controls.
13. Press [ ] to change VTBI, use numeric data entry controls.
14. Attach set to patient's vascular access device.
15. Press [ ].

To Set Up a Primary Infusion with Volume/Time Infusion Option Enabled
1. Connect PC-2TX to external AC power source.
2. Press [ ].
3. Prime and load tubing as previously described.
4. Select channel, press [ ] or [ ].
5. Press [ ] to change VTBI, use numeric data entry controls.
6. Press [ ] to change duration, use numeric data entry controls.
7. Attach set to patient's vascular access device.
8. Press [ ].
ABBREVIATED SETUP AND OPERATING PROCEDURES (continued)

To Change Display Contrast (SYSTEM OPTION)
1. Press \[\text{A} \text{B} \text{C} \text{D}\] .
2. Select Option #1, display contrast.
3. Use \[\text{A} \text{B} \text{C} \text{D}\] controls to adjust the display for optimum viewing.
4. Press \[\text{A} \text{B} \text{C} \text{D}\] to confirm contrast adjustment.
5. Press \[\text{A} \text{B} \text{C} \text{D}\] to return to normal operation.

To Pause an Infusion
1. Select channel, press \[\text{A} \text{B} \text{C} \text{D}\] .
2. Press \[\text{A} \text{B} \text{C} \text{D}\] .
3. Press \[\text{A} \text{B} \text{C} \text{D}\] to resume infusion.

To Stop a Primary Infusion
1. Select channel, press \[\text{A} \text{B} \text{C} \text{D}\] .
2. Press \[\text{A} \text{B} \text{C} \text{D}\] .

To Change Rate or VTBI During Primary Infusion
1. Select channel, press \[\text{A} \text{B} \text{C} \text{D}\] .
2. Press \[\text{A} \text{B} \text{C} \text{D}\] to change rate.
3. Use numeric data entry or \[\text{A} \text{B} \text{C} \text{D}\] controls to change rate.
4. Press \[\text{A} \text{B} \text{C} \text{D}\] to change VTBI.
5. Use numeric data entry controls to change VTBI.
6. Press \[\text{A} \text{B} \text{C} \text{D}\] .

To Titrate Rate
1. Select channel, press \[\text{A} \text{B} \text{C} \text{D}\] .
2. Press \[\text{A} \text{B} \text{C} \text{D}\] or \[\text{A} \text{B} \text{C} \text{D}\] to change the rate parameter in 1 or 0.1 mL/hr increments or
3. Press \[\text{A} \text{B} \text{C} \text{D}\] .

To Change the Pressure Limit (PCS Mode Control Unlocked)
1. Select channel, press \[\text{A} \text{B} \text{C} \text{D}\] .
2. Press \[\text{A} \text{B} \text{C} \text{D}\] control.
3. Select Option #4, Pressure Limit.
4. Select Pump, Controller or Selectable mode by using the \[\text{A} \text{B} \text{C} \text{D}\] or \[\text{A} \text{B} \text{C} \text{D}\] controls. (If Selectable is chosen, use the \[\text{A} \text{B} \text{C} \text{D}\] or \[\text{A} \text{B} \text{C} \text{D}\] controls to set occlusion pressure.)
5. Press \[\text{A} \text{B} \text{C} \text{D}\] .
6. Press \[\text{A} \text{B} \text{C} \text{D}\] to exit the channel options screen.

To View Pressure History for Selected Channel
1. Select channel, press \[\text{A} \text{B} \text{C} \text{D}\] .
2. Press \[\text{A} \text{B} \text{C} \text{D}\] control.
3. Select Option #3, Pressure History.
4. Press \[\text{A} \text{B} \text{C} \text{D}\] to exit.
ABBREVIATED SETUP AND OPERATING PROCEDURES (continued)

To Restart an Infusion Following an "INFUSION COMPLETE-KVO" Advisory
1. Select channel, press A or B.
2. Press \( \) to change VTBI.
3. Use numeric data entry controls to change VTBI.
4. Replace fluid container.
5. Refill drip chamber, if necessary.
6. Press \( \) control to change rate, if necessary.
7. Use numeric data entry or \( \) controls to change rate.
8. Press \( \).

To View Primary, Secondary and Total Volume Infused Values for All Channels Simultaneously
1. Press \( \).

To Clear Primary, Secondary and Total Volume Infused Values for All Channels Simultaneously
1. Press \( \).
2. Press \( \).
3. Use \( \) controls to select YES.
4. Press \( \).

To View Primary, Secondary and Total Volume Infused on Selected Channel
1. Select channel, press A or B.
2. Press \( \).

To Clear Primary, Secondary and Total Volume Infused on Selected Channel
1. Select channel, press A or B.
2. Press \( \).
3. Press \( \).

To Set Up Secondary (Piggyback) Infusion With Dual Rates
1. Set up Primary infusion (using check valve set) as previously described.
2. Remove Secondary set from package and close roller clamp.
3. Insert set spikes into prepared fluid container and hang the Secondary container a minimum of 24 inches above the PC-2TX.
4. Fill drip chamber approximately 2/3 full.
5. Attach Secondary set needle, if needed.
7. Attach the Secondary set to the upper injection site on Primary set.
8. Lower the Primary container using the hanger provided in the Secondary set package.
9. Select channel, press A or B.
10. Press \( \).
11. The rate field will automatically be selected.
12. Use numeric data entry or \( \) controls to change Secondary rate.
13. Press \( \).
14. Use numeric data entry controls to change Secondary VTBI.
16. Press \( \).
ABBREVIATED SETUP AND OPERATING PROCEDURES (continued)

To Set Up Secondary (Piggyback) Infusion With Dual Rates and the Volume/Time Infusion Option Enabled
1. Set up Primary infusion (using check valve set) as previously described.
2. Set up the Secondary set as previously described.
3. Select channel, press \( \text{A} \) or \( \text{B} \).
4. Press \( \text{START} \).
5. Press \( \text{FILL} \).
6. Use numeric data entry controls to change Secondary VTBI.
7. Press \( \text{START} \).
8. Use numeric data entry controls to change Secondary duration.
10. Press \( \text{START} \).

To Change Primary Infusion Parameters During a Secondary Infusion
1. Select channel, press \( \text{A} \) or \( \text{B} \).
2. Press \( \text{START} \).
3. Press \( \text{FILL} \) to change Primary rate.
4. Use numeric data entry or \( \text{1} \) \( \text{1} \) controls to change Primary rate.
5. Press \( \text{FILL} \) to change Primary VTBI.
6. Use numeric data entry controls to change Primary VTBI.
7. Press \( \text{FILL} \).
8. Press \( \text{FILL} \).

To Stop a Secondary Infusion and Return to Primary Infusion
1. Select channel, press \( \text{A} \) or \( \text{B} \).
2. Press \( \text{START} \).
4. Press \( \text{STOP} \).
5. Select the "Yes" option.
6. Press \( \text{START} \).

To Change Current Time of Day (SYSTEM OPTION)
1. Press \( \text{FILL} \) control.
2. Select Option #2, Time-of-day.
3. Enter the correct time of day.
4. If in AM/PM time, select either AM or PM by using the \( \text{1} \) or \( \text{2} \) controls.
5. Press \( \text{FILL} \).

To Set Up a Delayed Start Infusion
1. Prime and load the primary administration set as previously described.
2. Select channel, press \( \text{A} \) or \( \text{B} \).
3. Press \( \text{START} \) control.
4. Select Option #1, Delayed Start.
5. Confirm Current Time is correct.
6. Press \( \text{FILL} \); to change rate, use numeric data entry or \( \text{1} \) \( \text{1} \) controls.
7. Press \( \text{FILL} \); to change VTBI, use numeric data entry controls.
8. Press \( \text{FILL} \); to enter Start Time, use numeric data entry controls.
9. Select either AM or PM (if required) by using the \( \text{1} \) \( \text{1} \) or \( \text{2} \) \( \text{2} \) controls.
10. Press \( \text{FILL} \) to confirm start time entry.
11. Select a Callback alert by using the \( \text{STOP} \) or \( \text{START} \) controls to select "YES" or "NO".
12. Press \( \text{START} \).
13. Attach set to patient's vascular access device.
14. Confirm the correct entry of all dosing parameters and press \( \text{START} \).
ABBREVIATED SETUP AND OPERATING PROCEDURES (continued)

To Set Up a Delayed Start Secondary Infusion
1. Prime and load the primary administration set as previously described.
2. Select channel, press \( \text{A} \) or \( \text{B} \).
3. Press \( \text{MIN} \) control.
4. Select Option #1, Delayed Start.
5. Confirm Current Time is correct.
6. Press \( \text{RATE} \) to change rate, use numeric data entry or \( \text{D} \) controls.
7. Press \( \text{VTBI} \) to change VTBI, use numeric data entry controls.
8. Press \( \text{SET} \).
9. Press \( \text{SET} \).
10. Use numeric data entry or \( \text{D} \) controls to change secondary rate.
11. Press \( \text{SET} \).
12. Use numeric data entry controls to change secondary VTBI.
13. Press \( \text{SET} \) confirm that the current time is correct (if required); use numeric data entry, controls to set Start Time.
14. Select either AM or PM (if required) by using the \( \text{A} \) or \( \text{B} \) controls.
16. Confirm the correct entry of all closing parameters and press \( \text{SET} \).

To Use Drug Calculation
1. Prime and load the primary administration set as previously described.
2. Select channel, press \( \text{A} \) or \( \text{B} \).
3. Press \( \text{MIN} \) control.
4. Select Option #2, Drug Calculation Setup.
5. Enter Drug Amount.
6. Select the appropriate unit of measure by using the \( \text{D} \) or \( \text{E} \) controls.
7. Press \( \text{MIN} \).
8. Enter the appropriate Diluent Volume.
9. Press \( \text{SET} \).
10. Select either the "YES" or "NO" for dosing based on patient weight by using the \( \text{E} \) or \( \text{F} \) controls. (If "NO" is selected, go to Step 14.)
11. Press \( \text{SET} \).
12. Enter the patient weight in kilograms (kg).
13. Press \( \text{SET} \).
14. Select drug dosing time base (min or hours) using the \( \text{G} \) or \( \text{H} \) controls.
15. Confirm the correct drug dosing units and press \( \text{SET} \). (Drug dosing units may be edited by pressing \( \text{SET} \ ).
16. Set the Rate or Dose.
   a. Press \( \text{SET} \) control, then enter the desired flow rate.
   or
   b. Press \( \text{SET} \) control, then enter the desired drug dose.
17. Press \( \text{SET} \).
18. Enter the desired VTBI.
19. Attach set to patient's vascular access device.
20. Press \( \text{SET} \)
ABBREVIATED SETUP AND OPERATING PROCEDURES (continued)

To Set Up a Multidose Infusion
1. Prime and load the primary administration set as previously described.
2. Select channel, press A or B.
3. Press \(\) control.
4. Use the \(\) controls to move to screen 2 of the Channel Options display, then select Option #1, Multidose.
5. Confirm current time.
6. Enter the desired rate.
7. Press \(\).
8. Enter the desired VTBI/Dose.
9. Press \(\).
10. Enter the desired Dose Interval.
11. Press \(\).
12. Enter the desired number of doses.
13. Press \(\).
14. Enter the desired start time for the first dose.
15. Select either AM or PM (if required) by using the \(\) or \(\) controls.
16. Attach set to patient’s vascular access device.
17. Confirm the correct entry of all dosing parameters and press \(\).

To Power Off The PC-2TX
1. Select channel, press A or B.
2. Press \(\).
3. Repeat sequence for other channel, if infusing.

NOTE
If a Multidose or Drug Calculation infusion has been programmed, a pop-up menu will appear, prior to powering down, requesting a “save” or “clear” decision. Press \(\) to save or \(\) to clear the programmed infusion.

CHANGING THE PRIMARY SOLUTION CONTAINER
1. Select Channel, press A or B.
2. Press \(\) to stop infusion.
3. Close the roller clamp.
4. Remove the empty solution container.
5. Spike the new container. Ensure the drip chamber is 2/3 full.
6. Press \(\) to change VTBI, use numeric data entry controls.
7. Open roller clamp.
8. Press \(\).

UNLOADING THE SET
1. Select channel, press A or B.
2. Press \(\) or \(\) to stop infusion.
3. Close the roller clamp.
4. Open the door. The set’s Flo-Stop\textsuperscript{\textregistered} will automatically close to prevent accidental free-flow.
5. Remove administration set Flo-Stop\textsuperscript{\textregistered} first, lift upper fitment vertically from upper fitment recess.
6. Close the door whenever the pump is not in use.
INDEPENDENT SETUP AND OPERATING PROCEDURES

Introduction
The detailed procedures necessary to set up and operate the PC-2TX on either channel in the independent operating condition are described in the following section. Procedures for computer operation are described in the "MONITOR OR COMPUTER CONTROL SETUP AND OPERATING PROCEDURES" section of this manual.

ACTION/PROMPT

To Set Up a Primary Infusion:

1. Connect the PC-2TX to an external AC power source using the power cord supplied by ALARIS Medical Systems.

2. Press "POWER"
   - If the following screen displays, remove the instrument from service.
   
   ![channel malfunction message]
   
   - Press "POWER"
   - An audio tone sounds once.

NOTE
If displays appear abnormal, remove pump from service.

NOTE
If CHANNEL SELECT A or B control is not pressed within two minutes of pressing POWER ON, the PC-2TX will automatically power down.

3. Open the administration set package, remove set, and close the roller clamp. Refer to the Directions For Use provided with set packaging.

4. Insert the set spike into the prepared fluid container following accepted hospital procedure and hang the container a minimum of 24 inches above the PC-2TX.

5. Fill the drip chamber approximately 2/3 full.

6. Open the roller clamp slowly to prime the tubing and clear air from the injection sites and tubing fitments.

DISPLAY RESPONSE

- AC Power indicator - Illuminates
- Battery operation indicator - extinguishes

NOTE
During initialization, ensure the following occur:
Channel Information Display:
- All LEDs illuminate for 3 seconds.
- Rate displays show "888.8" then extinguish, except channel A which shows "- - - - - - -".
- Message displays illuminate "A 888.8" then extinguish.
Central Information Display shows:

```
A 888.8
```
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

**ACTION/PROMPT**

7. Close the roller clamp.

8. Open the door. Install the administration set pumping chamber by properly positioning the upper fitment into the upper fitment recess, and then inserting the Flo-Stop® fitment into the Flo-Stop recess below the pump mechanism, with the arrow pointing into the pump.

9. **Press the tubing into the Air-In-Line detector.**

10. Close the door and open the roller clamp.

11. **Press A:**
   - After 3 seconds "> Enter Rate Value" displays
   - After 12 seconds audio prompt sounds

   **Display Response:**
   - Pump mechanism homes.

12. **Set the rate and VTBI**
   
   a. Press A:
      - After 3 seconds "> Enter VTBI Value" displays
      - After 12 seconds audio prompt sounds

   **Central Information Display:**
   - Channel indicator - illuminates
   - Rate display shows "- - - -"

   **Central Information Display:**
   - New rate value displays

b. Use numeric data entry controls to enter rate parameter

c. Press A:
   - After 3 seconds "> Enter VTBI Value" displays
   - After 12 seconds audio prompt sounds

   **Central Information Display:**
   - 125 ml/hr
d. Use numeric data entry controls to enter VTBI parameter
   • After 3 seconds "> Press " displays

13. Attach the set to the patient’s vascular access device following accepted hospital procedure.

14. Press □

NOTES
Immediate air-in-line alarm after initial setup and operation may indicate that the administration set is not properly installed in the Air-In-Line detector.

If enabled in System Configuration, the tamper-resistant feature may be initiated at this point. Press and hold the AUDIO control (rear panel) for 3 seconds until an audio tone sounds. The front panel is now locked out, and "PANEL/KEYPAD LOCKED" will display for 3 seconds. The only controls that are operable are □ and □ (for viewing only). The infusion may not be altered in any way until the tamper-resistant feature is canceled by repeating the 3 second AUDIO control press.

During infusion:

NOTE

Various Advisories, Alarms, and Malfunctions may be displayed. Refer to the CHANNEL, CENTRAL INFORMATION DISPLAY AND ALARM RESPONSE PROCEDURES section in this manual for an explanation and appropriate response.

- New VTBI value displays

Channel Information Display:
• INFUSION indicator - flashes
• Rate display - Rate value displays

Central Information Display:

<table>
<thead>
<tr>
<th>MODE</th>
<th>VTBI = 500 ml</th>
</tr>
</thead>
</table>

Channel Information Display:
• VTBI value - decrements
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

Upon completion of the infusion:
• Audio prompt sounds.

DISPLAY RESPONSE

Channel Information Display:
• "INFUSION COMPLETE - KVO" scrolls
• Rate display - shows 1 or set rate if <1.0 mL/hr
• ALARM indicator - flashes

Central Information Display:

To Set Up a Primary Infusion with Volume/Time Option Enabled
1. Connect the PC-2TX to an external AC power source using the power cord supplied by ALARIS Medical Systems.

2. Press [ ]
   • An audio tone sounds once.

NOTE

If CHANNEL SELECT A or B control is not pressed within two minutes of pressing POWER ON, the PC-2TX will automatically power down.

3. Prime and load the administration set as previously described under: To Set up a Primary Infusion.

4. Press [ ]
   • After 3 seconds "> Enter Rate Value" displays
   • After 12 seconds audio prompt sounds
   Channel Information Display:
   • Channel indicator - illuminates
   • Rate display shows "- - - -"
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

**ACTION/PROMPT**

**DISPLAY RESPONSE**

Central Information Display:

![Central Information Display](image)

> Enter Rate Value

5. Set the VTBI and duration

a. Press [ ]:
   - After 3 seconds "Enter VTBI Value" displays
   - After 12 seconds audio prompt sounds

b. Use numeric data entry controls to enter VTBI parameter

c. Press [ ] or [ ].
   - After 3 seconds "Enter Rate Value" displays
   - After 12 seconds audio prompt sounds

d. Use numeric data entry controls to enter duration parameter.
   - As Duration parameters are entered, the rate value displays
   - After 3 seconds "Press [ ]" displays

```
  5. Set the VTBI and duration
a. Press [ ].
   - After 3 seconds "Enter VTBI Value" displays
   - After 12 seconds audio prompt sounds
b. Use numeric data entry controls to enter VTBI parameter

c. Press [ ] or [ ].
   - After 3 seconds "Enter Rate Value" displays
   - After 12 seconds audio prompt sounds

d. Use numeric data entry controls to enter duration parameter.
   - As Duration parameters are entered, the rate value displays
   - After 3 seconds "Press [ ]" displays
```

**NOTES**

It is acceptable to enter either a rate and VTBI or a VTBI and duration. If a rate and VTBI are entered that result in a duration of less than 1 minute, the duration will display as "<1 minute".

The rate calculation resulting from a Volume/Time parameter input is rounded to the nearest whole number for rates >20 mL/hr.
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

**ACTION/PROMPT**

6. Attach the set to the patient's vascular access device following accepted hospital procedure.

7. Press 📢.

**DISPLAY RESPONSE**

Channel Information Display:
- INFUSION indicator - flashes
- Rate display - Rate value displays

Central Information Display:

<table>
<thead>
<tr>
<th>Channel Information Display:</th>
</tr>
</thead>
<tbody>
<tr>
<td>VTBI = 1000 mL</td>
</tr>
</tbody>
</table>

**During infusion:**

**NOTE**

Various Advisories, Alarms, and Malfunctions may be displayed. Refer to the CHANNEL, CENTRAL INFORMATION DISPLAY AND ALARM RESPONSE PROCEDURES section in this manual for an explanation and appropriate response.

**Upon completion of the infusion:**

- Audio prompt sounds.

Channel Information Display:
- INFUSING indicator - flashes
- VTBI value decreases

Central Information Display:

<table>
<thead>
<tr>
<th>Channel Information Display:</th>
</tr>
</thead>
<tbody>
<tr>
<td>KVO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>channel Information Display:</th>
</tr>
</thead>
<tbody>
<tr>
<td>KVO</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

To Adjust Central Information Display Contrast

1. Press \( \text{CH} \) (do not select channel first).
   - After 3 seconds "Press CANCEL to Exit" displays

2. Press \( \text{R} \).

3. Use the \( \text{A} \) and \( \text{B} \) controls to adjust the contrast of the central display.
   - After 3 seconds "Press ENTER to confirm" displays

4. Press \( \text{ENT} \).

5. Press \( \text{ESC} \) to return to initial screen

To Pause an Infusion

1. Press \( \text{A} \) or \( \text{B} \) to select channel.
   - After 3 seconds "Press \( \text{ESC} \)" displays
   - After 12 seconds audio prompt sounds

Central Information Display:

- Display contrast increases with each press of \( \text{A} \) and decreases with each press of \( \text{B} \).

Central Information Display:
- Returns to System Options screen

Central Information Display:
- Returns to initial screen

Channel Information Display:
- Channel indicator - illuminates
- INFUSING indicator - flashes

Central Information Display:

<table>
<thead>
<tr>
<th>Infusion Setup</th>
</tr>
</thead>
<tbody>
<tr>
<td>RATE: 125 ml/hr</td>
</tr>
<tr>
<td>VOLUME: 500 ml</td>
</tr>
</tbody>
</table>

> Press \( \text{START} \)
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

2. Press START.
   - After 3 seconds "Press START" displays
   - After 12 seconds audio prompt - sounds. In Anesthesia mode, audio is disabled.

3. Press START to resume the infusion.

To Stop a Primary Infusion

1. Press A or B to select channel.
   - After 3 seconds "Press START" displays
   - After 12 seconds audio prompt - sounds

2. Press START.

   NOTE

If only one channel is in use, the PC-2TX will automatically power down.

DISPLAY RESPONSE

Channel Information Display:
- INFUSING indicator - extinguishes
- STANDBY Indicator - flashes
- "PAUSE" advisory scrolls.

Central Information Display:
- NO CHANGE

Channel Information Display:
- STANDBY indicator - extinguishes
- INFUSING indicator - flashes
- Message display - blanks

Central Information Display:
- Returns to infusing screen

Channel Information Display:
- Channel indicator - illuminates

Central Information Display:
- Selected channel display - extinguishes

or

- if only one channel active:

   Powering down in...
   
   3 second(s)

   - Time value decrements from 3 to 1, then the PC-2TX powers down
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

DISPLAY RESPONSE

To Change Rate or VTBI During Primary Infusion

1. Press A or B to select channel.
   - After 3 seconds "Press START" displays
   - After 12 seconds audio prompt sounds
   
   Channel Information Display:
   • Channel indicator - Illuminates
   Central Information Display:
   
   Infusion Setup
   
   Rate: 125 ml/hr
   VTBI: 500 ml
   
   > Press START

2. Press C or D.
   - After 3 seconds "Press START" displays
   - After 12 seconds audio prompt sounds
   
   Central Information Display:
   
   Infusion Setup
   
   Rate: 125 ml/hr
   VTBI: 500 ml
   
   > Press START

3. Use the numeric data entry controls to change rate or VTBI. The controls can also be used to change rate.
   - After 3 seconds "Press START" displays
   - After 12 seconds audio prompt sounds
   
   Channel Information Display:
   • NO CHANGE
   Central Information Display:
   • Rate or VTBI parameter changes to new value

4. Press START.

NOTE

If new rate and/or VTBI parameters have been selected, but not confirmed by pressing START or PAUSE; the currently confirmed parameters can be recalled by pressing Rate (VTBI), then pressing the CANCEL control.
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

If the Volume/Time infusion option has been enabled, the duration parameter may also be changed as described above for Rate and VTBI.

NOTE

An infusion setup sequence may be interrupted to respond to a situation on another channel by selecting the other channel, taking appropriate action and then pressing START. To return to the interrupted infusion setup, re-select the channel, press ENTER to continue the programming sequence or press CANCEL to return to the original operating parameters.

DISPLAY RESPONSE

- Programming on channel X has not been completed
- Press ENTER to complete/confirm
- Press CANCEL to clear program

To Titrate RATE

1. Press A or B to select channel.

2. Use A control to increase or D control to decrease the rate parameter in 1 or 0.1 mL/hr increments or
   Press and hold the A or D control to scroll to a new rate parameter
   - After 3 seconds → Press START displays
   - After 12 seconds audio prompt sounds

3. Press B.

Channel Information Display:
- Channel indicator - illuminates
- Central Information Display:
  - Infusion Setup screen displays

Channel Information Display:
- NO CHANGE
- Central Information Display:
  - Rate graphic is highlighted
  - New rate value is displayed

Channel Information Display:
- New rate value displays
- Central Information Display:
  - Returns to active infusion screen
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

3. Press 🔄.
   - After 3 seconds "> Press CANCEL to Exit" displays
   - After 12 seconds audio prompt sounds

4. Press 🔄.

To Restart an Infusion Following an "INFUSION COMPLETE - KVO" or "EMPTY CONTAINER - KVO" Advisory

1. Press 🔄 or 🔄 to select channel.
   - After 3 seconds "> Enter VTBI Value" displays

2. Press 🔄.

DISPLAY RESPONSE

Channel Information Display: NO CHANGE
Central Information Display:

<table>
<thead>
<tr>
<th>Pressure History</th>
</tr>
</thead>
<tbody>
<tr>
<td>900</td>
</tr>
<tr>
<td>200</td>
</tr>
</tbody>
</table>

> Press CANCEL to Exit

Channel Information Display:
- Channel indicator - illuminates
Central Information Display:
- Returns to active infusion screen

Channel Information Display:
- Rate display shows "1" or set rate if <1.0 mL/hr
- "INFUSION COMPLETE - KVO" or "EMPTY CONTAINER - KVO" scrolls

Central Information Display:

<table>
<thead>
<tr>
<th>Infusion Setup</th>
</tr>
</thead>
<tbody>
<tr>
<td>RATE 125 mL/hr</td>
</tr>
<tr>
<td>VTBI 0 mL</td>
</tr>
</tbody>
</table>

> Enter VTBI Value

Channel Information Display: NO CHANGE
Central Information Display:

<table>
<thead>
<tr>
<th>Infusion Setup</th>
</tr>
</thead>
<tbody>
<tr>
<td>RATE 125 mL/hr</td>
</tr>
<tr>
<td>VTBI 0 mL</td>
</tr>
</tbody>
</table>

> Enter VTBI Value
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

3. Use the numeric data entry controls to set a new VTBI.

4. Replace solution container and refill drip chamber, if necessary.

5. Change rate, if necessary.

6. Press [ ].

DISPLAY RESPONSE

Channel Information Display: NO CHANGE
Central Information Display:
- New VTBI displays

Channel Information Display:
- Set rate displays
- INFUSING indicator - flashes
- Message display - blanks
Central Information Display:
- Returns to active infusion screen

NOTE

If the Volume/Time infusion option has been enabled, the duration parameter may also be changed as described above for Rate and VTBI.

To View Primary, Secondary and Total Volume Infused for both Channels Simultaneously

1. Press [ ].
   - Active channel indicators are highlighted

<table>
<thead>
<tr>
<th>Channel Information Display: NO CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Information Display:</td>
</tr>
<tr>
<td>Volume Infused</td>
</tr>
<tr>
<td>----------------------------------------</td>
</tr>
<tr>
<td>[ PRI</td>
</tr>
<tr>
<td>A: 351.1 + 25.0 = 376.1</td>
</tr>
<tr>
<td>B: 0.0 + 9.0  = 9.0</td>
</tr>
</tbody>
</table>

* Example Values

To Clear Primary, Secondary and Total Volume Infused for all Channels Simultaneously

1. Press [ ].
   - Active channel indicators are highlighted

<table>
<thead>
<tr>
<th>Channel Information Display: NO CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Information Display:</td>
</tr>
<tr>
<td>Volume Infused</td>
</tr>
<tr>
<td>----------------------------------------</td>
</tr>
<tr>
<td>[ PRI</td>
</tr>
<tr>
<td>A: 351.1 + 25.0 = 376.1</td>
</tr>
<tr>
<td>B: 0.0 + 9.0  = 9.0</td>
</tr>
</tbody>
</table>
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

2. Press \[ \text{ } \]
   • After 3 seconds "> Select Option/Cancel" displays
   • After 12 seconds audio prompt sounds

3. Use \[ \text{ } \] to select "Yes".
   • After 3 seconds "> Press [ENTER] to confirm" displays
   • After 12 seconds audio prompt sounds

4. Press \[ \text{ } \]

DISPLAY RESPONSE

Channel Information Display:
NO CHANGE

Central Information Display:

<table>
<thead>
<tr>
<th>Type</th>
<th>Pr1</th>
<th>Sec</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Int</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

> Select Option/Cancel

Channel Information Display:
NO CHANGE

Central Information Display:
• Selected option is highlighted

Channel Information Display:
NO CHANGE

Central Information Display:
• Returns to active infusion screen

To View Primary, Secondary and Total Volume Infused on Selected Channel

1. Press \[ \text{ } \] or \[ \text{ } \] to select channel.
   • After 3 seconds "> Press [ ]" displays
   • After 12 seconds audio prompt sounds

2. Press \[ \text{ } \]

Channel Information Display:
• Channel indicator illuminates

Central Information Display:
• Infusion Setup screen displays

Channel Information Display:
NO CHANGE

Central Information Display:
• Channel specific volume infused screen displays for 10 seconds:

<table>
<thead>
<tr>
<th>Type</th>
<th>Pr1</th>
<th>Sec</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Int</td>
<td>351.1 ml</td>
<td>25.0 ml</td>
<td>376.1 ml</td>
</tr>
</tbody>
</table>

• After 10 seconds the Infusion Setup screen re-displays
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT


DISPLAY RESPONSE

Channel Information Display:
- Channel indicator - extinguishes
Central Information Display:
- Returns to active infusion screen

To Clear Primary, Secondary and Total Volume Infused on Selected Channel

   - After 3 seconds "Press 3700" displays
   - After 12 seconds audio prompt - sounds

2. Press [D].

Channel Information Display:
- Channel indicator - illuminates
Central Information Display:
- Infusion Setup screen displays

Channel Information Display:
- NO CHANGE
Central Information Display:
- Channel specific volume infused screen displays for 10 seconds:

<table>
<thead>
<tr>
<th>Infused Volume Infused</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PPI</strong> 351.1 ml</td>
</tr>
<tr>
<td><strong>SCC</strong> 25.0 ml</td>
</tr>
<tr>
<td><strong>TOTAL</strong> 376.1 ml</td>
</tr>
</tbody>
</table>

Channel Information Display:
- NO CHANGE
Central Information Display:

<table>
<thead>
<tr>
<th>Infused Volume Infused</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PPI</strong> 5.0 ml</td>
</tr>
<tr>
<td><strong>SCC</strong> 5.0 ml</td>
</tr>
<tr>
<td><strong>TOTAL</strong> 10.0 ml</td>
</tr>
</tbody>
</table>

- After 10 seconds the Infusion Setup screen re-displays

Channel Information Display:
- Channel indicator - extinguishes
Central Information Display:
- Returns to active infusion screen

3. Press [A] while the Volume Infused screen is displaying to clear all Values to "0".

To Set Up Secondary (Piggyback) Infusion With Dual Rates

NOTE

The PC-2TX will only allow Secondary infusion rate and VTBI parameters in the same delivery modes (PUMP/CONTROLLER) and numerical values (fractions versus integer) as the Primary rate and VTBI infusion parameters.

1. Set up and start the Primary infusion (using a check valve administration set) as previously described.
   - The Secondary infusion may be set up prior to or after starting a Primary infusion.
2. Open the Secondary administration set package, remove set, and close clamp.
3. Insert the set spike into the prepared fluid container and hang the Secondary container following accepted hospital procedure.
4. Fill the drip chamber =2/3 full.
5. Open the Secondary clamp and prime the set. Close clamp.
6. Attach the Secondary set to the upper injection site on the Primary set.
7. Lower the Primary fluid container using the hanger provided with the Secondary set.
8. Press A or B to select channel.

9. Press 
   - After 3 seconds "Enter Rate Value" displays
   - Rate parameter is automatically selected

Channel Information Display:
- Channel indicator - illuminates
- INFUSING indicator - continues flashing

Central Information Display:
- Infusion Setup screen displays

Channel Information Display:
- NO CHANGE

Central Information Display:

<table>
<thead>
<tr>
<th>Infusion Setup</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRI</td>
</tr>
<tr>
<td>YMB</td>
</tr>
<tr>
<td>VTBI</td>
</tr>
</tbody>
</table>

> Enter Rate Value
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

**ACTION/PROMPT**

10. Use numeric data entry or \[ \text{controls} \] controls to enter or change rate value.
   - After 3 seconds ">Enter VTBI Value" displays
   - After 12 seconds audio prompt sounds

11. Press \[ \text{VTBI} \]
   - After 3 seconds "> Enter VTBI Value" displays
   - After 12 seconds audio prompt sounds

12. Use numeric data entry controls to enter or change VTBI value, then press \[ \text{START} \] to confirm.
   - After 3 seconds "> Press \[ \text{START} \]" displays
   - After 12 seconds audio prompt sounds

**NOTE**

Verify that the Secondary VTBI does not exceed the contents of the Secondary fluid container.


14. Press \[ \text{START} \]

**DISPLAY RESPONSE**

Channel Information Display: NO CHANGE
Central Information Display:
- New rate value displays

Channel Information Display: NO CHANGE
Central Information Display:
- Last programmed secondary VTBI value displays

Channel Information Display: NO CHANGE
Central Information Display:

![Infusion Setup Table]

<table>
<thead>
<tr>
<th></th>
<th>PRI</th>
<th>SEC</th>
<th>RATE</th>
<th>MSDL</th>
<th>PRIMARY VTBI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25</td>
<td></td>
<td>100</td>
<td>ml/hr</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>50 ml</td>
</tr>
</tbody>
</table>

> Press \[ \text{START} \]

Channel Information Display:
- Channel indicator - extinguishes
- Secondary rate - displays
- "SECONDARY" message scrolls

Central Information Display:

![VTBI Table]
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

During infusion:

NOTE

Various Advisories, Alarms, and Malfunctions may be displayed. Refer to the CHANNEL, CENTRAL INFORMATION DISPLAY, AND ALARM RESPONSE PROCEDURES section in this manual for an explanation and appropriate response.

Upon Completion of the Secondary infusion:
• Switch over audio alert (6 beeps) - sounds
  (unless disabled in System Configuration)

NOTE

Actual changeover from the Secondary to the Primary IV solution is accomplished independently of pump/controller operation and occurs when the fluid level in the Secondary container drops to the same level as the fluid level in the Primary fluid container.

To Set Up Secondary (Piggyback) Infusion With Dual Rates and Volume/Time Infusion Option Enabled
1. Set up and start the Primary infusion (using a check valve administration set) as previously described.
   • The Secondary infusion may be set up prior to or after starting a Primary infusion.

2. Set up the Secondary administration set as previously described.

3. Press A or B to select channel.

DISPLAY RESPONSE

Channel Information Display:
• INFUSING indicator - flashes
• Secondary rate - displays
Central Information Display:
• VTBI (Secondary) - decrements

Channel Information Display:
• Primary rate displays
• Message screen clears
Central Information Display:

<table>
<thead>
<tr>
<th>VTBI</th>
<th>ml</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td></td>
</tr>
</tbody>
</table>

Channel Information Display:
• Channel indicator - illuminates
• INFUSING indicator - continues flashing
Central Information Display:
• Infusion Setup screen displays
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

**ACTION/PROMPT**

4. Press the button.
   - After 3 seconds "> Enter Rate Value" displays
   - After 12 seconds audio prompt - sounds

5. Press the button.
   - After 3 seconds "> Enter VTBI Value" displays
   - After 12 seconds audio prompt - sounds

6. Use numeric data entry controls to enter or change VTBI value.
   - After 12 seconds audio prompt - sounds

7. Press the or button.
   - After 3 seconds "> Press " displays
   - After 12 seconds audio prompt - sounds

8. Use numeric data entry controls to enter or change duration.
   - Rate value is calculated and displayed
   - After 3 seconds "> Press " displays
   - After 12 seconds audio prompt - sounds

**DISPLAY RESPONSE**

Channel Information Display:
- NO CHANGE
Central Information Display:

<table>
<thead>
<tr>
<th>Infusion Setup</th>
<th>Rate</th>
<th>VTBI</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPI</td>
<td>125</td>
<td>900</td>
<td>900</td>
</tr>
<tr>
<td>&gt; Enter Rate Value</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Channel Information Display:
- NO CHANGE
Central Information Display:

<table>
<thead>
<tr>
<th>Infusion Setup</th>
<th>Rate</th>
<th>VTBI</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>PP</td>
<td>225</td>
<td>900</td>
<td>900</td>
</tr>
<tr>
<td>&gt; Enter VTBI Value</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Channel Information Display:
- NO CHANGE
Central Information Display:

<table>
<thead>
<tr>
<th>Infusion Setup</th>
<th>Rate</th>
<th>VTBI</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPI</td>
<td>125</td>
<td>900</td>
<td>900</td>
</tr>
<tr>
<td>&gt; Press</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Central Information Display:
- Last programmed duration displays

Channel Information Display:
- NO CHANGE
Central Information Display:

<table>
<thead>
<tr>
<th>Infusion Setup</th>
<th>Rate</th>
<th>VTBI</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPI</td>
<td>125</td>
<td>900</td>
<td>900</td>
</tr>
<tr>
<td>&gt; Press</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Channel Information Display:
- NO CHANGE
Central Information Display:

<table>
<thead>
<tr>
<th>Infusion Setup</th>
<th>Rate</th>
<th>VTBI</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPI</td>
<td>125</td>
<td>900</td>
<td>900</td>
</tr>
<tr>
<td>&gt; Press</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Central Information Display:
- NO CHANGE
Channel Information Display:

<table>
<thead>
<tr>
<th>Infusion Setup</th>
<th>Rate</th>
<th>VTBI</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPI</td>
<td>125</td>
<td>900</td>
<td>900</td>
</tr>
<tr>
<td>&gt; Press</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Central Information Display:
- NO CHANGE
Channel Information Display:

<table>
<thead>
<tr>
<th>Infusion Setup</th>
<th>Rate</th>
<th>VTBI</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPI</td>
<td>125</td>
<td>900</td>
<td>900</td>
</tr>
<tr>
<td>&gt; Press</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Central Information Display:
- NO CHANGE
Channel Information Display:

<table>
<thead>
<tr>
<th>Infusion Setup</th>
<th>Rate</th>
<th>VTBI</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPI</td>
<td>125</td>
<td>900</td>
<td>900</td>
</tr>
<tr>
<td>&gt; Press</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
INDEPENDENT SETUP AND OPERATING PROCEDURE (continued)

ACTION/PROMPT

NOTES

Verify that the Secondary VTBI does not exceed the contents of the Secondary fluid container.

It is acceptable to enter either a VTBI/Duration or a Rate/VTBI as the Secondary Infusion parameters when the Volume/Time Infusion option is enabled.


10. Press [ON].

Channel Information Display:
- Channel Indicator - extinguishes
- Secondary rate - displays
- "SECONDARY" message scrolls

Central Information Display:

During Infusion:

NOTE

Various Advisories, Alarms, and Malfunctions may be displayed. Refer to the CHANNEL, CENTRAL INFORMATION DISPLAY AND ALARM RESPONSE PROCEDURES section in this manual for an explanation and appropriate response.

Upon Completion of the Secondary Infusion:

- Switchover audio alert (6 beeps) - sounds (unless disabled in System Configuration)

NOTE

Actual changeover from the Secondary to the Primary IV solution is accomplished independently of pump/controller operation and occurs when the fluid level in the Secondary container drops to the same level as the fluid level in the Primary fluid container.

Channel Information Display:
- Primary rate displays
- Message screen clears

Central Information Display:
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

DISPLAY RESPONSE

To Change Primary Infusion Parameters During Secondary Infusion

1. Press \[ \text{[Left]} \] or \[ \text{[Right]} \] to select channel.
   - After 3 seconds "Press \[ \text{[Start]} \]" displays
   - After 12 seconds audio prompt - sounds

Channel Information Display:
- Channel indicator - illuminates

Central Information Display:

<table>
<thead>
<tr>
<th>Channel Setup</th>
<th>P Caps</th>
<th>SEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key 1</td>
<td>125</td>
<td>100 ml/hr</td>
</tr>
<tr>
<td>(VTBI)</td>
<td>500</td>
<td>50 ml</td>
</tr>
</tbody>
</table>

> Press \[ \text{[Start]} \]

2. Press \[ \text{[Space]} \].
   - After 3 seconds "Press \[ \text{[Start]} \]" displays

Channel Information Display:
- NO CHANGE

Central Information Display:

<table>
<thead>
<tr>
<th>Channel Setup</th>
<th>P Caps</th>
<th>SEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key 1</td>
<td>125</td>
<td>100 ml/hr</td>
</tr>
<tr>
<td>(VTBI)</td>
<td>500</td>
<td>50 ml</td>
</tr>
</tbody>
</table>

> Press \[ \text{[Start]} \]

3. Use numeric data entry or \[ \text{[Left]} \] \[ \text{[Right]} \] controls to change primary rate value.

Channel Information Display:
- NO CHANGE

Central Information Display:

- New primary rate value displays

4. Press \[ \text{[Space]} \] to change primary VTBI.

Channel Information Display:
- NO CHANGE

Central Information Display:

- Cursor displays under VTBI value
- VTBI is highlighted

5. Use numeric data entry controls to change primary VTBI.
   - After 3 seconds "Press \[ \text{[Start]} \]" displays
   - After 12 seconds audio prompt - sounds

Channel Information Display:
- NO CHANGE

Central Information Display:

- New primary VTBI value displays
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

6. Press Q
   • After 3 seconds "Press" displays
   • After 12 seconds audio prompt sounds

7. Press R

DISPLAY RESPONSE

Channel Information Display:

Central Information Display:

To Stop a Secondary Infusion and Return to the Primary Infusion

1. Press Q or R to select channel.
   • After 3 seconds "Press" displays
   • After 12 seconds audio prompt sounds

2. Press S
   • After 3 seconds "Press" displays


4. Press T

Channel Information Display:

Central Information Display:
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

5. Use or to select "Yes" option.

6. Press .
   • The secondary infusion stops and the primary infusion starts.
   • The audio tone sounds six times (unless the primary switchover alert is disabled).

DISPLAY RESPONSE

Central Information Display:
• "Yes" option is highlighted

Channel Information Display:
• Rate changes to Primary value
• Channel indicator - extinguishes

Central Information Display:
• Primary active infusion screen displays

To Change the Time of Day

1. Press .

2. Press .
   • After 12 seconds audio prompt - sounds

NOTE
If a Delayed Start or Multidose is active, "> Delay Mode Is Active" will display and Time-of-Day display screen can not be accessed.

3. Use numeric data entry controls to enter the new time.

4. Use or to select AM or PM, if clock is in the AM/PM mode.

5. Press to confirm.

6. Press .

Central Information Display:

<table>
<thead>
<tr>
<th>System Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
</tbody>
</table>
> Press CANCEL to Exit

Central Information Display:

<table>
<thead>
<tr>
<th>Time-of-Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000 hrs</td>
</tr>
</tbody>
</table>

Central Information Display:
• New time displays

Channel Information Display:
NO CHANGE

Central Information Display:
• System Options screen displays

Channel Information Display:
NO CHANGE

Central Information Display:
• Infusion setup or active screen displays
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

DISPLAY RESPONSE

To Set Up a Delayed Start Infusion

NOTE

Since by definition, a Delayed Start Infusion will not be infusing for a programmed period of time, it is assumed that another infusing IV line will keep the vein open until the delayed start infusion begins. No KVO (Keep Vein Open) infusion precedes or follows a Delayed Start program.

1. Prime and load the primary administration set as previously described.

2. Press  or  to select channel.
   - After 3 seconds "Enter Rate Value" displays
   - After 12 seconds audio prompt - sounds

3. Press .
   - After 3 seconds "Press 1-5 or  or CANCEL" displays
   - After 12 seconds audio prompt - sounds

4. Press .
   - After 3 seconds "Enter Rate Value" displays
   - After 12 seconds audio prompt - sounds

Channel Information Display:
- Channel indicator - Illuminates
- RATE display shows ". . . . . . . . . . . . . .

Central Information Display:
- Infusion Setup screen displays

Channel Information Display:
- NO CHANGE

Central Information Display:

Channel Information Display:
- NO CHANGE

Central Information Display:

Channel Information Display:
- NO CHANGE

Central Information Display:
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

NOTE
If this is the first Delayed Start (or Multidose) Setup following POWER ON, the following pop-up display appears:

If the time displayed in the upper right corner of the display is correct, press ENTER to continue. If the time displayed is incorrect press NO. The following pop-up display appears:
Enter the correct Time of Day and press ENTER.

NOTE
If the Volume/Time Infusion option is enabled, the Delayed Start Infusion setup screen will include a “Duration” parameter that will display between the VTBI and START TIME lines as shown below:

The duration parameter is calculated based upon the Rate and VTBI inputs. A duration value can not be entered directly in the Delayed Start mode.

5. Press ENTER.
   - After 3 seconds "Enter Rate Value" displays
   - After 12 seconds audio prompt - sounds

6. Use numeric data entry or controls to input or change rate value.
   - After 3 seconds "Enter VTBI Value" displays
   - After 12 seconds audio prompt - sounds

7. Press ENTER.
   - After 3 seconds "Enter VTBI Value" displays
   - After 12 seconds audio prompt - sounds

Channel Information Display:
- NO CHANGE
Central Information Display:
- RATE is highlighted
- Last entered rate or "0" displays

Channel Information Display:
- NO CHANGE
Central Information Display:
- New rate value displays

Channel Information Display:
- NO CHANGE
Central Information Display:
- VTBI is highlighted
- Last VTBI value or "0" displays
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

8. Use numeric data entry controls to input or change VTBI value.
   • After 3 seconds "Enter Start Time" displays
   • After 12 seconds audio prompt - sounds

9. Press 
   • After 3 seconds "Enter Start Time" displays
   • After 12 seconds audio prompt - sounds

10. Use numeric data entry controls to enter start time (use to select AM or PM, if required). Maximum delay is 23 hours 59 minutes from current time.
    • After 3 seconds "Press [ENTER] to confirm" displays
    • After 12 seconds audio prompt - sounds

11. Press to change Callback Alert option.
    • Use or to select "Yes" (No is default setting) then press to confirm.
    • After 3 seconds "Press [ENTER] displays.
    • After 12 seconds audio prompt - sounds.

NOTE

Callback is an audio alert sounding at completion of a Delayed Start Infusion.

12. Attach the set to the patient's vascular access device following accepted hospital procedure.
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

13. Press \start\.

DISPLAY RESPONSE

Channel Information Display:
- Rate display shows "---"
- STANDBY indicator - illuminates
- Channel indicator - extinguishes

Central Information Display:

When START TIME = Current time
- Infusion Starts

When the infusion is complete
- Infusion Stops (No KVO)
- If Callback Alert was selected, an audio alert sounds

Channel Information Display:
- Programmed rate displays
- INFUSING indicator - flashes

Central Information Display:
- Active infusion screen displays including Time-of-Day display
- VTBI decrements

Channel Information Display:
- Channel Indicator - extinguishes
- Rate display - blanks
- "DELAYED START COMPLETE" scrolls

Central Information Display:

To Set Up a Delayed Start Secondary Infusion

Since by definition, a Delayed Start Infusion will not be infusing for a programmed period of time, it is assumed that another infusing IV line will keep the vein open until the delayed start infusion begins. In a Delayed Start Secondary Infusion, no KVO (Keep Vein Open) infusion precedes or follows completion of the primary infusion.

1. Prime and load the Secondary administration set as previously described.
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

2. Press A or B to select channel.
   - After 3 seconds "Enter Rate Value" displays
   - After 12 seconds audio prompt sounds

3. Press C.
   - After 3 seconds "Press 1-5 or 6 or CANCEL" displays
   - After 12 seconds audio prompt sounds

4. Press D.
   - After 3 seconds "Enter Rate Value" displays
   - After 12 seconds audio prompt sounds

DISPLAY RESPONSE

Channel Information Display:
- Channel indicator - illuminates
- RATE display shows "- - - -".

Central Information Display:
- Infusion Setup screen displays

Channel Information Display:
- NO CHANGE

Central Information Display:

NOTE

If this is the first Delayed Start (or Multidose) Setup following POWER ON, the following pop-up display appears:

If the time displayed in the upper right corner of the display is correct, press to continue. If the time displayed is incorrect press to continue. The following pop-up display appears:

Enter the correct Time of Day and press
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

DISPLAY RESPONSE

NOTE

A Delayed Start Secondary Infusion may also be programmed by entering the Primary infusion parameters, press \[\text{•}^\] and enter the Secondary parameters then press \[\text{•}^\] and select Option #1 to select Delayed Start Secondary.

5. Press \[\text{•}^\].
   - After 3 seconds "> Enter Rate Value" displays
   - After 12 seconds audio prompt - sounds

6. Use numeric data entry or \[\text{•}^\] controls to input or change rate value.
   - After 3 seconds "> Enter VTBI Value" displays
   - After 12 seconds audio prompt - sounds

7. Press \[\text{•}^\].
   - After 3 seconds "> Enter VTBI Value" displays
   - After 12 seconds audio prompt - sounds

8. Use numeric data entry controls to input or change VTBI value.
   - After 3 seconds "> Enter Start Time" displays
   - After 12 seconds audio prompt - sounds

9. Press \[\text{•}^\].
   - After 3 seconds "> Enter Rate Value" displays
   - After 12 seconds audio prompt - sounds
   - The Rate field is highlighted

Channel Information Display:
- NO CHANGE

Central Information Display:
- RATE is highlighted
- Last entered rate or "0" displays

Channel Information Display:
- NO CHANGE

Central Information Display:
- New rate value displays

Channel Information Display:
- NO CHANGE

Central Information Display:
- VTBI is highlighted
- Last VTBI value or "0" displays

Channel Information Display:
- NO CHANGE

Central Information Display:
- Start Time

Callback Alert? No

> Enter Start Time

Channel Information Display:
- NO CHANGE

Central Information Display:
- Delay SEC

Channel Information Display:
- NO CHANGE

Central Information Display:
- Enter Rate Value
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

NOTE

If the Volume/Time Infusion option is enabled, the Delayed Start Secondary set up screen will include a "Duration" parameter displayed between VTBI and START TIME as shown below:

The duration parameter is calculated based upon rate and VTBI parameter inputs. A duration value cannot be entered directly in the Delayed Start Secondary mode.

10. Use numeric data entry or control to enter Secondary rate value.
   • After 3 seconds "> Enter VTBI Value" displays
   • After 12 seconds audio prompt - sounds

11. Press .
   • After 3 seconds "> Enter VTRI Value" displays
   • After 12 seconds audio prompt - sounds

12. Use numeric data entry controls to enter Secondary VTBI value.
   • After 3 seconds "> Enter Start Time" displays
   • After 12 seconds audio prompt - sounds

13. Press or control.
   • After 3 seconds "> Enter Start Time" displays
   • After 12 seconds audio prompt - sounds

Channel Information Display:
   NO CHANGE

Central Information Display:
   • New Secondary rate displays

Channel Information Display:
   NO CHANGE

Central Information Display:
   • VTBI is highlighted

Channel Information Display:
   NO CHANGE

Central Information Display:
   > Enter Start Time

Channel Information Display:
   NO CHANGE

Central Information Display:
   > Enter Start Time
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

14. Use numeric data entry controls to enter Start Time (Use \[ \text{AM} \] to select AM or PM, if appropriate).
   • After 3 seconds "> Press \[ \text{START} \]" displays
   • After 12 seconds audio prompt - sounds

Channel Information Display:
   NO CHANGE

Central Information Display:

<table>
<thead>
<tr>
<th>Delay SEC</th>
<th>Start Time (hrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1430</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rate</th>
<th>125 m/hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>VTBI</td>
<td>50 ml</td>
</tr>
</tbody>
</table>

START Time: 1500 hrs

> Press \[ \text{START} \]

15. Press \[ \text{Start} \]

Channel Information Display:
   - Rate display shows "- - - - -"
   - STANDBY indicator illuminates
   - Channel indicator - extinguishes

Central Information Display:

<table>
<thead>
<tr>
<th>Start Time (hrs)</th>
<th>15:00</th>
</tr>
</thead>
</table>

When START TIME = Current time
• Infusion Starts

Channel Information Display:
• Programmed rate displays
• INFUSING indicator - flashes
Central Information Display:
• Active infusion screen displays including Time-of-Day display
• Secondary VTBI decrements

When the Secondary Infusion is Complete
• Switchover audio (6 beeps) sounds (unless disabled in System Configuration)
• Primary Infusion begins

Channel Information Display:
• Primary rate displays
• Message screen clears
Central Information Display:

<table>
<thead>
<tr>
<th>VTBI</th>
<th>500 ml</th>
</tr>
</thead>
</table>

When the Secondary Infusion is Complete
• Switchover audio (6 beeps) sounds (unless disabled in System Configuration)
• Primary Infusion begins
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

To Set Up a Multidose Infusion

WARNING

The Multidose feature is to be used only by personnel properly trained in using multidose containers. Personnel using multidose containers must be trained. Single-dose piggyback systems employing deactivation valves are not intended for use with multidose containers.

NOTE

Since by definition, a Multidose infusion will not be infusing for a programmed period of time, it is assumed that another infusing IV line will keep the vein open until the beginning of the first dose and between subsequent doses. No KVO (Keep Vein Open) infusion precedes or follows a Multidose infusion program.

1. Prime and load the primary administration set as previously described.

2. Press \( \text{A} \) or \( \text{B} \) to select channel.
   - After 3 seconds "Enter Rate Value" displays
   - After 12 seconds audio prompt sounds

3. Press \( \text{MENU} \).
   - After 3 seconds " \( \text{A} \) or \( \text{CANCEL} \) or \( \text{CANCEL} \) " displays
   - After 12 seconds audio prompt sounds

Channel Information Display:
- Channel indicator - illuminates
- RATE display shows "--.--".

Central Information Display:
- Infusion Setup screen displays

Channel Information Display:
- NO CHANGE

Central Information Display:

<table>
<thead>
<tr>
<th>Channel Options</th>
<th>1 of 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Delayed Start</td>
<td></td>
</tr>
<tr>
<td>2 Drug Calculation Setup</td>
<td></td>
</tr>
<tr>
<td>3 Pressure History</td>
<td></td>
</tr>
<tr>
<td>4 Pressure Limits - P</td>
<td></td>
</tr>
<tr>
<td>5 Stop Infusion</td>
<td></td>
</tr>
</tbody>
</table>

\( \text{A} \) or \( \text{B} \) or \( \text{CANCEL} \)
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

4. Use 11 to select screen 2 of 2 of the Channel Options display.
   - After 3 seconds "Press 1-5 or C or CANCEL" displays
   - After 12 seconds audio prompt - sounds

5. Press 11.
   - After 3 seconds "Enter Rate Value" displays
   - After 12 seconds audio prompt - sounds

DISPLAY RESPONSE

Channel Information Display: NO CHANGE
Central Information Display:

A Channel Options 2 of 2
1 Mulitdose
2
3
4
5 Stop Infusion
> Press 1-5 or C or CANCEL

Channel Information Display: NO CHANGE
Central Information Display:

A Multidose 1754 hrs
Rate: 0 m/hr
Interval: 0 min
# Doses: 0 doses
Start At: 1754 hrs
> Enter Rate Value

NOTE

If this is the first Multidose (or Delayed Start) Setup following POWER ON, the following pop-up display appears:

If the time displayed in the upper right corner of the display is correct, press 11 to continue. If the time displayed is incorrect press 11. The following pop-up display appears:

Enter the correct Time of Day and press 11.

6. Use numeric data entry or 11 controls to enter the rate at which each dose is to be infused.
   - After 3 seconds "Press ENTER to confirm" displays
   - After 12 seconds audio prompt - sounds

Channel Information Display: NO CHANGE
Central Information Display:
   - Rate displays
7. Press \( \text{H} \) or \( \text{H} \).
   - After 3 seconds "\( > \text{Enter VTBI Value} \)" displays
   - After 12 seconds audio prompt - sounds

8. Use numeric data entry controls to enter the VTBI/Dose for each dose to be infused.
   - After 3 seconds "\( > \text{Press} \text{ENTER} \) to confirm" displays
   - After 12 seconds audio prompt - sounds

**NOTE**

When an Empty Container Detector (ECD) is connected to the channel, a dialog box questions if last DOSE is to be delivered until container is empty (all).

9. Press \( \text{H} \).
   - After 3 seconds "\( > \text{Enter Dose Interval} \)" displays
   - After 12 seconds audio prompt - sounds

10. Use numeric data entry controls to enter the Dose Interval (1-24 hours) for each dose to be infused.
    - After 3 seconds "\( > \text{Press} \text{ENTER} \) to confirm" displays
    - After 12 seconds audio prompt - sounds
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

11. Press $\text{[ ]}$.
   - After 3 seconds "> Enter Number of Doses" displays
   - After 12 seconds audio prompt - sounds

   NOTE

   Maximum allowable Multidose delivery schedule (number of doses times interval) is 24 hours.

12. Use numeric data entry controls to enter the Number of Doses (1-24) to be infused.
   - After 3 seconds "> Press [ ] to confirm" displays
   - After 12 seconds audio prompt - sounds

13. Press $\text{[ ]}$.
   - After 3 seconds "> Enter Start Time" displays
   - After 12 seconds audio prompt - sounds

14. Use numeric data entry controls to enter Start Time (Current time + 8 hours maximum) for initial dose (use $\text{[ ]}$ or $\text{[ ]}$ to select AM or PM, if required).
   - After 3 seconds "> Press [ ] to confirm" displays
   - After 12 seconds audio prompt - sounds

   NOTE

   To start a Multidose infusion immediately, enter the current time, as the start time.

DISPLAY RESPONSE

Channel Information Display: NO CHANGE
Central Information Display:

<table>
<thead>
<tr>
<th>Multidose</th>
<th>1764 hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate:</td>
<td>100 mL/hr</td>
</tr>
<tr>
<td>VTBI/Dose:</td>
<td>50 mL</td>
</tr>
<tr>
<td>Interval:</td>
<td>6 hrs</td>
</tr>
<tr>
<td>Doses:</td>
<td>0 doses</td>
</tr>
</tbody>
</table>

> Enter Number of Doses

Channel Information Display: NO CHANGE
Central Information Display:

Number of Doses displays

Channel Information Display: NO CHANGE
Central Information Display:

<table>
<thead>
<tr>
<th>Multidose</th>
<th>1764 hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate:</td>
<td>100 mL/hr</td>
</tr>
<tr>
<td>VTBI/Dose:</td>
<td>50 mL</td>
</tr>
<tr>
<td>Interval:</td>
<td>6 hrs</td>
</tr>
<tr>
<td>Doses:</td>
<td>4 doses</td>
</tr>
</tbody>
</table>

> Enter Start Time
15. Press \( \text{START} \).
   - After 3 seconds "Press \( \text{START} \)" displays
   - After 12 seconds audio prompt - sounds

   **NOTE**

   To edit the Multidose infusion parameters, press \( \text{START} \) to return to the top of the Multidose setup screen. Use numeric data entry controls to change highlighted parameter. Use \( \text{START} \) to move to the next parameter.

16. Attach the set to the patient's vascular access device following accepted hospital procedure.

17. Confirm the dosing parameter entries, then press \( \text{START} \).

Channel Information Display:

- **NO CHANGE**

Central Information Display:

<table>
<thead>
<tr>
<th>Multidose</th>
<th>1754 hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate:</td>
<td>100 ml/hr</td>
</tr>
<tr>
<td>VTBI/Dose:</td>
<td>30 ml</td>
</tr>
<tr>
<td>Interval:</td>
<td>5 hrs</td>
</tr>
<tr>
<td># Doses:</td>
<td>4 doses</td>
</tr>
<tr>
<td>Start At:</td>
<td>2000 hrs</td>
</tr>
</tbody>
</table>

> Press \( \text{START} \)

Channel Information Display:

- **IMMEDIATE START OF MULTIDOSE**
- INFUSING indicator - flashes
- Set Rate is displayed
- **DELAYED START OF MULTIDOSE**
- Channel indicator - extinguishes
- STANDBY indicator - illuminates
- Rate display shows "- - - -"

Central Information Display:

<table>
<thead>
<tr>
<th>Inst</th>
<th>Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DOSE1 = 2000 ml/hr</td>
</tr>
<tr>
<td>2</td>
<td>VTBI = 25 ml</td>
</tr>
</tbody>
</table>

* Delayed start
** Immediate start

When a Multidose infusion is in progress:

- Following completion of a dose infusion, DOSE"X"=(START TIME) displays (where \( X \) = number of next dose followed by its scheduled start time)
- The VTBI for an active dose infusion decrements
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

- To review the selected Multidose infusion, press A or B to call up the selected channel Multidose status summary screen.

When the Multidose infusion is completed:
- The infusion stops (with no KVO).

1. Press A or B to select channel
   - After 3 seconds "> Press [ENTER] to continue" displays
   - After 12 seconds audio prompt - sounds

2. Press [ ] to reset and resume same Multidose infusion or press [ ] to shut down channel.
   - To resume - reset start time

DISPLAY RESPONSE

Central Information Display:
- A Multidose
- Rate = 100 m/hr
- VTBI = 50 ml
- Every 6 hrs x 4 doses
- Doses completed = 1
- Dose 2 Starts 0200 hrs
- > Press [ENTER]

Channel Information Display:
- INFUSING indicator - extinguishes
- Rate display - blanks
- "MULTIDOSE COMPLETE" scrolls

Central Information Display:
- "COMPLETE" displays for the appropriate channel

Channel Information Display:
- Channel indicator - illuminates

Central Information Display:
- A Multidose 1800 hrs
- Rate = 160 m/hr
- VTBI = 50 ml
- Every 6 hrs x 4 doses
- Doses completed = 4
- MULTIDOSES COMPLETE
- > Press [ENTER] to continue

Channel Information Display:
- NO CHANGE

Central Information Display:
- ENTER Option
- Multidose infusion Program screen displays

CHANNEL OFF Option

Central Information Display:
- A Multidose 1800 hrs
- Rate = 100 m/hr
- VTBI = 50 ml
- Multidose Infusion Program?
- Press ENTER to retain program
- Press OFF to clear program
- Start At: 2000 hrs
- > Press [OFF] [ENTER]
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

3. Press to save Multidose Infusion Program or press to clear program.

DISPLAY RESPONSE

Channel Information Display:
- Channel displays - blank

Central Information Display:
- Active Infusion screen displays for other operating channel or Powerdown screen displays

To Use Drug Calculation

WARNING

The Drug Calculation feature is to be utilized by personnel properly trained in the administration of intravenously injected medications. Extreme caution should be exercised to ensure correct entry of active calculation infusing parameters. Refer to specific drug product labeling for information, dosages and appropriate administration for dilutions and degas.

1. Prime and load the primary administration set as previously described.

2. Press or to select channel.
   - After 3 seconds "Enter Rate Value" displays
   - After 12 seconds audio prompt - sounds

3. Press
   - After 3 seconds "> Press 1-5 or or CANCEL" displays
   - After 12 seconds audio prompt - sounds

4. Press
   - After 3 seconds "> Enter Drug Amount" displays
   - After 12 seconds audio prompt - sounds

Channel Information Display:
- Channel indicator - illuminates
- RATE display shows "- - - -".

Central Information Display:
- Infusion Setup screen displays

Channel Information Display:
- NO CHANGE

Central Information Display:

Action Options 1 of 2

1. Delayed Start
2. Drug Calculation Setup
3. Pressure History
4. Pressure Limits - P
5. Stop infusion

* Press 1-5 or or CANCEL

Channel Information Display:
- NO CHANGE

Central Information Display:

Drug Calculation

Amount: ______ 0 mg

Diluent: ______

Weight: ______ g

Time Unit: ______ hr

[Conc] ______

> Enter Drug Amount
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

5. Use numeric data entry controls to enter the amount of drug added to the IV container.
   • After 3 seconds "Select Unit of Measure" displays
     Use ▼ or ▲ to select a unit of measure (mcg, mg, gram or units)
   • After 3 seconds "Press [ENTER] to confirm" displays
   • After 12 seconds audio prompt - sounds

6. Press ▼
   • After 3 seconds "Enter Diluent Volume" displays
   • After 12 seconds audio prompt - sounds

7. Use numeric data entry controls to enter the Diluent Volume (when originally prepared).
   • After 3 seconds "Press [ENTER] to confirm" displays
   • After 12 seconds audio prompt - sounds

8. Press ▼
   • After 3 seconds "Dose based on Pt Wt?" displays
   • After 12 seconds audio prompt - sounds

DISPLAY RESPONSE

Channel Information Display:
   NO CHANGE
Central Information Display:
   • Selected Amount displays

Channel Information Display:
   NO CHANGE
Central Information Display:

<table>
<thead>
<tr>
<th>Drug Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount: 400 mg</td>
</tr>
<tr>
<td>Diluent: 0 ml</td>
</tr>
<tr>
<td>Weight:</td>
</tr>
<tr>
<td>Time Unit:</td>
</tr>
<tr>
<td>[Conc]:</td>
</tr>
<tr>
<td>&gt; Enter Diluent Volume</td>
</tr>
</tbody>
</table>

Channel Information Display:
   NO CHANGE
Central Information Display:
   • Diluent Volume displays

Channel Information Display:
   NO CHANGE
Central Information Display:

<table>
<thead>
<tr>
<th>Drug Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount: 400 mg</td>
</tr>
<tr>
<td>Diluent: 250 ml</td>
</tr>
<tr>
<td>Medical: No</td>
</tr>
<tr>
<td>[Conc]: 1600 mcg/ml</td>
</tr>
<tr>
<td>&gt; Dose based on Pt Wt?</td>
</tr>
</tbody>
</table>
INDEPENDENT SETUP AND OPERATING PROCEDURE (continued)

ACTION/PROMPT | DISPLAY RESPONSE
--- | ---
9. Use \( \text{a} \) or \( \text{b} \) to select Yes or No in response to query "Dose based on Pt Wt?".
- After 3 seconds \( \Rightarrow \) Press **ENTER** to confirm displays
- After 12 seconds audio prompt - sounds

Channel Information Display: NO CHANGE
Central Information Display:
- Yes or No selection is highlighted

**NOTE**
Do not enter a patient weight if weight is not used in the calculation. If setting up a second Drug Calculation also using patient weight, changing weight on one channel recalculates dosage (not infusion rate) on the other channel.

When dialog box appears, press \( \text{c} \) to confirm weight for both channels.

Channel Information Display: NO CHANGE
Central Information Display:

<table>
<thead>
<tr>
<th>Drug Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount: ( 450 \text{ mg} )</td>
</tr>
<tr>
<td>Diluent: 250 ( \text{ml} )</td>
</tr>
<tr>
<td>Weight: ( 60 \text{ kg} )</td>
</tr>
<tr>
<td><strong>DETERMINE</strong> ( &gt;&gt; &gt;&gt; &gt;&gt; &gt;&gt; )</td>
</tr>
<tr>
<td>Conc: ( 1600 \text{ mcg/ml} )</td>
</tr>
<tr>
<td>&gt; Select Time Units</td>
</tr>
</tbody>
</table>

10. Press \( \text{d} \) to confirm selection.
- If Yes is selected, use numeric data entry controls to enter patient weight in kilograms (kg) and press \( \text{e} \) to confirm
  - or
- If No is selected, press \( \text{f} \) to confirm.
  (screen will show "Weight: Not used")
- After 3 seconds \( \Rightarrow \) Select Time Units" displays

Channel Information Display: NO CHANGE
Central Information Display:
- Min or Hour Is highlighted

11. Use \( \text{g} \) or \( \text{h} \) to select Min or Hour.
- After 3 seconds \( \Rightarrow \) Press **ENTER** to confirm displays
- After 12 seconds audio prompt - sounds

Channel Information Display: NO CHANGE
Central Information Display:

12. Press \( \text{i} \) to confirm selection.
- After 3 seconds \( \Rightarrow \) Press **ENTER** displays
- After 12 seconds audio prompt - sounds

Channel Information Display: NO CHANGE
Central Information Display:
**INDEPENDENT SETUP AND OPERATING PROCEDURES** (continued)

**ACTION/PROMPT**

**DISPLAY RESPONSE**

**NOTE**

Drug dose units default values are delineated in the following table:

<table>
<thead>
<tr>
<th>Drug amount entered as:</th>
<th>Drug will be converted to:</th>
<th>Example:</th>
</tr>
</thead>
<tbody>
<tr>
<td>micrograms</td>
<td>micrograms</td>
<td>500 mcg in 50 ml, Weight = no, Time units = Min [Conc] = 10 mcg/ml Drug dose is mcg/min</td>
</tr>
<tr>
<td>milligrams (where concentration is ≤ 10 mg/ml)</td>
<td>micrograms</td>
<td>500 mg in 50 ml, Weight = yes, Time units = Min [Conc] = 10000 mcg/ml Drug dose is mcg/kg/min</td>
</tr>
<tr>
<td>milligrams (where concentration is &gt; 10 mg/ml)</td>
<td>milligrams</td>
<td>1000 mg in 50 ml, Weight = yes, Time units = Min [Conc] = 20 mg/ml Drug dose is mg/kg/min</td>
</tr>
<tr>
<td>grams</td>
<td>milligrams</td>
<td>2 gm in 250 ml, Weight = no, Time units = Min [Conc] = 8 mg/ml Drug dose is mg/min</td>
</tr>
<tr>
<td>units (where concentration is ≥ 1 unit/ml)</td>
<td>units</td>
<td>25000 units in 250 ml, Weight = no, Time units = Hour, [Conc] = 100 units/ml Drug dose is units/hour</td>
</tr>
<tr>
<td>units (where concentration is &lt; 1 unit/ml)</td>
<td>milliunits</td>
<td>10 units in 1000 ml, Weight = no, Time units = Min, [Conc] = 10 milliunits/ml Drug dose is milliunits/min</td>
</tr>
</tbody>
</table>

If the default drug dose unit does not meet the requirement for the drug to be infused, press the control and use the controls to select an alternate drug dosing unit. Press to confirm.

13. Press to confirm the drug calculation dosing parameters or press to edit drug calculation parameters.
   - After 3 seconds *Enter Rate or Dose* displays
   - After 12 seconds audio prompt - sounds

Channel Information Display:

**NO CHANGE**

Central Information Display:

<table>
<thead>
<tr>
<th>Infusion Setup</th>
</tr>
</thead>
<tbody>
<tr>
<td>RATE</td>
</tr>
<tr>
<td>VMTL</td>
</tr>
<tr>
<td>DOSE</td>
</tr>
<tr>
<td>[Conc]</td>
</tr>
</tbody>
</table>

> Enter Rate or Dose
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

14. Press [Enter] or 
   • If rate, after 3 seconds "-> Enter Rate Value" displays 
   • If dose, after 3 seconds "-> Enter Dose Value" displays 
   • After 12 seconds audio prompt - sounds

15. Use numeric data entry or controls to enter either a rate or dose ([123] can be used to enter rate).
   • After 3 seconds "-> Enter VTBI Value" displays 
   • After 12 seconds audio prompt - sounds

16. Press 
   • After 3 seconds "-> Enter VTBI Value" displays 
   • After 12 seconds audio prompt - sounds

17. Use numeric data entry controls to enter VTBI value.
   • After 3 seconds "-> Press [Enter]" displays 
   • After 12 seconds audio prompt - sounds

DISPLAY RESPONSE

Channel Information Display: NO CHANGE
Central Information Display:
• If rate, RATE and 0 ml/hr are highlighted 
  or 
  • If dose, DOSE and 0 mcg/kg/min are highlighted

Channel Information Display: NO CHANGE
Central Information Display:
• Entered Rate value and calculated Dose value are displayed 
  or 
  • Entered Dose value and calculated Rate display

Channel Information Display: NO CHANGE
Central Information Display:
• VTBI and 0 ml are highlighted

Channel Information Display: NO CHANGE

<table>
<thead>
<tr>
<th>Infusion Setup</th>
</tr>
</thead>
<tbody>
<tr>
<td>RATE</td>
</tr>
<tr>
<td>VTBI</td>
</tr>
<tr>
<td>DOSE</td>
</tr>
<tr>
<td>[Conc]</td>
</tr>
</tbody>
</table>

> Press [Enter]

10. Attach the set to the patient's vascular access device following accepted hospital procedure.
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT

19. Press [Enter].

DISPLAY RESPONSE

Channel Information Display:
- Channel indicator - extinguishes
- INFUSING indicator - flashes
- Selected or calculated rate displays
- Selected or calculated dose scrolls
Central Information Display:
- Active infusion screen displays

During the infusion:
- Changes made to the rate result in corresponding changes to the drug dose.
- Changes made to the dose result in corresponding changes to the rate

Channel Information Display:
- Drug dose continues to scroll (unless drug dose display is set to "Temporary" in System Configuration)
Central Information Display:
- VTBI value decrements

Stopping and Saving a Drug Calculation Infusion:

   - After 3 seconds "Enter VTBI Value" displays
   - After 12 seconds audio prompt - sounds

   Channel Information Display:
   - Channel indicator - illuminates
   Central Information Display:
   - Drug Calculation Infusion Setup screen displays

2. Press [A].

   Channel Information Display:
   - Rate display - blanks
   - INFUSING indicator - extinguishes
   Central Information Display:
   - Enter Infusion Setup

   ![Infusion Setup Diagram]

   - Rate: 10.0 ml/hr
   - Select Infusion Program
   - Press ENTER to select program
   - Press OFF to clear program
   - Correct your mistake
   - > Press [Enter]


   Channel Information Display:
   - Channel displays - blank
   Central Information Display:
   - Active infusion screen displays, if other channel is operating; or Powerdown screen displays
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

To Edit a Drug Calculation Setup

WARNING

It is the responsibility of the user to adjust infusion rate, if required. Changing drug concentration (e.g. switching to a higher drug concentration) or patient weight may require adjustment of the infusion rate. Use extreme caution in procedure which may involve changing IV, contraindicating repriming existing line when drug concentration is changed.

Editing the setup parameters during a running drug calculation will result in a recalculation of the dosage. Rate will remain as programmed.

If Amount, Diluent or Time Unit parameters are changed, the following dialog box appears:

Drug concentration change recalculates dose. Rate remains as programmed. Adjust Rate/Dose if required. Re-prime line if necessary.
Press Enter to continue

If only weight is changed, the following dialog box appears:

Note: Weight change does not change rate. Dose recalculates based on new weight. Adjust Dose or Rate if required.
Press Enter to continue

Changing Channel Selection Before Completing Programming

NOTE

Prior to completing a program change, it is possible to exit one channel and program another. Upon starting another channel, the previous channel is automatically selected along with a dialog box that alerts the user to complete the program change.

The following dialog box appears:

- Press [to continue or [ to discard your previous edit.
- Complete programming and press [.

Channel A or B's program has not been completed.
Press ENTER to complete/confirm or Press CANCEL to clear program
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT          DISPLAY RESPONSE

To Infuse Using an Empty Container Detector (ECD)

1. Set up a primary infusion on any channel.

2. Connect an ECD to the appropriate ECD connector on the rear panel of the PC-2TX.
   - The appropriate channel indicator LED on the ECD will illuminate.

3. Attach the ECD to the drip chamber of the primary set.

4. Press \[\text{SETUP}\] then \[\text{0}\] or \[\text{1}\] to clear the VTBI value.

5. Press \[\text{SETUP}\] to select "ALL" or program a specific VTBI using the numeric data entry controls.

   Central Information Display:

<table>
<thead>
<tr>
<th>Infusion Setup</th>
</tr>
</thead>
<tbody>
<tr>
<td>RATE 125 mL/hr</td>
</tr>
<tr>
<td>COMPATIBLE</td>
</tr>
</tbody>
</table>

   > Press \[\text{SAVE}\]

6. Press \[\text{SETUP}\]

When the ECD senses an empty container:
- An audio prompt sounds
- "EMPTY CONTAINER - KVO" scrolls
- RATE display shows "1" or set rate if <1.0
- Channel ALARM indicator - flashes
- Channel INFUSING indicator - continues to flash.

To Select Anesthesia Mode

NOTE

Anesthesia mode is intended for use in the operating room where critical IV infusions are under constant surveillance by Anesthesia personnel. Anesthesia mode allows the user to PAUSE an infusion with no audible prompting or "walkaway" alarms associated with normal PC-2TX operation. It also decreases the number of steps required to restart a saved Drug Calculation program. Anesthesia mode must be enabled in the System Configuration in order to be selected.
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

**ACTION/PROMPT**

1. Power on the PC-2TX as previously described.

2. Press [ ].

   **Central Information Display:**
   
   ![System Options Menu]
   
   **NOTE**

   If "Anesthesia Mode" is displayed in half-tone on the System Options display, Anesthesia mode has not been enabled and is not available for use.

3. Press [ ].
   - After 3 seconds "> Press [ ] to confirm" displays
   - After 12 seconds audio prompt sounds

   **Central Information Display:**
   
   ![Sys Config Edit]

4. Use [ ] to select the "Yes" option.
   - After 3 seconds "> Press [ ] to confirm" displays
   - After 12 seconds audio prompt sounds

   **Central Information Display:**
   - "Yes" option is highlighted

5. Press [ ].

6. Press [ ].

   **Central Information Display:**
   - System option screen displays

   **Central Information Display:**
   - Infusion Setup or Active Infusion screen displays

   **NOTE**

   Anesthesia mode is automatically de-selected when the AC power cord is unplugged from AC outlet or the instrument is turned off during battery operation. It can also be de-selected using the procedure described above.
INDEPENDENT SETUP AND OPERATING PROCEDURES (continued)

ACTION/PROMPT                        DISPLAY RESPONSE

To Clear Alarms
1. Check the Channel Information Display
to determine the type of alarm condition.

2. Refer to the CHANNEL, CENTRAL
INFORMATION DISPLAY AND ALARM
RESPONSE PROCEDURES section in
this manual for the proper procedures for
responding to a specific alarm condition.

To Power Off the PC-2TX
1. Press \[A\] or \[B\] as appropriate.

2. Press \[\]

3. Repeat steps 1 and 2 until both channels
are stopped.

During the power off sequence:

NOTE

To interrupt the power off sequence, press
the PAUSE control prior to the count-down
timer in the central information display
reaching "1". To resume the infusion,
select the appropriate channel, confirm
Rate and VTBI, then press START and
verify that the channel operating indicator
is flashing.

Channel Information Display:
• All displays and indicators for
  selected channel - extinguish

Central Information Display:
• Selected channel display reverts
to un-programmed status.

Central Information Display:

Powering down in...
3 second(s)

• Time value decrements from 3 to
  1, then the PC-2TX powers down.
MONITOR OR COMPUTER CONTROL SETUP
AND OPERATING PROCEDURES

Introduction
The steps necessary to operate the PC-2TX in Monitor or Computer Control Operation
are described in the following section.

CAUTION

ONLY equipment that has been qualified to IEC 601-1 standards should be
connected to the PC-2TX’s RS-232-C Data Port and the connection should ONLY
be performed by qualified personnel.

To Establish PC-2TX/Host Computer Interface
1. Set computer communication parameters.

NOTE

Before the PC-2TX can be used in the Monitor or Computer Control Operation
conditions, the computer communication parameters must be set by hospital
technical personnel, both in the host computer and in the PC-2TX. Thorough
familiarity with independent operation of the PC-2TX is a prerequisite for
technical personnel responsible for configuring the pump/controller for remote
operation. The procedures for setting the computer communication
parameters for the PC-2TX are provided in the PC-2TX Maintenance Manual.
The procedures for setting the computer communication parameters for the
host computer are provided in the ALARIS Medical Systems C2 Programmer’s
Guide.

2. Connect the communication interface cable to the RS-232-C communication DATA
PORT connector (rear panel) of the PC-2TX and to the host computer.

NOTE

Before the PC-2TX can be set up for either Monitor or Computer Control
Operation, the communication interface cable must be connected to the
RS-232-C communication DATA PORT connector on the rear panel of the
PC-2TX. The technical data necessary to interface the host computer interface
cable to the PC-2TX’s RS-232-C Communication DATA PORT connector is
provided in the PC-2TX Maintenance Manual.

When power is then applied to the PC-2TX’s circuits, the MONITOR indicator will
illuminate.

ACTION/PROMPT DISPLAY RESPONSE

To Change PC-2TX Operating Condition from Independent to MONITOR
1. Connect the communication interface cable to the RS-232-C communications
DATA PORT connector on the rear panel.

The MONITOR indicator illuminates.
MONITOR OR COMPUTER CONTROL SETUP
AND OPERATING PROCEDURES (continued)

To Change PC-2TX Operating Condition from MONITOR to Independent

1. Disconnect the communication interface cable from the RS-232-C communications DATA PORT connector on the rear panel.
   The MONITOR indicator extinguishes.

To Change PC-2TX Operating Condition from MONITOR to COMPUTER CONTROL

1. Press ⬆️.

   Central Information Display:
   ![Control Options]
   ![Control Options]
   ![Control Options]
   ![Control Options]
   ![Control Options]
   ![Control Options]
   ![Control Options]
   ![Control Options]
   ![Control Options]

   NOTE
   If "Computer Control" is displayed in half-tone on the Systems Options display, Computer Control is not enabled and is not available for use.

2. Press ⬆️.
   - After 3 seconds "Select Option/Cancel" displays
   - After 12 seconds audio prompt sounds

   Central Information Display:
   ![Computer Control Options]
   ![Computer Control Options]
   ![Computer Control Options]
   ![Computer Control Options]
   ![Computer Control Options]

3. Select "Yes" using the ⬆️ controls.

4. Press ⬆️.
   - COMPUTER CONTROL and Computer Control indicator - flash
   - The PC-2TX keypad is inoperative, except for the ⬆️ controls

   Central Information Display:
   ![Computer Control Keypad Options]
   ![Computer Control Keypad Options]
   ![Computer Control Keypad Options]
   ![Computer Control Keypad Options]
   ![Computer Control Keypad Options]
   ![Computer Control Keypad Options]
MONITOR OR COMPUTER CONTROL SETUP
AND OPERATING PROCEDURES (continued)

To Change PC-2TX Operating Condition from COMPUTER CONTROL to MONITOR

1. Press or .
   - After 3 seconds "> Select Option/Cancel" displays

2. Select the "Yes" option by using the controls.

3. Press .
   - Infusions in progress under computer control continue as programmed

Central Information Display:

> Select Option/Cancel

Central Information Display

- "Yes" option is highlighted

Central Information Display:

- MONITOR indicator - illuminates

To Power Off the PC-2TX in MONITOR Operation

1. Press or as appropriate.

2. Press .

3. Repeat steps 1 and 2 until both channels are stopped.

During the power off sequence:

NOTE
To interrupt the power off sequence, press the PAUSE control prior to the count-down timer in the central information display reaching "1". To resume the infusion, select the appropriate channel, confirm Rate and VTBI, then press START and verify that the channel operating indicator is flashing.

Channel Information Display:

- All displays and indicators for selected channel - extinguish

Central Information Display:

- Selected channel display reverts to un-programmed status.

Central Information Display:

Powering down in...

3 second(s)

- Time value decrements from 3 to 1, then the PC-2TX powers down.
MONITOR OR COMPUTER CONTROL SETUP
AND OPERATING PROCEDURES (continued)

To Power Off the PC-2TX in COMPUTER CONTROL Operation
1. Repeat procedure listed above under “To Change PC-2TX Operation from
   COMPUTER CONTROL to MONITOR”
2. Press \( \text{A} \) or \( \text{B} \) as appropriate.
3. Press \( \text{C} \).

   Channel Information Display:
   - All displays and indicators for selected channel - extinguish

   Central Information Display:
   - Selected channel display reverts to un-programmed status.

4. Repeat steps 1 and 2 until both channels are stopped.

During the power off sequence:

   NOTE

   To interrupt the power off sequence, press the PAUSE control prior to the
   count-down timer in the central information display reaching "1". To
   resume the infusion, select the appropriate channel, confirm Rate
   and VTBI, then press START and verify that the channel operating
   indicator is flashing.

   Central Information Display:

   | Powering down in... | 3 seconds |

   - Time value decrements from 3 to 1, then the PC-2TX powers down.

The operating procedures listed below are identical for both MONITOR operation and Independent
operation. Refer to the Independent Setup section of this manual for the detailed descriptions.

- To Set Up a Primary Infusion with the
  Volume/Time Infusion Option Enabled
- To Adjust Central Information Display Contrast
- To Pause an Infusion
- To Stop a Primary Infusion
- To Change Rate or VTBI During Infusion
- To Titrate Rate
- To Change the Pressure Limits (PCS Mode
  Control Unlocked)
- To Restart an Infusion Following an “INFUSION
  COMPLETE - KVO” or “EMPTY CONTAINER -
  KVO” Advisory
- To View Primary, Secondary and Total Volume
  Infused on both Channels Simultaneously
- To Clear Primary, Secondary and Total Volume
  on both Channels Simultaneously
- To View Primary, Secondary and Total Volume
  Infused on Selected Channel
- To Clear Primary, Secondary and Total Volume
  Infused on Selected Channel
- To Set Up a Secondary (Piggyback) Infusion with
  Dual Rates
- To Set Up a Secondary (Piggyback) Infusion with
  Dual Rates and the Volume/Time infusion
  Option Enabled
- To Change Primary Infusion Parameters During a
  Secondary Infusion
- To Stop a Secondary Infusion and Return to the
  Primary Infusion
- To Change the Time of Day
- To Set Up a Delayed Start Infusion
- To Set Up a Delayed Start Secondary Infusion
- To Set Up a Multidose Infusion
- To Use Drug Calculation
- To Infuse using an Empty Container Detector
  (ECD)
- To Select Anesthesia Mode
- To Clear Alarms

During COMPUTER CONTROL operation, these procedures are performed through the host
computer. Appropriate computer control procedures are described in the ALARIS Medical Systems
C2 Programmer’s Guide.
The Channel and Central Information Displays display four types of information: advisories, prompts, alarms, and malfunctions.

The characteristics of the accompanying audio sounds are as follows:

<table>
<thead>
<tr>
<th>Type</th>
<th>Sound</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>switchover</td>
<td>six short beeps</td>
<td>variable volume; can be silenced and disabled in the SYSTEM CONFIGURATION</td>
</tr>
<tr>
<td>prompt</td>
<td>one short beep every two seconds</td>
<td>variable volume; can be silenced</td>
</tr>
<tr>
<td>key click</td>
<td>one short beep</td>
<td>fixed minimum volume; cannot be silenced; can be disabled via the SYSTEM CONFIGURATION</td>
</tr>
<tr>
<td>illegalkeypress</td>
<td>two short beeps</td>
<td>variable volume; cannot be silenced, can be disabled via SYSTEM CONFIGURATION</td>
</tr>
<tr>
<td>advisory</td>
<td>one short beep every fifteen seconds</td>
<td>variable volume; can be silenced for ~2 minutes</td>
</tr>
<tr>
<td>alarm</td>
<td>three selectable profiles (selectable in System Configuration)</td>
<td>variable volume; can be silenced for ~2 minutes</td>
</tr>
<tr>
<td>malfunction (software detected)</td>
<td>pairs of long beeps</td>
<td>fixed 75 decibel volume; cannot be silenced</td>
</tr>
<tr>
<td>malfunction (hardware detected)</td>
<td>constant audio tone</td>
<td>fixed 75 decibel volume; cannot be silenced</td>
</tr>
</tbody>
</table>
An **ADVISORY** is a sequence of audio and/or visual signals to advise the user of the operating status of the PC-2TX. The audio may be silenced for approximately 2 minutes by pressing the SILENCE control.

<table>
<thead>
<tr>
<th>Advisory</th>
<th>Meaning</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFUSION COMPLETE - KVO</td>
<td>VTB1 has been infused; PC-2TX is infusing at KVO rate.</td>
<td>Stop channel, or set up new infusion.</td>
</tr>
<tr>
<td>Audio: prompt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous scroll in channel information display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMPTY CONTAINER - KVO</td>
<td>Empty container detected by ECD before programmed VTB1 delivered, or when “ALL” has been used as the VTB1 parameter, PC-2TX is infusing at KVO rate. LCD plugged into PC-2TX, but not attached to drip chamber.</td>
<td>Replace IV container, stop channel or set up a new infusion.</td>
</tr>
<tr>
<td>Audio: prompt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous scroll in channel information display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DELAYED START COMPLETE</td>
<td>The delayed start infusion has been infused.</td>
<td>Stop channel or set up a new infusion.</td>
</tr>
<tr>
<td>Audio: none, unless callback was selected</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous scroll in channel information display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MULTIDOSE COMPLETE</td>
<td>All doses of the multidose infusion have been infused.</td>
<td>Stop channel or set up a new infusion.</td>
</tr>
<tr>
<td>Audio: none</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous scroll in channel information display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOW BATTERY</td>
<td>Low battery threshold detected. Remaining battery operational life is limited.</td>
<td>Connect power cord to an external AC power source; alarm will be silenced.</td>
</tr>
<tr>
<td>Audio: prompt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display in central information display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance Mode</td>
<td>Instrument powered up in the Maintenance mode.</td>
<td>DO NOT USE ON PATIENT. Check with Biomedical Department.</td>
</tr>
<tr>
<td>Audio: key click</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display in central information display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paused</td>
<td>PAUSE control has been pressed.</td>
<td>Press START control to resume infusion, or press CHANNEL OFF to stop infusion.</td>
</tr>
<tr>
<td>Audio: advisory, then prompt after 2 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display in central information display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery Replacement</td>
<td>The pump has detected a battery that is no longer capable of sustaining a charge.</td>
<td>Replace with an operable pump as soon as possible. Send pump to Biomedical Department to have batteries checked.</td>
</tr>
<tr>
<td>Advisory</td>
<td>Meaning</td>
<td>Response</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td><strong>Replace Battery</strong></td>
<td>The pump has detected a battery that is no longer capable of sustaining a charge.</td>
<td>Replace with an operable pump as soon as possible. Send pump to Biomedical Department to have batteries checked.</td>
</tr>
<tr>
<td>Audio: On AC - None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On DC - Prompt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>central information display</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PAUSE</strong></td>
<td>PAUSE control has been pressed.</td>
<td>Press START control to resume infusion, or press CHANNEL OFF to stop infusion.</td>
</tr>
<tr>
<td>Audio: advisory, then prompt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>after 2 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous scroll in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>channel information display</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Panel/Keypad Locked</strong></td>
<td>Audio control has been pressed and held for 3 seconds to initiate tamper-resistant feature.</td>
<td>None. (Repeat to cancel tamper-resistance).</td>
</tr>
<tr>
<td>Audio: key click</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display for 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>seconds in central information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>display</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Panel/Keypad Unlocked</strong></td>
<td>Audio control has been pressed and held for 3 seconds to deactivate tamper-resistant feature.</td>
<td>None. (Repeat to re-initiate tamper-resistance).</td>
</tr>
<tr>
<td>Audio: key click</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display for 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>seconds</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LOW FLOW</strong></td>
<td>Flow has slowed due to back pressure equaling container height in Controller mode. An occlusion alarm will occur within one minute.</td>
<td>Check tubing for restriction, raise container, press START, or change to Pump Delivery mode (if PCS mode control unlocked).</td>
</tr>
<tr>
<td>Audio: advisory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous scroll in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>channel information display</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Start = XX:XX</strong></td>
<td>Delayed start program initiated. XX:XX is the programmed start time.</td>
<td>None. When current time = start time, the infusion will start.</td>
</tr>
<tr>
<td>Audio: none</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SECONDARY</strong></td>
<td>A secondary infusion is in progress on the affected channel.</td>
<td>None. When secondary VTBI = &quot;0&quot;, the infusion will revert to the programmed primary parameters.</td>
</tr>
<tr>
<td>Audio: none</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous scroll in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>channel information display</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dose n = XXX:XX</strong></td>
<td>Multidose infusion is either infusing or in standby. Dose n = the sequential number of the next (if in standby) or currently infusing dose. XX:XX is the programmed start time for the next dose.</td>
<td>None. Infusion will proceed as programmed. Press appropriate channel select to review infusion status.</td>
</tr>
<tr>
<td>Audio: none</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Anesthesia Mode-Pause</strong></td>
<td>PAUSE control was pressed while Anesthesia mode was selected.</td>
<td>Select channel, then press START to resume or press CHANNEL OFF to stop infusion.</td>
</tr>
<tr>
<td>Audio: none</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous scroll in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>channel information display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advisory</td>
<td>Meaning</td>
<td>Response</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>--------------------------------------------------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>Powering down in X second(s)</td>
<td>The CHANNEL OFF control has been pressed.</td>
<td>None. To stop power down, press any control except POWER ON.</td>
</tr>
<tr>
<td>Audio: prompt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: timed display in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>central information display</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A PROMPT is an audio and/or visual signal appearing on the bottom line of the central information display to the user to perform some action. The audio may be silenced for 12 seconds by pressing the SILENCE control.

<table>
<thead>
<tr>
<th>Prompt</th>
<th>Meaning</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select Option/Cancel</td>
<td>The OPTIONS/EDIT key was pressed.</td>
<td>Select the appropriate System or Channel option. Press CANCEL to exit menu.</td>
</tr>
<tr>
<td>24 Hour Limit Exceeded</td>
<td>A combination of Time Interval and Number of Doses that would exceed the maximum allowable 24 hour Multidose infusion was entered.</td>
<td>Reenter an appropriate combination of Time Interval and Number of Doses to result in a total duration of 24 hours or less.</td>
</tr>
<tr>
<td>Enter Rate Value</td>
<td>Begins following press of POWER ON and CHANNEL SELECT controls, or if START control is pressed with rate set to &quot;0&quot;.</td>
<td>Press RATE control and enter rate.</td>
</tr>
<tr>
<td>Enter VTBI Value</td>
<td>Begins following press of VTBI control, or if START control is pressed with VTBI set to &quot;0&quot;.</td>
<td>Press VTBI control and enter VTBI.</td>
</tr>
<tr>
<td>Press START</td>
<td>Begins approximately 3 seconds after last press of data entry controls if neither parameter is zero, or approximately 12 seconds after an alarm is canceled, or approximately 2 minutes after PAUSE is pressed.</td>
<td>Press START control.</td>
</tr>
<tr>
<td>Select Channel</td>
<td>Begins when attempt is made to set parameters or start infusion prior to selecting a channel.</td>
<td>Press appropriate CHANNEL SELECT control.</td>
</tr>
<tr>
<td>Enter All Parameters</td>
<td>The START control was pressed prior to entering valid parameters.</td>
<td>Follow prompts and enter valid parameters for all data entry fields.</td>
</tr>
<tr>
<td>Enter Start Time</td>
<td>The TIME control was pressed after entering rate and VTBI parameters.</td>
<td>Press ENTER to confirm the current data entry, and move to the next programming step.</td>
</tr>
<tr>
<td>Prompt</td>
<td>Meaning</td>
<td>Response</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Enter Duration</strong></td>
<td>Begins after entering VTBI in a volume/time infusion.</td>
<td>Time values will change the rate. Enter the desired duration of the infusion or clear to reprogram.</td>
</tr>
<tr>
<td>Audio: prompt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Enter Dose Interval</strong></td>
<td>Part of multidosing infusion set up sequence.</td>
<td>Enter the desired dose interval (range 1-24 hours).</td>
</tr>
<tr>
<td>Audio: prompt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dose Interval too Short</strong></td>
<td>A multidose interval was entered that is less than the time required to deliver the programmed dose.</td>
<td>Enter an appropriate dosing interval for the Rate and VTBI/dose setting.</td>
</tr>
<tr>
<td>Audio: prompt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous scroll for 3 seconds</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Enter Number of Doses</strong></td>
<td>Part of multidosing infusion set up sequence.</td>
<td>Enter the desired number of doses (range 1-24).</td>
</tr>
<tr>
<td>Audio: prompt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Enter Drug Amount</strong></td>
<td>Part of drug calculation infusion set up sequence.</td>
<td>Enter the amount of drug added to the IV fluid container.</td>
</tr>
<tr>
<td>Audio: prompt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Select Unit of Measure</strong></td>
<td>Part of drug calculation infusion set up sequence.</td>
<td>Select the appropriate units for the drug added to the container (gm, mg, mcg, or units).</td>
</tr>
<tr>
<td>Audio: prompt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Enter Diluent Volume</strong></td>
<td>Part of drug calculation infusion set up sequence.</td>
<td>Enter the volume of the drug container in milliliters.</td>
</tr>
<tr>
<td>Audio: prompt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dose Based on Pt. Wt.?</strong></td>
<td>Part of drug calculation infusion set up sequence.</td>
<td>Select &quot;Yes&quot; or &quot;No&quot; based on whether patient weight is required.</td>
</tr>
<tr>
<td>Audio: prompt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Enter Patient Weight</strong></td>
<td>Part of drug calculation infusion set up sequence.</td>
<td>Enter patient weight in kilograms (kg).</td>
</tr>
<tr>
<td>Audio: prompt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Select Time Units</strong></td>
<td>Part of drug calculation infusion set up sequence.</td>
<td>Select appropriate time interval for drug dosing (minutes or hours).</td>
</tr>
<tr>
<td>Audio: prompt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Enter Rate or Dose</strong></td>
<td>Part of drug calculation infusion set up sequence.</td>
<td>Press RATE and enter infusion rate, or press DOSE and enter the desired drug dosage.</td>
</tr>
<tr>
<td>Audio: prompt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Max Rate Exceeded</strong></td>
<td>Flow rate parameters result in an infusion rate that exceed the System Configuration's MAX RATE option have been entered.</td>
<td>Enter appropriate flow rate parameters.</td>
</tr>
<tr>
<td>Audio: illegal key</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prompt</td>
<td>Meaning</td>
<td>Response</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>-----------------------------------------</td>
</tr>
<tr>
<td>Press Enter to Confirm</td>
<td>The current parameter entry(s) must be confirmed to enable proceeding to the next programming step.</td>
<td>Press ENTER.</td>
</tr>
<tr>
<td>Audio: prompt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reenter VTBI Value</td>
<td>A VTBI value of ≥1000 mL was entered with a fractional rate value.</td>
<td>Enter a VTBI value &lt;1000 mL or change rate to a non-fractional value.</td>
</tr>
<tr>
<td>Audio: illegal key</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Press 1-5 or 0 or Cancel</td>
<td>The desired option can be selected by pressing the appropriate selection number or pressing 0 to move to the next menu screen.</td>
<td>Select desired entry or Press CANCEL to exit screen.</td>
</tr>
<tr>
<td>Audio: illegal key</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reenter VTBI Value</td>
<td>A VTBI value of ≥1000 mL was entered with a fractional rate value.</td>
<td>Enter a VTBI value &lt;1000 mL or change rate to a non-fractional value.</td>
</tr>
<tr>
<td>Audio: illegal key</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enter Dose Value</td>
<td>Dose control was pressed during a Drug Calculation.</td>
<td>Enter the desired medication dose.</td>
</tr>
<tr>
<td>Audio: prompt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dose Interval &gt;24 hours</td>
<td>During Multidose setup a dose interval &gt;24 hours was entered.</td>
<td>Enter a dose interval that is &lt;24 hours.</td>
</tr>
<tr>
<td>Audio: illegal key</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display for 3 seconds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dose Interval too Short</td>
<td>During a Multidose setup a dose interval was entered that was &lt; dose delivery time.</td>
<td>Enter a dose interval that is ≥ VTBI/rate.</td>
</tr>
<tr>
<td>Audio: illegal key</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display for 3 seconds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Invalid Minute Entry</td>
<td>During a Delayed Start or Multidose setup, a start time or current time entry &gt;59 minutes was selected.</td>
<td>Enter a minute time value ≤ 59 minutes.</td>
</tr>
<tr>
<td>Audio: illegal key</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Invalid Hour Entry</td>
<td>During a Delayed Start or Multidose setup, a start time or current time of day &gt;23 (24 hour clock) was entered.</td>
<td>Enter an hour value ≤ 23 hours (military) or ≤ 11 hours (AM/PM).</td>
</tr>
<tr>
<td>Audio: illegal key</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P/C/S Mode Locked</td>
<td>Channel Option #4 was selected when the P/C/S Mode was locked.</td>
<td>If PCS Mode change is desired contact Biomedical Department.</td>
</tr>
<tr>
<td>Audio: illegal key</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display for 3 seconds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prompt</td>
<td>Meaning</td>
<td>Response</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Stop Infusion First</td>
<td>A mode of operation that is incompatible with the current mode of</td>
<td>Select #5 - stop infusion, to stop the current infusion prior to selecting a different operating mode.</td>
</tr>
<tr>
<td>Audio: illegal key</td>
<td>operation was selected from the channel options menu.</td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confirm Time-of-Day</td>
<td>Appears the first time that the Time control is pressed in Delayed</td>
<td>Confirm that the time-of-day displayed is correct. If not, enter correct time of day.</td>
</tr>
<tr>
<td>Audio: prompt</td>
<td>Start or Multidose setup following instrument power up.</td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mode Not Available</td>
<td>A selection of a disabled or unavailable option was made from the</td>
<td>If a disabled option is required, contact Biomedical Department to enable desired option.</td>
</tr>
<tr>
<td>Audio: illegal key</td>
<td>Channel Options menu.</td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use ➪ ➩ to adjust</td>
<td>The display contrast option was selected from the Systems Option menu.</td>
<td>Use the ➪ or ➩ controls to adjust the central information display for optimum viewing, then press ENTER.</td>
</tr>
<tr>
<td>Audio: none</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max Dose Exceeded</td>
<td>In Drug Calculation, a dose that exceeds the displayed limits was</td>
<td>Enter a lower dose or rate value. Verify correct entry of drug amount and diluent volume.</td>
</tr>
<tr>
<td>Audio: illegal key</td>
<td>entered.</td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min Dose Exceeded</td>
<td>In Drug Calculation, a dose that is less than the allowable limit was</td>
<td>Enter a higher rate or dose value. Verify correct entry of drug amount and diluent volume.</td>
</tr>
<tr>
<td>Audio: illegal key</td>
<td>entered.</td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Invalid Dose</td>
<td>In Drug Calculation, the patient weight input was changed so significantly that the dose/rate on another channel would be forced out of allowable range.</td>
<td>Enter an appropriate patient weight value.</td>
</tr>
<tr>
<td>Audio: illegal key</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Invalid Rate</td>
<td>In Drug Calculation, a rate that is less than 0.01 mL/hr was entered.</td>
<td>Enter a higher rate or dose value. Verify correct entry of drug amount and diluent volume.</td>
</tr>
<tr>
<td>Audio: illegal key</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check Amount and Diluent</td>
<td>In Drug Calculation, a combination of drug amount and diluent volume were entered that resulted in an invalid drug concentration.</td>
<td>Enter appropriate drug amount and diluent volume values.</td>
</tr>
<tr>
<td>Prompt</td>
<td>Meaning</td>
<td>Response</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Enter Fractional Value</td>
<td>During a Secondary infusion setup, a Secondary rate value &gt;100 mL/hr was entered when the Primary rate was fractional.</td>
<td>Rate value will display zero. Enter a fractional Secondary rate value or change the Primary rate value to a non-fractional value.</td>
</tr>
<tr>
<td>Delay Mode is Active</td>
<td>The Time-of-Day option was selected from the Systems Options menu while a Delayed Start or Multidose infusion was active.</td>
<td>Time-of-Day cannot be changed unless all Delayed Start and Multidose infusions are stopped.</td>
</tr>
<tr>
<td>Channel in KVO</td>
<td>An attempt was made to setup a Secondary infusion while the Primary infusion was in KVO.</td>
<td>Reset the Primary rate and VTBI values within the normal operating range.</td>
</tr>
<tr>
<td>&gt;24 hr Limit Exceeded</td>
<td>A Multidose rate and VTBI/dose that results in an infusion interval &gt;24 hours.</td>
<td>Change rate and/or VTBI values such that the time required for infusion is &lt;24 hours.</td>
</tr>
<tr>
<td>Press OFF or ENTER</td>
<td>A Multidose or Drug Calculation infusion has been turned off. Pressing ENTER retains the infusion program; pressing OFF deletes the program.</td>
<td>Press ENTER retains the program; pressing OFF deletes the program and returns the channel to normal operation.</td>
</tr>
<tr>
<td>Delay Exceeds 8 Hours</td>
<td>A Start Time &gt;8 hours ahead of current time was selected for a Multidose infusion.</td>
<td>Enter a Start Time 8 hours or less ahead of current time-of-day.</td>
</tr>
<tr>
<td>Press CANCEL to Exit</td>
<td>The Systems Options menu was accessed.</td>
<td>Select an option or press CANCEL to return to the main display menu.</td>
</tr>
<tr>
<td>Press ENTER to Continue</td>
<td>The channel was selected following a completed Multidose infusion.</td>
<td>To continue the same infusion, press ENTER to gain access to the Multidose infusion setup screen. Enter the desired Start time and press START.</td>
</tr>
</tbody>
</table>
An **ALARM** is an audio and visual signal to the user that a potentially unsafe condition is present. Immediate action is required. The audio may be silenced except during a "FLO-STOP" OPEN/CLOSE DOOR condition for approximately 2 minutes by pressing the SILENCE control.

<table>
<thead>
<tr>
<th>Alarm</th>
<th>Meaning</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CHECK ECD</strong></td>
<td>START control pressed with VTBI set to &quot;ALL&quot; and ECD not connected, or ECD has been disconnected during an &quot;ALL&quot; infusion, or ECD has failed. Infusion stops.</td>
<td>Connect or replace ECD, then press START control.</td>
</tr>
<tr>
<td>Audio: alarm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous scroll, channel alarm indicator flashes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CHECK IV SET</strong></td>
<td>Administration set not properly installed. Infusion is not started on affected channel.</td>
<td>Close roller clamp, remove and reinstall administration set, close door, open roller clamp.</td>
</tr>
<tr>
<td>Audio: alarm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous scroll, channel alarm indicator flashes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DOOR OPEN</strong></td>
<td>Door was opened during an infusion. Infusion stops on affected channel.</td>
<td>Close door, press appropriate CHANNEL SELECT control, then press START control.</td>
</tr>
<tr>
<td>Audio: alarm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous scroll, channel alarm indicator flashes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RESTART CHANNEL</strong></td>
<td>Door was opened during an infusion and then closed. Infusion stops on affected channel.</td>
<td>Press the appropriate CHANNEL SELECT control, then press START control.</td>
</tr>
<tr>
<td>Audio: alarm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous scroll, channel alarm indicator flashes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AIR-IN-LINE</strong></td>
<td>Air has been detected in set during an infusion. Infusion stops on affected channel.</td>
<td>Ensure tubing is properly installed in air-in-line detector. If air is present, clear air from administration set. Press appropriate CHANNEL SELECT control, then press START control.</td>
</tr>
<tr>
<td>Audio: alarm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous scroll, channel alarm indicator flashes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>OCCLUDED-PATIENT SIDE</strong></td>
<td>Increased back pressure sensed while infusing in the pump delivery mode. Infusion stops on affected channel.</td>
<td>Clear occlusion, press appropriate CHANNEL SELECT control, then press START control.</td>
</tr>
<tr>
<td>Audio: alarm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous scroll, channel alarm indicator flashes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>OCCLUSION</strong></td>
<td>Occlusion is detected on either fluid or patient side while infusing in Controller Delivery mode. Infusion on affected channel stops.</td>
<td>Clear occlusion or raise the fluid container. Press the appropriate CHANNEL SELECT control, then press the START control. (If the occlusion recurs, open and close door. Press CHANNEL SELECT and START control.)</td>
</tr>
<tr>
<td>Audio: alarm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous scroll, channel alarm indicator flashes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alarm</td>
<td>Meaning</td>
<td>Response</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>PARTIAL OCCLUSION-FLUID SIDE</strong></td>
<td>Partial upstream occlusion detected while infusing in Pump Delivery mode. Infusion on affected channel stops.</td>
<td>Remove cause of reduced flow in fluid side of administration set, press appropriate CHANNEL SELECT control, then press START control.</td>
</tr>
<tr>
<td>Audio: alarm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous scroll,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>channel alarm indicator flashes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>OCCLUSION-FLUID SIDE</strong></td>
<td>Upstream occlusion sensed while infusing in pump delivery mode. Infusion on affected channel stops.</td>
<td>Clear occlusion in fluid side of administration set, press appropriate CHANNEL SELECT control, then press START control.</td>
</tr>
<tr>
<td>Audio: alarm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous scroll,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>channel alarm indicator flashes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>&quot;FLO-STOP&quot; OPEN/CLOSE DOOR</strong></td>
<td>Flo-Stop open (in free-flow position) with door open.</td>
<td>Close roller clamp on set or close door and resume infusion by pressing appropriate CHANNEL SELECT control, then pressing START control. (If alarm occurs when the door is closed, replace PC-2TX with operable unit.)</td>
</tr>
<tr>
<td>Audio: alarm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: continuous scroll,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>channel alarm indicator flashes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>BATTERY DISCHARGED</strong></td>
<td>Low battery voltage detected. Infusions PAUSE on all currently operating channels.</td>
<td>Connect AC power cord to power source and wait for &quot;PAUSED&quot; to appear in the Central Display. Select each channel and press START to resume the infusion(s), or press the CHANNEL OFF control to power down the PC-2TX.</td>
</tr>
<tr>
<td>Audio: malfunction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual: Channel Display:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Rate Display flashes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• &quot;PAUSE&quot; scrolls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• ALARM and STANDBY indicators flash</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central Display:</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>BATTERY DISCHARGED</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALL CHANNELS PAUSED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLUG INTO TO RESUME</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRESS OFF TO POWER DOWN</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A **MALFUNCTION** is a signal to alert the operator that a failure has been detected. Immediate action is required. The audio cannot be silenced without powering off the affected channel(s).

<table>
<thead>
<tr>
<th>Malfunction</th>
<th>Meaning</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYSTEM MALFUNCTION</td>
<td>A software-detected malfunction has occurred. Depending on the type of</td>
<td>Press CHANNEL OFF control to turn off the</td>
</tr>
<tr>
<td>Audio: malfunction</td>
<td>malfunction, infusion stops on the affected channel or all channels.</td>
<td>PC-2TX. Replace with an operational instrument.</td>
</tr>
<tr>
<td>Visual:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Channel Display:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Rate displays flash &quot;- - -&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Channel ALARM and STANDBY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>indicators flash</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central Display:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>For Battery Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>For AC Power Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CENTRAL DISPLAY FAILURE</td>
<td>A software-detected malfunction has occurred on the central display.</td>
<td>Press CHANNEL OFF control to turn off the</td>
</tr>
<tr>
<td>Audio: malfunction</td>
<td>Infusion stops on all channels.</td>
<td>PC-2TX. Replace with an operational instrument.</td>
</tr>
<tr>
<td>Visual:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Channel Display:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Previous Infusion rate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Channel ALARM and STANDBY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>indicators flash</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central Display:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Displayed data may be</td>
<td></td>
<td></td>
</tr>
<tr>
<td>corrupted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scrolling Display:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Stops scrolling, display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>data will be fixed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SPECIFICATIONS

Detailed specifications will be available in the PC-2TX Maintenance Manual. ALARIS Medical Systems reserves the right to change specifications without prior notice.

Operating Principle: Linear peristalsis

Dimensions: 10.8" x 11.8" x 7.3"
(27.4cm x 30.0cm x 18.5cm)

Weight: 18.0 lbs. (8.2 kg)

Power Requirements: 90-132 VAC, Current draw 0.45A nominal, 54 watts, fused at 0.4A, 50/60 Hz, 3 wire, single φ

Battery Operation: With new, fully charged batteries, approximately 8 hours with one channel operating at 125 mL/hr before a "BATTERY DISCHARGE" message.

Electrical Leakage: Less than 100 microamps

Rate Selections: 0.1-999 mL/hr

Note: Recommended maximum rate in the Controller Mode is 500 mL/hr.

Volume-To-Be-Infused Selections:
0.1-9999 mL

KVO (Keep Vein Open) Rate:
1 mL/hr if set rate is 1 mL/hr or above; or set rate, if rate is 0.9 mL/hr or below

Occlusion Pressure:
Controller mode Container height ±12" (±30 cm)

Pump mode 10±2 psli (517±103 mmHg) for rates above 30 mL/hr. For rates of 30 mL/hr and below, the occlusion pressure will be less than 10 psi, and is rate-dependent.

Selectable mode 25 - 517 mmHg in 25 mmHg increments to 500 mmHg

Advisories:
INFUSION COMPLETE - KVO, EMPTY CONTAINER-KVO, DELAYED START COMPLETE, MULTIDOSE COMPLETE, LOW BATTERY, Maintenance Mode, PAUSE, Paused, Powering Down In X Seconds, Panel/Keypad Locked, Panel/Keypad Unlocked, LOW FLOW, START = XX:XX, SECONDARY, DOSE N = XX:XX and ANESTHESIA MODE - PAUSE, Replace Battery, Battery Replacement.
Prompts: Select Option/Cancel, 24 Hour Limit Exceeded, Enter Rate Value, Enter VTBI Value, Press START, Select Channel, Enter All Parameters, Enter Start Time, Enter Dose Interval, Enter Duration, Dose Interval Too Short, Enter Number of Doses, Enter Drug Amount, Select Unit of Measure, Enter Diluent Volume, Dose Based on Pt. Wt.?, Enter Patient Weight, Select Time Units, Enter Rate or Dose, Max Rate Exceeded, Press ENTER to Confirm, Press 1-5 or or Cancel, Re-enter VTBI Value, Enter Dose Value, Dose Interval >24 Hours, Invalid Minute Entry, Invalid Hour Entry, P/C/S Mode Locked, PRI/SEC Rate Mismatch, Stop Infusion First, Confirm Time-of-Day, Mode Not Available, Use to Adjust, Max Dose Exceeded, Min Dose Exceeded, Invalid Dose, Invalid Rate, Check Amount and Diluent, Enter Fractional Value, Delay Mode is Active, Channel in KVO, >24 Hr Limit Exceeded, Press OFF or ENTER, Delay Exceeds 8 Hours, Press CANCEL to Exit and Press ENTER to Continue.

Alarms CHECK ECD, CHECK IV SET, DOOR OPEN, RESTART CHANNEL, AIR-IN-LINE, OCCLUSION-PATIENT SIDE, OCCLUSION, PARTIAL OCCLUSION-FLUID SIDE, OCCLUSION-FLUID SIDE, "FLO-STOP" OPEN/CLOSE DOOR and BATTERY DISCHARGED.

Malfunctions System Malfunction, Channel Malfunction, Central Display Failure, Rate Display Failure, Audio Failure and Hardware-Detected Malfunction.

Air-in-Line Detection: Ultrasonic

Secondary (Piggyback): Dual rate programmable

Nurse Call Feature: Activates an externally powered system when any alarm, malfunction, PRESS START prompt, or INFUSION COMPLETE KVO, EMPTY CONTAINER KVO, or LOW BATTERY advisory is issued by PC-TX software. Requires a DIN plug with 6 pins at 240° (Switchcraft 12GM6M or equivalent) for proper mechanical interface.

RS-232-C Communications Data Port Connector: Electronic Industry Association (EIA) Standard requires a standard 9-pin sub-miniature male mating connector with a standard screwlock backshell with jack screws for proper mechanical interface.

Recommended Environmental Operating and Storage Conditions:
- Operating Temperature: +5°C to +40°C
- Storage Temperature: -30°C to +70°C
- Operating/Storage Humidity: 0% to 95% Relative at +35°C
BATTERY CARE AND MAINTENANCE

The IMED GEMINI PC-2TX is equipped with a 6 volt, 12 amp-hour lead acid battery. It is charging whenever the instrument is plugged into a 110 volt AC receptacle. The life expectancy of the battery is dependent on the amount of use, the depth of discharge, and the state of the charge that is maintained. Generally, the battery will have the longest life (recommended replacement = two years) if the instrument is plugged in, battery use is infrequent, and depth of discharge is minimal. Heavy use of battery power and insufficient battery charge cycles will significantly decrease the life of the battery.

The battery capacity should be checked at least once every twelve months. Refer to the PC-2TX Maintenance Manual for test and replacement procedures.

BATTERY REPLACEMENT SHOULD BE CONDUCTED BY QUALIFIED SERVICE PERSONNEL.

The quality of the battery is also a significant factor in determining battery life and runtime. The PC-2TX is originally manufactured with a Panasonic LCR6V12P sealed lead-acid battery. The battery cannot be repaired and should not be opened. Replace the battery with the same type, size and voltage rating. Use of any other brand may yield poor performance and is not recommended.

Ensure that the battery is installed correctly with the red connector attached to the positive (+) terminal of the battery and the black connector attached to the negative (-) terminal.

Worn out batteries should be recycled by an authorized lead-acid battery recycling center.
CLEANING

IMPORTANT INFORMATION FOR CLEANING YOUR GEMINI INFUSION PUMP

- As with all precision instruments, care and regular maintenance are necessary to ensure safe operation.
- Use only non-staining products recommended for use on plastic materials by their manufacturer, and use them in accordance with their Instructions.
- Harsh cleaning materials, improper cleaning procedures, stronger concentrations and/or extended exposures can damage the instrument.
- **DO NOT attempt to sterilize** the instrument with Ethylene Oxide gas, heat, steam, radiation, or autoclaving. To do so may damage the pump and void the warranty.

CLEANING INSTRUCTIONS

**CAUTION:** **DO NOT SPRAY** the instrument with any fluids. **DO NOT immerse or stand** the instrument in any fluids. Always unplug the power cord from the external AC power source before cleaning. Place the instrument in an upright position to prevent fluids from entering the bottom vents. Only the external surfaces should be cleaned and disinfected by applying cleaning solution to a cloth then applying to the instrument.

Use a solution of mild soapy water, a 10% solution of household bleach, or isopropyl alcohol. Apply the solution with a soft lint free cloth, soft bristle brush, or cotton swab. Clean the Air-In-Line Detector groove, the elements behind the door, and the ECD's groove (if applicable), with cotton tipped swabs saturated with the solution. Disinfect using a non-staining, fungicidal, bacteriocidal, tuberculocidal solution.

Once the contamination has been removed, a cloth wet with fresh water should be used to rinse the entire pump to dilute and remove all residual cleaning/disinfecting solution. Repeat the process completely using another cloth moistened with fresh water. Following the fresh water rinses, thoroughly dry the instrument with a soft, lint-free cloth.

NOTE

Prior to connecting the power cord, ensure that the AC power connector is clean of any residue and dried thoroughly. Check the cord contacts for contamination; if contaminated, remove residue or replace the power cord.
WARRANTY

ALARIS Medical Systems, Inc. (hereinafter referred to as "ALARIS Medical") warrants that:

a. Each new IMED GEMINI PC-2TX volumetric infusion, excluding the battery, is free from defects in material and workmanship under normal use and service for a period of one (1) year from the date of delivery by ALARIS Medical to the original purchaser.
b. The battery and each new accessory are free from defects in material and workmanship under normal use and service for a period of ninety (90) days from the date of delivery by ALARIS Medical to the original purchaser.

If any product requires service during the applicable warranty period, the purchaser should communicate directly with ALARIS Medical headquarters (San Diego, CA) to determine the appropriate repair facility. Except as provided otherwise in this warranty, repair or replacement will be carried out at ALARIS Medical’s expense. The product requiring service should be returned promptly, properly packaged and postage prepaid by purchaser. Loss or damage in return shipment to the repair facility shall be at purchaser’s risk.

In no event shall ALARIS Medical be liable for any incidental, indirect or consequential damages in connection with the purchase or use of any ALARIS Medical product. This warranty shall apply solely to the original purchaser. This warranty shall not apply to any subsequent owner or holder of the product. Furthermore, this warranty shall not apply to, and ALARIS Medical shall not be responsible for, any loss or damage arising in connection with the purchase or use of any ALARIS Medical product which has been:

(a) repaired by anyone other than an authorized ALARIS Medical service representative;
(b) altered in any way so as to affect, in ALARIS Medical’s judgement, the product’s stability or reliability;
(c) subjected to misuse or negligence or accident, or which has had the product’s serial or lot number altered, effaced or removed:
   or
(d) improperly maintained or used in any manner other than in accordance with the written instructions furnished by ALARIS Medical.

This warranty is in lieu of all other warranties, express or implied, and of all other obligations or liabilities of ALARIS Medical, and ALARIS Medical does not give or grant, directly or indirectly, the authority to any representative or other person to assume on behalf of ALARIS Medical any other liability in connection with the sale or use of ALARIS Medical products.

ALARIS MEDICAL DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OR MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR APPLICATION.

See packing inserts for international warranty, if applicable.
ALARIS MEDICAL SYSTEMS SERVICE CENTER LOCATIONS

For information related to operation and/or servicing of this instrument contact:

ALARIS Medical Systems, Inc.
10221 Wateridge Circle
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Facsimile: 619-468-7760

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