



PIEDS CANING PETAS VOLUMETRIC INFUSION PUMPICONTROLLER



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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 BEFÖRE 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 analgesics and anesthetics 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.

WARRING

- EPIDURAL ADMINISTRATION OF DEDGE OTHER THAN THOSE INDICATED FOR EPIDURAL USE COULD RESULT IN SERIOUS INJURY TO THE PATIENT.
- IT IS STRONGLY REGOMMENDED THAT THE INFUSION PUMP SQUECE CONTAINER
 AND ADMINISTRATION SET USED FOR EPIDURAL DRUG DELIVERY BE DECARLY
 DIFFERENTIAVED 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 PC2-TX 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® GEMIN! 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 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. VTBIs 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.

Oľ.

 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 Pressure Selection

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

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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.

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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

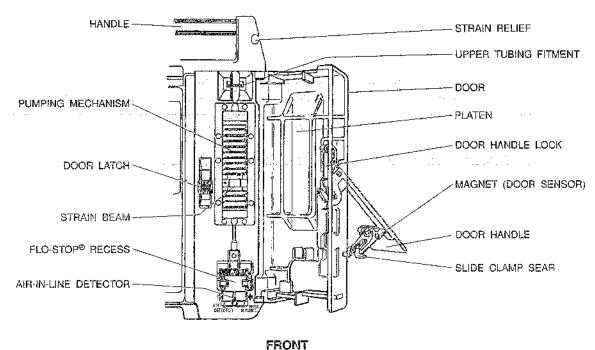
"Clock Setup:", "Factory Set:", "Maximum Rate:", "C2 Port:", "Aux Port:", "PCS Mode:", "Delay Start:", "Drug Calc:", "Multidose:", "Dose Display:", "Key Audio:", "Alarm Audio:", "Switch Audio:", "Tamper Mode:", "Language:", "Anesthesia Mode:", "Computer Control:", "Software Version:", "C2 Serial Number:", "Dynamic Press:", "Press History:", "Vol Time Inf:" and "Battery Mode:".

NOTE

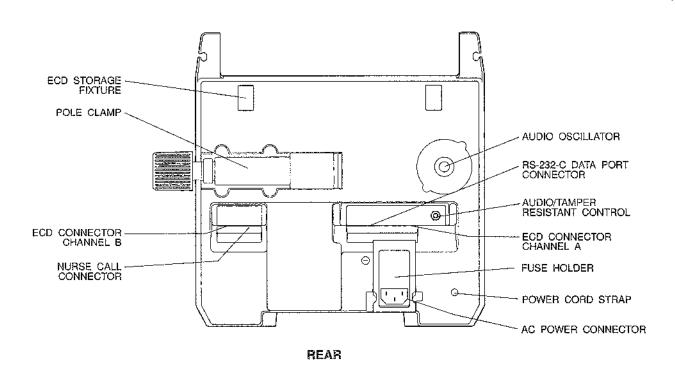
Prior to use, the user must determine whether the instrument configuration is appropriate for the prescribed infusion therapy.

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.

OPERATING FEATURES

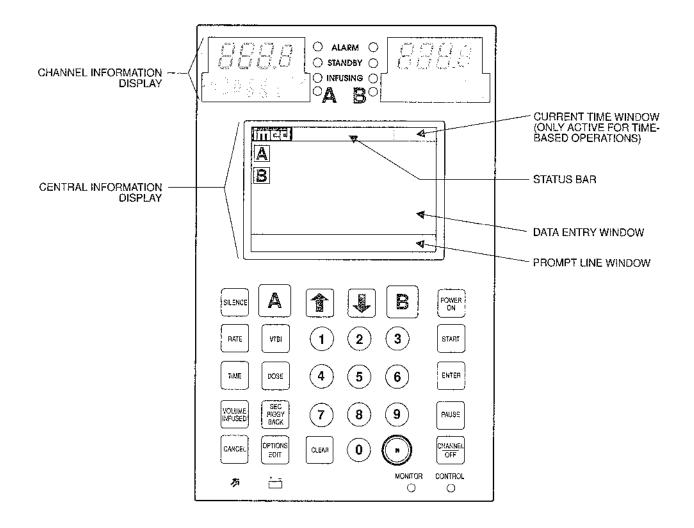






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FRONT PANEL CONTROLS AND INDICATORS



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 indicato: - 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 Volume to be Infused parameter on the selected channel to be changed using the appropriate data entry controls.

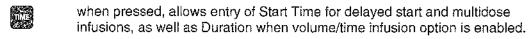


data entry controls - when pressed, allows sequential entry of Rate, VTBI and other numerical operating parameters.



when pressed, inserts a decimal point in numeric data.

DESCRIPTION OF CONTROLS AND INDICATORS (continued)



when pressed, clears the currently selected infusion parameter setting to "0". When pressed following a 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

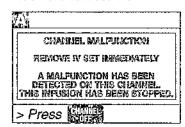
Introduction

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



NOTE

During initialization, ensure the following occur:

- · All LEDs illuminate.
- Rate displays show "888.8" then extinguish except channel A which shows "- - - - ".
- · Message displays illuminate
 - The National Contraction of th extinguish.
- Central display screen displays IMED logos. (If display appears abnormal, remove pump from service.)

- 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.
- 9. Press tubing into Air-In-Line detector.
- 10. Close door and open roller clamp.
- 11. Select channel, press 11 or 11
- 12. Press in ; to change rate, use numeric data entry or



controls.

- 13. Press with; 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.
- Select channel, press ¼¼¼ or





- 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

To Change Display Contrast (SYSTEM OPTION)

- t. Press
- Select Option #1, display contrast. 2.
- controls to adjust the display for optimum viewing.
- 4. Press to confirm contrast adjustment.
- 5. Press to return to normal operation.

To Pause an Infusion

- 1. Select channel, press (or ... or ...
- 3. Press san to resume infusion.

2. Press Ass

To Stop a Primary Infusion

- 1. Select channel, press (or)
- 2. Press



To Change Rate or VTBI During Primary Infusion

- 1. Select channel, press A or ...
- Press to change rate.
- 3. Use numeric data entry or controls to change rate.
- Press tree to change VTBI.
- Use numeric data entry controls to change VTBI.
- 6. Press san

To Titrate Rate

- 1. Select channel, press or \$1.
- 2. Press or to change the rate parameter in 1 or 0.1 mL/hr increments
- Press and hold the or control to scroll to a new rate parameter.
- 3. Press Stand

To Change the Pressure Limit (PCS Mode Control Unlocked)

- 1. Select channel, press or
- 2. Press control.
- Select Option #4, Pressure Limit.
- Select Pump, Controller or Selectable mode by using the or
- controls. (If Selectable is chosen, use the or controls to set occlusion pressure.)
- 5. Press
- 6. Press to exit the channel options screen.

3. Select Option #3, Pressure History.

To View Pressure History for Selected Channel

- 1. Select channel, press or ... or ...

2. Press control.

4. Press to exit.

To Restart an Infusion Following an "INFUSION COMPLETE-KVO" Advisory

- 1. Select channel, press or :
- Press to change VTBI.
- Use numeric data entry controls to change VTBI.
- Replace fluid container.
- Refill drip chamber, if necessary.
- 6. Press this control to change rate, if necessary.
- 7. Use numeric data entry or controls to change rate.
- 8. Press State.

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 Par

- 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 (E).
- 2. Press

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

- 1. Select channel, press A or 3.
- 3. Press

2. Press

To Set Up Secondary (Piggyback) Infusion With Dual Rates

- 1. Set up Primary infusion (using check valve set) as previously described.
- Remove Secondary set from package and close roller clamp.
- Insert set spike 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.
- 6. Open Secondary clamp and prime set. Close clamp.
- 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 or





- 10. Press 🔯
- 11. The rate field will automatically be selected.
- 12. Use numeric data entry or 🖁 🦹 💆 controls to change Secondary rate.
- 13. Press still
- 14. Use numeric data entry controls to change Secondary VTBI.
- 15. Open clamp on the Secondary set.
- 16. Press sign

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.
- Set up the Secondary set as previously described.
- Select channel, press





- Press 🗓
- 5. Press

- 6. Use numeric data entry controls to change Secondary VTBI.
- Press 1112
- Use numeric data entry controls to change Secondary duration.
- Open clamp on the Secondary set.
- 10. Press side

To Change Primary Infusion Parameters During a Secondary Infusion

- 1. Select channel, press (1) or [3]
- Press
- 3. Press to change Primary rate.
- 4. Use numeric data entry or controls to change Primary rate.
- Press to change Primary VTBI.
- Use numeric data entry controls to change Primary VTBI.
- Press
- Press

To Stop a Secondary Infusion and Return to Primary Infusion

- 1. Select channel, press or ... or ...
- 2. Press
- 3. Close Secondary clamp.

- 4. Press
- Select the "Yes" option.
- Press simil

To Change Current Time of Day (SYSTEM OPTION)

- 1. Press control.
- Select Option #2, Time-of-day.
- Enter the correct time of day.
- if in AM/PM time, select either AM or PM by using the or controls.
- 5. Press Signi.

To Set Up a Delayed Start Infusion

- 1. Prime and load the primary administration set as previously described.
- Select channel, press 🗸 or 📳
- Press 震論 control.
- Select Option #1, Delayed Start.
- Confirm Current Time is correct.
- Press ; to change rate, use numeric data entry or 🔏 controls.
- Press (i); to change VTBI, use numeric data entry controls.
- 8. Press ; to enter Start Time, use numeric data entry controls.

- 9. Select either AM or PM (if required) by using the or controls.
- 10. Press then to confirm start time entry.
- 11. Select a Caliback alert by using the or \(\) controls to select "YES" or "NO".
- 12. Press
- 13. Attach set to patient's vascular access device.
- 14. Confirm the correct entry of all dosing parameters and press stin

To Set Up a Delayed Start Secondary Infusion

- Prime and load the primary administration set as previously described.
- 2. Select channel, press or
- 3. Press control.
- 4. Select Option #1, Delayed Start.
- 5. Confirm Current Time is correct.
- 6. Press to change rate, use numeric
 - data entry or controls.
- 7. Press (it); to change VTBI, use numeric data entry controls.
- 8. Press
- 9. Press III.
- 10. Use numeric data entry or controls to change secondary rate.
- 11. Press ma

- Use numeric data entry controls to change secondary VTBI.
- Press ; 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 or controls.
- 15. Open clamp on the Secondary set.
- Confirm the correct entry of all dosing parameters and press

To Use Drug Calculation

- Prime and load the primary administration set as previously described.
- 2. Select channel, press or
 - Press control.
- 4. Select Option #2, Drug Calculation Setup.
- 5. Enter Drug Amount.
- Select the appropriate unit of measure by using the or controls.
- 7. Press
- 8. Enter the appropriate Diluent Volume.
- 9. Press
- 10. Select either the "YES" or "NO" for dosing based on patient weight by using the or controls. (If "NO" is selected, go to Step 14.)
- 11. Press

- 12. Enter the patient weight in kilograms (kg).
- 13. Press 👊
- 14. Select drug dosing time base (min or hours) using the or controls.
- 15. Confirm the correct drug dosing units and press . (Drug dosing units may be edited by pressing ...)
- 16. Set the Rate or Dose.
 - a. Press control, then enter the desired flow rate.
 - b. Press control, then enter the desired drug dose.
- 17. Press via
- 18. Enter the desired VTBI.
- 19 Attach set to patient's vascular access device.
- 20. Press Start

To Set Up a Multidose Infusion

- Prime and load the primary administration set as previously described.
- 2. Select channel, press 🛕 or
- 3. Press control.
- 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 time
- Enter the desired VTBI/Dose.

- 9. Press eng
- 10. Enter the desired Dose Interval.
- 11. Press Pink
- 12. Enter the desired number of doses.
- 13. Press The
- Enter the desired start time for the first dose.
- Select either AM or PM (if required) by using the or controls.
- Attach set to patient's vascular access device.

To Power Off The PC-2TX

- 1. Select channel, press 🚺 or 📳
- 2. Press CHARL

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 or
- 2. Press to stop infusion.
- 3. Close the roller clamp.
- 4. Remove the empty solution container.
- Spike the new container. Ensure the drip chamber is 2/3 full.
- 6. Press ; to change VTBI, use numeric data entry controls.
- Open roller clamp.
- 8. Press stant

UNLOADING THE SET

- 1. Select channel, press or
- 2. Press pust or to stop infusion.
- 3. Close the roller clamp.
- Open the door. The set's Flo-Stop[®] will automatically close to prevent accidental free-flow.
- Remove administration set Flo-Stop[®] first, lift upper fitment vertically from upper fitment recess.
- Close the door whenever the pump is not in use.

INDEPENDENT SETUP AND OPERATING PROCEDURES

Introduction

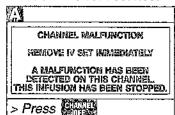
The detailed procedures necessary to set up and operate the PC-2TX on either channel in the independent operating condition are described in the following section.

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

- Connect the PC-2TX to an external AC power source using the power cord supplied by ALARIS Medical Systems.
- 2. Press
 - If the following screen displays, remove the instrument from service.



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.

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

TO BEHIND HORSE BEEN AND AND MAKE AND AND ADDRESS FOR THE PROPERTY OF THE PROPERTY OF THE ADDRESS FOR A PARTY OF THE PROPERTY OF THE PROPERTY

 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
 Message displays illuminate

Central Information Display shows:

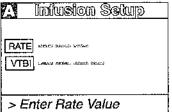
	1					
A (1613)	.pv	5.558	******	:мисю		
B	· ppome	#****;	жкін	жи:жк		
		-			······	

ACTION/PROMPT

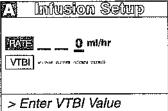
DISPLAY RESPONSE

- 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.
- Pump mechanism homes.

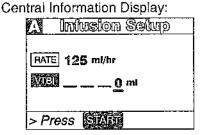
- Press the tubing into the Air-In-Line detector.
- 10. Close the door and open the roller clamp.
- 11. Press 🔼:
 - After 3 seconds "> Enter Rate Value" displays
 - After 12 seconds audio prompt sounds
- Channel Information Display:
- · Channel indicator illuminates
- Rate display shows "- - " Central Information Display:



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



- b. Use numeric data entry controls to enter rate parameter
- c. Press in :
 - After 3 seconds "> Enter VTBI Value" displays
 - After 12 seconds audio prompt sounds
- New rate value displays



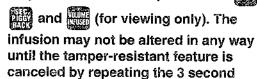
ACTION/PROMPT

- d. Use numeric data entry controls to enter VTBI parameter
 - After 3 seconds "> Press (ART)"
 displays
- 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



During infusion:

AUDIO control press.

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.

DISPLAY RESPONSE

New VTBI value displays

Channel Information Display:

- · INFUSION indicator flashes
- Rate display Rate value displays Central Information Display;

Channel Information Display:

- INFUSING indicator flashes Central Information Display:
- VTBI value decrements

ACTION/PROMPT

Upon completion of the infusion:

· Audio prompt sounds.

Channel Information Display:

 "INFUSION COMPLETE - KVO" scrolls

DISPLAY RESPONSE

- Rate display shows 1 or set rate if <1.0 mL/hr
- ALARM indicator flashes Central Information Display:

	[다						
	Κ\	/0					
В	<i>M.</i> D.	41/40	<0000X	<:xx:xx	00030000		
							į
			-			 	_

To Set Up a Primary Infusion with Volume/Time Option Enabled

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

- · AC Power indicator illuminates
- Battery operation indicator extinguishes

Channel Information Display

- · All LEDs illuminate for 3 seconds
- Rate displays show "888.8" then extinguish, except channel A which shows "- - - - "
- Message displays illuminate
 Message displays illumin

Central Information Display shows:

	F						
A	00000:30	осжин	38H-M	1.196	****		
В	::##.10	20,000,00	******		1040		

- 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

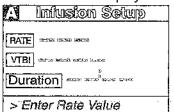
Channel Information Display:

- · Channel indicator illuminates
- · Rate display shows "- - "

ACTION/PROMPT

DISPLAY RESPONSE

Central Information Display:

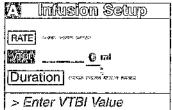


- 5. Set the VTBI and duration
 - a. Press (iii):



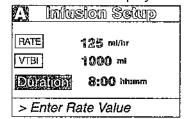
- After 3 seconds "> Enter VTBI Value" displays
- After 12 seconds audio prompt sounds
- b. Use numeric data entry controls to enter VTBI parameter
- c. Press
 - After 3 seconds "> Enter Rate Value" displays
 - · After 12 seconds audio prompt sounds
- d. Use numeric data entry controls to enter duration parameter.
 - As Duration parameters are entered, the rate value displays
 - After 3 seconds "> Press displays

Central Information Display:



New VTBI value displays

Central Information Display



- New duration value displays
- · Calculated rate value 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.

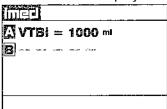
ACTION/PROMPT

- Attach the set to the patient's vascular access device following accepted hospital procedure.
- 7. Press sian

DISPLAY RESPONSE

Channel Information Display:

- · INFUSION indicator flashes
- Rate display Rate value displays 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 infusion:

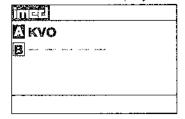
· Audio prompt sounds.

Channel Information Display:

- INFUSING indicator flashes Central Information Display:
- · VTBI value decrements

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:



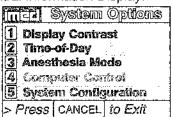
ACTION/PROMPT

DISPLAY RESPONSE

To Adjust Central Information Display Contrast

- 1. Press (do not select channel first).
 - After 3 seconds "> Press GANCEL to Exit " displays

Central Information Display:



2. Press

3. Use the controls to adjust the

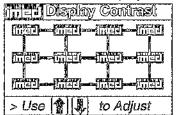
contrast of the central display.

- After 3 seconds "> Press ENTER to confirm" displays
- 4. Press
- 5. Press to return to initial screen.

To Pause an Infusion

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

Central Information Display:



Central Information Display:

 Display contrast increases with each press of and decreases with each press of ...

Central Information Display:

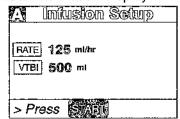
· Returns to System Options screen

Central Information Display:

· Returns to initial screen

Channel Information Display:

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



ACTION/PROMPT

2. Press Pus

- After 3 seconds "> Press State "
 displays
- After 12 seconds audio prompt sounds. In Anesthesia mode, audio is disabled.
- 3. Press to resume the infusion.

To Stop a Primary Infusion

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

2. Press

NOTE

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

DISPLAY RESPONSE

Channel Information Display:

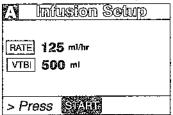
- INFUSING indicator extinguishes
- STANDBY indicator flashes
- "PAUSE" advisory scrolls.
 Central Information Display:
 NO CHANGE

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:



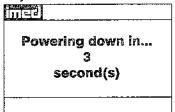
· Channel indicator - flashes

Channel Information Display:

- INFUSING indicator extinguishes
- Channel indicator extinguishes
- Rate display blanks
 Central Information Display:
- Selected channel display extinguishes

or

• if only one channel active:



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

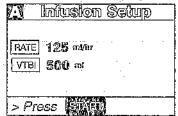
ACTION/PROMPT

DISPLAY RESPONSE

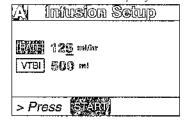
To Change Rate or VTBI During Primary Infusion

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

- Channel Information Display:
- Channel indicator illuminates
 Central Information Display:



- 2. Press prior or Wall.
 - After 3 seconds "> Press displays
 - After 12 seconds audio prompt sounds
- Central Information Display:



- 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 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

MOTE

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.

Channel Information Display:

- New rate value displays
 Central Information Display:
- · Returns to active infusion screen

The two transfers of the state of the state

ACTION/PROMPT

DISPLAY RESPONSE

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.

- 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.
- Use control to increase or control to decrease the rate parameter in 1 or 0.1 mL/hr increments

Press and hold the or control to scroll to a new rate parameter

- After 3 seconds "> Press start" displays
- After 12 seconds audio prompt sounds
- 3. Press sun

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

ACTION/PROMPT

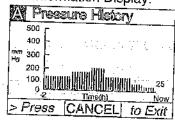
- 3. Press 📆
 - After 3 seconds "> Press CANCEL to Exit" displays
 - After 12 seconds audio prompt sounds

4. Press

DISPLAY RESPONSE

Channel Information Display: NO CHANGE

Central Information Display:



Channel Information Display:

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

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

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:

7.Y	gwież noisuimi
RATE	125 mi/m
	0 ml
	, v
> Ei	nter VTBI Value

2. Press

Channel Information Display: NO CHANGE

Central Information Display:

autos moisutal 😢	_
RATE 125 ml/hr	
> Enter VTBI Value	_

ACTION/PROMPT

- 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 sum

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

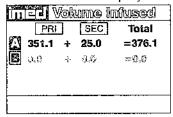
If the Volume/Time infusion option has been enabled, the duration parameter may also be changed as described above for Rate and VTBI.

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

- 1. Press
 - Active channel indicators are highlighted

Channel Information Display: NO CHANGE

Central Information Display:



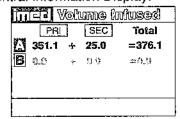
Example Values

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

- 1. Press
 - Active channel indicators are highlighted

Channel Information Display: NO CHANGE

Central Information Display:



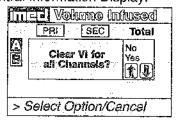
ACTION/PROMPT

2. Press

- After 3 seconds "> Select Option/Cancel" displays
- After 12 seconds audio prompt sounds
- 3. Use to select "Yes".
 - After 3 seconds "> Press ENTER to confirm" displays
 - After 12 seconds audio prompt sounds

DISPLAY RESPONSE

Channel Information Display: NO CHANGE Central Information Display:



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 or 5 to select channel.
 - After 3 seconds "> Press displays
 - After 12 seconds audio prompt sounds
- 2. Press

To marking their resources in the control of the co

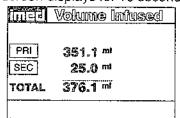
Channel Information Display:

- 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;



 After 10 seconds the Infusion Setup screen re-displays

ACTION/PROMPT

3. Press and or to deselect channel.

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

- 1. Press A or E to select channel.
 - After 3 seconds "> Press sam" displays
 - After 12 seconds audio prompt sounds
- 2. Press

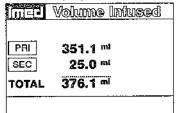
Channel Information Display:

- 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:



3. Press while the Volume infused screen is displaying to clear all Values to "0".

Channel Information Display: NO CHANGE Central Information Display:

	Volume Infused
PBL	g, g mi
SEC	6,6 ml
TOTAL	C.C mi

 After 10 seconds the Infusion Setup screen re-displays

Channel Information Display:

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

ACTION/PROMPT

DISPLAY RESPONSE

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.

- 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.
- Open the Secondary administration set package, remove set, and close clamp.
- 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.
- Attach the Secondary set to the upper injection site on the Primary set.
- Lower the Primary fluid container using the hanger provided with the Secondary set.
- 8. Press or to select channel.

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:

	ndusion	Sewp
	PRI	S.≣o
	125	<u>0</u> m³/br
VTBI	900	ml
> Enter Rate Value		

9. Press

- After 3 seconds "> Enter Rate Value" displays
- Rate parameter is automatically selected

ACTION/PROMPT

10. Use numeric data entry or



controls to enter or change rate value.

- After 3 seconds ">Enter VTBI Value" displays
- After 12 seconds audio prompt sounds
- 11. Press 7.0
 - After 3 seconds "> Enter VTBI Value"
 - After 12 seconds audio prompt sounds
- 12. Use numeric data entry controls to enter or change VTBI value, then press to
 - After 3 seconds "> Press displays
 - After 12 seconds audio prompt sounds

NOTE

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

- 13. Open clamp on the Secondary set.
- 14. Press sum

DISPLAY RESPONSE

Channel Information Display: NO CHANGE

Central Information Display:

New rate value displays

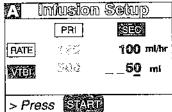
Channel Information Display: NO CHANGE

Central Information Display:

· Last programmed secondary VTBI value displays

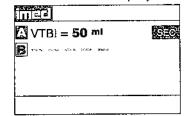
Channel Information Display: NO CHANGE

Central Information Display:



Channel Information Display:

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



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.

DISPLAY RESPONSE

Channel Information Display:

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

Upon Completion of the Secondary infusion:

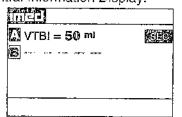
 Switchover audio afert (6 beeps) - sounds (unless disabled in System Configuration)

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:



To Set Up Secondary (Piggyback) Infusion With Dual Rates and Volume/Time Infusion Option Enabled

- 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.
- Set up the Secondary administration set as previously described.
- 3. Press or to select channel.

Channel Information Display:

- · Channel indicator illuminates
- INFUSING indicator continues flashing

Central Information Display:

Infusion Setup screen displays

ACTION/PROMPT

4. Press

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

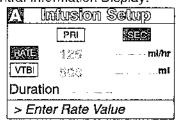
5. Press

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

- Use numeric data entry controls to enter or change VTBI value.
 - · After 12 seconds audio prompt sounds
- 7. Press me or ever
 - After 3 seconds "> Press SAM"
 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 signa" displays
 - · After 12 seconds audio prompt sounds

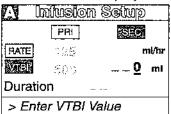
DISPLAY RESPONSE

Channel Information Display: NO CHANGE Central Information Display:



Channel Information Display: NO CHANGE

Central Information Display:



Channel Information Display: NO CHANGE

Central Information Display:

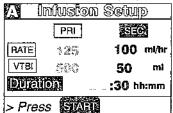
New VTBI value displays

Channel Information Display: NO CHANGE

Central Information Display:

 Last programmed duration displays

Channel Information Display: NO CHANGE



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.

- 9. Open clamp on the Secondary set.
- 10. Press sun

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:

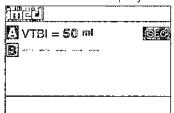
 Switchover audio alert (6 beeps) - sounds (unless disabled in System Configuration)

MOTE

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. **DISPLAY RESPONSE**

Channel Information Display:

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

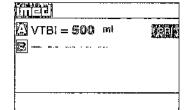


Channel Information Display:

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

Channel Information Display:

- · Primary rate displays
- Message screen clears Central Information Display:

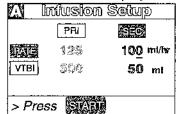


ACTION/PROMPT

DISPLAY RESPONSE

To Change Primary Infusion Parameters During Secondary Infusion

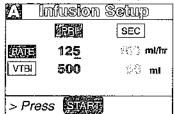
- 1. Press or to select channel.
 - After 3 seconds "> Press sign" displays
 - After 12 seconds audio prompt sounds
- Channel Information Display:
- Channel indicator illuminates
 Central Information Display:



- 2. Press Press.
 - After 3 seconds "> Press displays

Channel Information Display: NO CHANGE

Central Information Display:



- 3. Use numeric data entry or controls to change primary rate value.
- 4. Press to change primary VTBI.
- 5. Use numeric data entry controls to change primary VTBI.
 - After 3 seconds "> Press displays
 - After 12 seconds audio prompt sounds

Channel Information Display: NO CHANGE

Central Information Display:

· New primary rate value displays

Channel Information Display: NO CHANGE

Central Information Display:

- · Cursor displays under VTBI value
- VTBI is highlighted

Channel Information Display: NO CHANGE

Central Information Display:

· New primary VTBI value displays

ACTION/PROMPT

6. Press

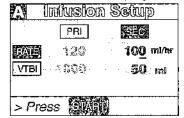
- After 3 seconds "> Press sign" displays
- After 12 seconds audio prompt sounds

7. Press

DISPLAY RESPONSE

Channel Information Display: NO CHANGE

Central Information Display:



Channel Information Display:

- Channel indicator extinguishes
 Central Information Display:
- Active Secondary Infusion screen displays

To Stop a Secondary Infusion and Return to the Primary Infusion

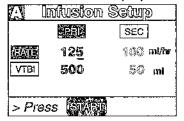
- 1. Press or to select channel.
 - After 3 seconds "> Press displays
 - · After 12 seconds audio prompt sounds
- 2. Press
 - After 3 seconds "> Press Min"
 displays

Channel Information Display:

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

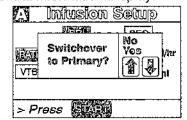
Channel Information Display: NO CHANGE

Central Information Display:



- 3. Close Secondary clamp.
- 4. Press 500

Channel Information Display: NO CHANGE



ACTION/PROMPT

- 5. Use or to select "Yes" option.
- 6. Press san.
 - The secondary infusion stops and the primary infusion starts.
 - The audio fone sounds six times (unless the primary switchover alert is disabled).

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

DISPLAY RESPONSE

Central Information Display:

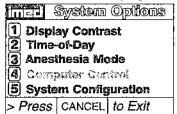
"Yes" option is highlighted

Channel Information Display:

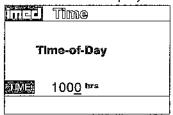
- · Rate changes to Primary value
- Channel indicator extinguishes
 Central Information Display:
- Primary active infusion screen displays

Channel Information Display: NO CHANGE

Central Information Display:



Central Information Display:



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

ACTION/PROMPT

DISPLAY RESPONSE

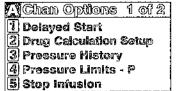
To Set Up a Delayed Start Infusion

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 3 to select channel.
 - After 3 seconds "Enter Rate Value" displays
 - After 12 seconds audio prompt sounds
- 3. Press Channel I
 - After 3 seconds "> Press 1-5 or or or 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:



> Press 1-5 or or CANCEL

4. Press 🔼.

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

Channel Information Display: NO CHANGE

/ V	D@]	aye	e[1154	hrs
	a	·		0	ml/isz		
VTE	31						
STAF	T	****	·				
Call	back	Aler	ŗ.		No		
> E	nter I	Pate	e V	'al	ue		

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



to continue. If the time displayed is

incorrect press . The following pop-up display appears:

Enter the correct Time of Day and press .

DISPLAY RESPONSE

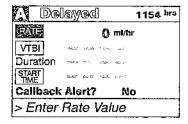
Confirm Current Time
1154 hrs
Press ENTER to confirm.
Press OPTIONS to edit.

Current Time 1154 hrs

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 inc.

- After 3 seconds "> Enter Rate Value" displays
- After 12 seconds audio prompt sounds
- Alter 12 seconds addio prompt sou
- 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
 - 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

- VTBI is highlighted
- · Last VTBI value or "0" displays

ACTION/PROMPT

- 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

 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 and to change Caliback Alert option.
 - Use or to select "Yes" (No is default setting) then press to confirm.
 - After 3 seconds "> Press displays.
 - · After 12 seconds audio prompt sounds.

NOTE

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

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

DISPLAY RESPONSE

Channel Information Display: NO CHANGE

Central Information Display:

New VTBI value displays

Channel Information Display: NO CHANGE Central Information Display:

PATE 50 ml/hv

VTBI 250 ml

Caliback Alort? No

> Enter Start Time

Channel Information Display: NO CHANGE

Central Information Display:

· New Start Time displays

Channel Information Display: NO CHANGE Central Information Display:

ACTION/PROMPT

DISPLAY RESPONSE

13, Press STARI

Channel Information Display:

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

5

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
- · VTBI decrements

When the infusion is complete

- Infusion Stops (No KVO)
- If Callback Alert was selected, an audio alert sounds

Channel Information Display:

- Channel indicator extinguishes
- Rate display blanks
- "DELAYED START COMPLETE" scrolls

Central Information Display:

imed	1600 hrs.
COMPLETE	
B 20 2000, 0000, 0000, 0000	

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.

ACTION/PROMPT

- 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 \$\frac{1}{2}\$ or CANCEL " displays
- After 12 seconds audio prompt sounds

4. Press

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

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

111622 + 0.86326 + 0.87326 + 0.87326 + 0.01446 + 0.0184

incorrect press . The following pop-up display appears:

Enter the correct Time of Day and press



DISPLAY RESPONSE

Channel Information Display:

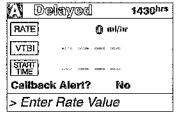
- Channel indicator illuminates
- RATE display shows "- - ". Central Information Display:
- Infusion Setup screen displays

Channel Information Display: NO CHANGE Central Information Display:

Chan 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:



Confirm Current Time 1430 hrs

Press ENTER to confirm. Press OPTIONS to edit.

> Current Time 1430 hrs

THE STATE OF THE S

ACTION/PROMPT

DISPLAY RESPONSE

NOTE

A Delayed Start Secondary Infusion may also be programmed by entering the Primary infusion parameters, press and enter the Secondary parameters then press and select Option #1 to select Delayed Start Secondary.

5. Press 📆.

- 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 (iii).

- 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

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:

🚺 Dela	yy o d	1430 hrs
RATE	1 25 ml/hr	
VTB!	500 mt	
START	hr	5
Callback A	Mert?	No
> Enter S	tart Time)

9. Press

- After 3 seconds "> Enter Rate Value" displays
- After 12 seconds audio prompt sounds
- · The Rate field is highlighted

Channel Information Display: NO CHANGE

De De	1ay \$E	© 14	130 prz
	PRI	SEC.	
RATE		onere: 2000001	0 ml/hr
VTB1	500	months abilities M.50000 (nl
START			hrs
> Ente	r Rate	Value	

ACTION/PROMPT

DISPLAY RESPONSE

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.

N De	ay Se	C 1430 hrs
i	PRI	SEO
	125	0 m!/br
VIBI	500	-m-day beliefs builder turmer [2]
Duration	I	•
TIME		fers
> Ente	r Plate	Value

10. Use numeric data entry or 🖟 🔏 🙎



controls to enter Secondary rate value. After 3 seconds "> Enter VTBI Value" displays

- After 12 seconds audio prompt sounds



- After 3 seconds "> Enter VTBI Value"
- 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

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:

A De	lay SEC	<u>}</u> 1	430 hrs
RATE	PRI 125 500	100 50	LI JA
START			,hrs
> Ente	er Start T	īme	

13. Press in or in control.

- After 3 seconds "> Enter Start Time" displays
- After 12 seconds audio prompt sounds

Channel Information Display: **NO CHANGE**

N De	lay SE	Ĝ 14	30 hrs
RATE VTBI	PBI 125 500	100 50	ml/hr
STARTS MIMES			_ hrs
> Enter Start Time			

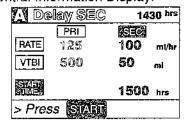
ACTION/PROMPT

- 14. Use numeric data entry controls to enter Start Time (Use to select AM or PM, if appropriate).
 - After 3 seconds "> Press SAM"
 displays
 - After 12 seconds audio prompt sounds

15. Press

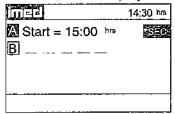
DISPLAY RESPONSE

Channel Information Display: NO CHANGE Central Information Display:



Channel Information Display:

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



When START TIME = Current time

· Infusion Starts

Channel Information Display:

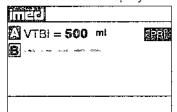
- Programmed rate displays
- INFUSING indicator flashes Central Information Display:
- Active infusion screen displays including Time-of-Day display
- · Secondary VTBI decrements

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:



ACTION/PROMPT

DISPLAY RESPONSE

To Set Up a Multidose Infusion

WARNING

The Militidose feature is to be used only by personnel properly trained in using inuitidose containers. Courton labels which plearly differentiate single dose and Multidose containers must be utilized. Single dose piggyback systems employing the clavelye sets are not designed 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.

- 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

Channel Information Display:

- Channel indicator illuminates
- RATE display shows "- - -".

Central Information Display:

Infusion Setup screen displays

Channel Information display: NO CHANGE

Central Information Display:

Cham Options 1 of 2

1 Delayed Start

2 Drug Calculation Setup

3 Pressure History

4 Pressure Limits · P

5 Stop Infusion

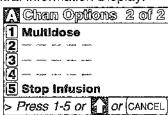
> Press 1-5 or R or CANCEL

ACTION/PROMPT

- 4. Use to select screen 2 of 2 of the Channel Options display.
 - After 3 seconds "> Press 1-5 or or or cancel
 - After 12 seconds audio prompt sounds
- 5. Press 📆
 - After 3 seconds "> Enter Rate Value" displays
 - · After 12 seconds audio prompt sounds

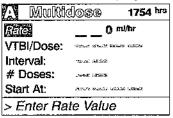
DISPLAY RESPONSE

Channel Information Display: NO CHANGE Central Information Display:



Channel Information Display: NO CHANGE

Central Information Display:



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

to continue. If the time displayed is

incorrect press . The following pop-up display appears:

Enter the correct Time of Day and press

- Use numeric data entry or 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

Confirm Current Time
1754 hrs
Press ENTER to confirm.
Press OPTIONS to edit.

Current Time 1754 hrs

Channel Information Display: NO CHANGE Central Information Display:

Rate displays

ACTION/PROMPT

7. Press even or wat.

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

DISPLAY RESPONSE

Channel Information Display: NO CHANGE Central Information Display:

A Mul	Mdose	1754 hrs
Rate:	100 ml/h:	
VIB/Pos) ml
Interval:	1240528 820058	
# Doses:	estrum estrema	
Start At:	SAMPLE COMMON KAN	PATH BETCHE
> Enter VTBI Value		

- 8. Use numeric data entry controls to enter the VTBI/Dose for each dose 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:

VTBI/Dose displays

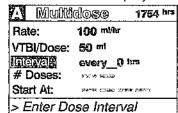
NOTE

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
 - After 3 seconds "> Enter Dose Interval" displays
 - · After 12 seconds audio prompt sounds

Channel Information Display: NO CHANGE

Central Information Display:



- Use numeric data entry controls to enter the Dose Interval (1-24 hours) for each dose 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:

Dose Interval displays

ACTION/PROMPT

11. Press

- 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.

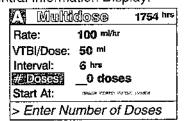
- 12. Use numeric data entry controls to enter the Number of Doses (1-24) to be infused.
 - After 3 seconds "> Press ENTER to confirm" displays
 - After 12 seconds audio prompt sounds

13. Press

- After 3 seconds "> Enter Start Time" displays
- After 12 seconds audio prompt sounds

DISPLAY RESPONSE

Channel Information Display: NO CHANGE Central Information Display:



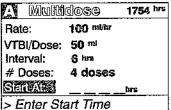
Channel Information Display: NO CHANGE

Central Information Display:

Number of Doses displays

Channel Information Display: NO CHANGE

Central Information Display:



14. Use numeric data entry controls to enter Start Time (Current time + 8 hours

maximum) for initial dose (use a or



- to select AM or PM, if required). After 3 seconds "> Press ENTER to confirm" displays
- After 12 seconds audio prompt sounds

Channel Information Display: NO CHANGE Central Information Display:

Start Time displays

NOTE

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

1 CONTROL OF THE PROPERTY OF T

ACTION/PROMPT

15. Press

- After 3 seconds "> Press displays
- · After 12 seconds audio prompt sounds

NOTE

To edit the Multidose infusion parameters, press to return to the top of the Multidose setup screen. Use numeric data entry controls to change highlighted parameter. Use to move to the next parameter.

- 16. Attach the set to the patient's vascular access device following accepted hospital procedure.
- Confirm the dosing parameter entries, then press

DISPLAY RESPONSE

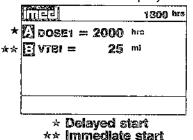
Channel Information Display: NO CHANGE Central Information Display:

		,
Multi	dose	1754 hrs
Rate:	400 m/m	
VTBI/Dose:	50 ml	
interval:	(Files	
# Doses:	4 dosse	
Start At:	2000 hrs	
> Press	STATE	

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:



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

ACTION/PROMPT

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

DISPLAY RESPONSE

Central Information Display:

🛕 Multidose 2230 h
Rate= 100 ml/hr
VTBI= 50 ml
Every 6 hrs x 4 doses
Doses completed=1
Dose 2 Starts 0200 hrs
> Press SiASI

When the Multidose infusion is completed:

The infusion stops (with no KVO).

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

Channel Information Display:

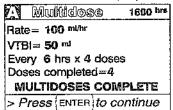
- INFUSING indicator extinguishes
- Rate display blanks
- "MULTIDOSE COMPLETE" scrolls

Central Information Display:

 "COMPLETE" displays for the appropriate channel

Channel Information Display:

 Channel indicator - Illuminates Central Information Display:



2. Press to reset and resume same

Multidose infusion or press to shut down channel.

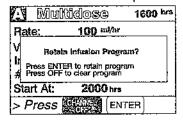
· To resume - reset start time

Channel Information Display: NO CHANGE Central Information Display:

ENTER Option

Multidose Infusion Program

screen displays
CHANNEL OFF Option



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

WARRIG

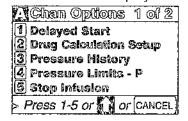
The Brui, Calculation feature is lobe traction by paracinal property malried in the administration of modifications, industrial or a modification of modifications. Extreme caption about the exercised of ingular correct entry, of drug calculation infinish parameters, nater to appoint of high product labeling for information concerning appropriate administration (exhibites and documents).

- 1. Prime and load the primary administration set as previously described.
- 2. Press or it 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

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

📉 Drug Calculation	ħ
Ameunt0	mag
Diluent:	12177
Weight:	gram
Time Unit:	(E)
[Conc] *** *** *** *** ***	(A)
> Enter Drug Amount	

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

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

Channel Information Display: NO CHANGE Central Information Display:

DISPLAY RESPONSE

NO CHANGE

Channel Information Display:

Central Information Display:

Selected Amount displays

A Drug Calculation
Amount: 400 ms
Diceits Om
Weight:
Time Unit:
[Conc] : a can be seen as as
> Enter Diluent Volume

- 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

Channel Information Display: NO CHANGE

Central Information Display:

Diluent Volume displays

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

Channel Information Display: NO CHANGE

🕖 Drug Calculatio	M)
Amount: 400 mg	
Diluent: 250 ml	No
Weilin >>>>>	Yes
Time Unit:	
[Conc] 1600 mcg/ml	
> Dose based on Pt I	Nt?

ACTION/PROMPT

DISPLAY RESPONSE

- to select Yes or No in response to query "Dose based on Pt Wt?".
 - After 3 seconds "> 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 to confirm weight for both channels.



10. Press to confirm selection.

If Yes is selected, use numeric data entry controls to enter patient weight in kilograms (kg) and press to confirm

- If No is selected, press to confirm. (screen will show "Weight: Not used")
- After 3 seconds "> Select Time Units" displays
- 11. Use or to select Min or Hour.
 - After 3 seconds "> Press ENTER to confirm" displays
 - After 12 seconds audio prompt sounds

Channel Information Display: NO CHANGE

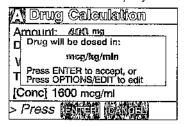
Central Information Display:

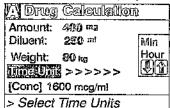
· Min or Hour is highlighted

12. Press to confirm selection.

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

Channel Information Display: NO CHANGE Central Information Display:





ACTION/PROMPT

DISPLAY RESPONSE

NOTE

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

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

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:

infusion Solup
RATE 0 ml/hr
VTBI Orneg/kg/min
[Conc] 1600 mcg/ml
> Enter Rate or Dose

ACTION/PROMPT

14. Press sale or lose.

 If rate, after 3 seconds "> Enter Rate Value" displays

or

- 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 (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
 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

oir.

If dose, DOSE and O^{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

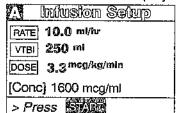
Channel Information Display: NO CHANGE

Central Information Display:

VTBI and 0 ml are highlighted

Channel Information Display: NO CHANGE

Central Information Display:



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

ACTION/PROMPT

19. Press start

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:

- 1. Press or to select channel.
 - 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

Channel Information Display:

- · Rate display blanks
- INFUSING indicator extinguishes Central Information Display:



3. Press to save current Drug
Calculation Infusion Program or press
to clear program.

Channel Information Display:

- Channel displays blank
 Central Information Display:
- Active Infusion screen displays, if other channel is operating; or Powerdown screen displays

ACTION/PROMPT

DISPLAY RESPONSE

To Edit a Drug Calculation Setup

WARMING

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 accepte thospital procedure which may involve champing IV thistita or reprinting existing author with direction involve champing IV thistita or reprinting existing authors with a 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:

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:

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

Press CANCEL to clear program

ACTION/PROMPT

DISPLAY RESPONSE

To Infuse Using an Empty Container Detector (ECD)

- 1. Set up a primary infusion on any channel.
- 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 in, then o or the to clear the VTBI value.
- 5. Press to select "ALL" or program a specific VTBI using the numeric data entry controls.

Central Information Display:



6. Press sin.

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

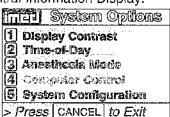
Anesthesia mode is intended for use in the operating room where critical IV infusions are under constant surveillance by Anesthesia personnel. Anesthesia mode allows the user to PAUSE an infusion with no audible prompting or "walkaway" alarms associated with normal PC-2TX operation. It also decreases 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.

ACTION/PROMPT

DISPLAY RESPONSE

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

Central Information Display:



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 ENTER to confirm" displays
 - After 12 seconds audio prompt sounds

Central Information Display:



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

Central Information Display:

· "Yes" option is highlighted

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.

ACTION/PROMPT

DISPLAY RESPONSE

To Clear Alarms

- Check the Channel Information Display to determine the type of alarm condition.
- 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 or 📑 as appropriate.
- 2. Press

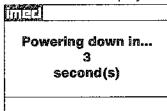
Channel Information Display:

- All displays and indicators for selected channel - extinguish
 Central Information Display:
- Selected channel display reverts to un-programmed status.
- 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. Central Information Display:



 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.

MOTE

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

 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)

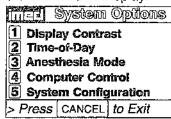
To Change PC-2TX Operating Condition from MONITOR to Independent

 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:

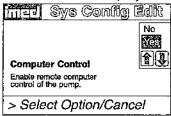


NOTE

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

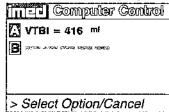
- 2. Press 2.
 - After 3 seconds "> Select Option/Cancel" displays
 - After 12 seconds audio prompt sounds

Central Information Display:



- 3. Select "Yes" using the controls.
- - COMPUTER CONTROL and Computer Control indicator - flash
 - The PC-2TX keypad is inoperative, except for the put the



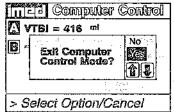


MONITOR OR COMPUTER CONTROL SETUP AND OPERATING PROCEDURES (continued)

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

- 1. Press or 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:



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:

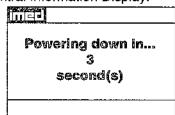
NOTE

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:



 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

- Repeat procedure listed above under "To Change PC-2TX Operation from COMPUTER CONTROL to MONITOR"
- 2. Press or as appropriate.
- 3. Press
- 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.

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:

ितादेरी Powering down in... 3 second(s)

 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.

CHANNEL, CENTRAL INFORMATION DISPLAY AND ALARM RESPONSE PROCEDURES

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:

Туре	Sound	Notes
switchover	six short beeps	variable volume; can be silenced and disabled in the SYSTEM CONFIGURATION
prompt	one short beep every two seconds	variable volume; can be silenced
key click	one short beep	fixed minimum volume; cannot be silenced; can be disabled via the SYSTEM CONFIGURATION
illegal keypress	two short beeps	variable volume; cannot be silenced, can be disabled via SYSTEM CONFIGURATION
advisory	one short beep every fifteen seconds	variable volume; can be silenced for ≈2 minutes
alarm	three selectable profiles (selectable in System Configuration)	variable volume; can be silenced for ≈2 minutes
malfunction (software detected)	pairs of long beeps	fixed 75 decibel volume; cannot be silenced
malfunction (hardware detected)	constant audio tone	fixed 75 decibel volume; cannot be silenced

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.

Advisory	Meaning	Response
INFUSION COMPLETE - KVO Audio: prompt Visual: continuous scroll in channel information display	VTBI has been infused; PC-2TX is infusing at KVO rate.	Stop channel, or set up new infusion.
EMPTY CONTAINER - KVO Audio: prompt Visual: continuous scroll in channel information display	Empty container detected by ECD before programmed VTBI delivered, or when "ALL" has been used as the VTBI parameter, PC-2TX is infusing at KVO rate.	Replace IV container, stop channel or set up a new infusion.
	ECD plugged into PC-2TX, but not attached to drip chamber.	Attach ECD to drip chamber.
DELAYED START COMPLETE Audio: none, unless callback was selected Visual: continuous scroll in channel information display	The delayed start infusion has been infused.	Stop channel or set up a new infusion.
MULTIDOSE COMPLETE Audio: none Visual: continuous scroll in channel information display	All doses of the multidose infusion have been infused.	Stop channel or set up a new infusion.
LOW BATTERY Audio: prompt Visual: continuous display in central information display	Low battery threshold detected. Remaining battery operational life is limited.	Connect power cord to an external AC power source; alarm will be silenced.
Maintenance Mode Audio: key click Visual: continuous display in central information display	Instrument powered up in the Maintenance mode.	DO NOT USE ON PATIENT. Check with Biomedical Department.
Paused Audio: advisory, then prompt after 2 minutes Visual: continuous display in central information display	PAUSE control has been pressed.	Press START control to resume infusion, or press CHANNEL OFF to stop infusion.
Battery Replacement Do not use on battery. Operate on AC only. Battery Replacement Required. Contact Blomed.	The pump has detected a battery that is no longer capable of sustaining a charge.	Replace with an operable pump as soon as possible. Send pump to Biomedical Department to have batteries checked.

Advisory	Meaning	Response
Replace Battery Audio: On AC - None On DC - Prompt Visual: continuous display in central information display	The pump has detected a battery that is no longer capable of sustaining a charge.	Replace with an operable pump as soon as possible. Send pump to Biomedical Department to have batteries checked.
PAUSE Audio: advisory, then prompt after 2 minutes Visual: continuous scroll in channel information display	PAUSE control has been pressed.	Press START control to resume infusion, or press CHANNEL OFF to stop infusion.
Panel/Keypad Locked Audio: key click Visual: continuous display for 3 seconds in central information display	Audio control has been pressed and held for 3 seconds to initiate tamper-resistant feature.	None. (Repeat to cancel tamper-resistance).
Panel/Keypad Unlocked Audio: key click Visual: continuous display for 3 seconds	Audio control has been pressed and held for 3 seconds to deactivate tamper-resistant feature.	None. (Repeat to re-initiate tamper-resistance).
LOW FLOW Audio: advisory Visual: continuous scroll in channel information display	Flow has slowed due to back pressure equaling container height in Controller mode. An occlusion alarm will occur within one minute.	Check tubing for restriction, raise container, press START, or change to Pump Delivery mode (if PCS mode control unlocked).
Start = XX:XX Audio: none Visual: continuous display	Delayed start program initiated. XX:XX is the programmed start time.	None. When current time = start time, the infusion will start.
SECONDARY Audio: none Visual: continuous scroll in channel information display	A secondary infusion is in progress on the affected channel.	None. When secondary VTBI = "0", the infusion will revert to the programmed primary parameters.
Dose n = XX:XX Audio: none Visual: continuous display	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.	None. Infusion will proceed as programmed. Press appropriate channel select to review infusion status.
Anesthesia Mode-Pause Audio: none Visual: continuous scroll in channel information display	PAUSE control was pressed while Anesthesia mode was selected.	Select channel, then press START to resume or press CHANNEL OFF to stop infusion.

Advisory	Meaning	Response
Powering down in X	The CHANNEL OFF	None. To stop power
second(s)	control has been	down, press any control
Audio: prompt	pressed.	except POWER ON.
Visual: timed display in	t	
central information display		1

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.

Prompt	Meaning	Response
Select Option/Cancel Audio: prompt Visual: continuous display	The OPTIONS/EDIT key was pressed.	Select the appropriate System or Channel option. Press CANCEL to exit menu.
24 Hour Limit Exceeded Audio: prompt Visual: continuous display for 3 seconds	A combination of Time Interval and Number of Doses that would exceed the maximum allowable 24 hour Multidose infusion was entered.	Reenter an appropriate combination of Time Interval and Number of Doses to result in a total duration of 24 hours or less.
Enter Rate Value Audio: prompt Visual: continuous display	Begins following press of POWER ON and CHANNEL SELECT controls, or if START control is pressed with rate set to "0".	Press RATE control and enter rate.
Enter VTBI Value Audio: prompt Visual: continuous display	Begins following press of VTBI control, or if START control is pressed with VTBI set to "0".	Press VTBI control and enter VTBI.
Press START Audio: prompt Visual: continuous display	Begins approximately 3 seconds after last press of data entry controls if neither parameter is zero, or approximately 12 seconds after an alarm is cleared, or approximately 2 minutes after PAUSE is pressed.	Press START control.
Select Channe! Audio: illegal keypress Visual: continuous	Begins when attempt is made to set parameters or start infusion prior to selecting a channel.	Press appropriate CHANNEL SELECT control.
Enter All Parameters Audio: none Visual: continuous display for 3 seconds	The START control was pressed prior to entering valid parameters.	Follow prompts and enter valid parameters for all data entry fields.
Enter Start Time Audio: prompt Visual: continuous display	The TIME control was pressed after entering rate and VTBI parameters.	Press ENTER to confirm the current data entry, and move to the next programming step.

Prompt	Meaning	Response
Enter Duration Audio: prompt Visual: continuous display	Begins after entering VTBI in a volume/time infusion.	Time values will change the rate. Enter the desired duration of the infusion or clear to reprogram.
Enter Dose Interval Audio: prompt Visual: continuous display	Part of multidosing infusion set up sequence.	Enter the desired dose interval (range 1-24 hours).
Dose Interval too Short Audio: prompt Visual: continuous scroll for 3 seconds	A multidose interval was entered that is less than the time required to deliver the programmed dose.	Enter an appropriate dosing interval for the Rate and VTBI/dose setting.
Enter Number of Doses Audio: prompt Visual: continuous display	Part of multidosing infusion set up sequence.	Enter the desired number of doses (range 1-24).
Enter Drug Amount Audio: prompt Visual: continuous display	Part of drug calculation infusion set up sequence.	Enter the amount of drug added to the IV fluid container.
Select Unit of Measure Audio: prompt Visual: continuous display	Part of drug calculation infusion set up sequence.	Select the appropriate units for the drug added to the container (gm, mg, mcg, or units).
Enter Diluent Volume Audio: prompt Visual: continuous display	Part of drug calculation infusion set up sequence.	Enter the volume of the drug container in milliliters.
Dose Based on Pt. Wt? Audio: prompt Visual: continuous display	Part of drug calculation infusion set up sequence.	Select "Yes" or "No" based on whether patient weight is required.
Enter Patient Weight Audio: prompt Visual: continuous display	Part of drug calculation infusion set up sequence.	Enter patient weight in kilograms (kg).
Select Time Units Audio: prompt Visual: continuous display	Part of drug calculation infusion set up sequence.	Select appropriate time interval for drug dosing (minutes or hours).
Enter Rate or Dose Audio: prompt Visual: continuous display	Part of drug calculation Infusion set up sequence.	Press RATE and enter infusion rate, or press DOSE and enter the desired drug dosage.
Max Rate Exceeded Audio: illegal key Visual: continuous display	Flow rate parameters result in an infusion rate that exceed the System Configuration's MAX RATE option have been entered.	Enter appropriate flow rate parameters.

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Prompt	Meaning	Response
Press Enter to Confirm Audio: prompt Visual: continuous display	The current parameter entry(s) must be confirmed to enable proceeding to the next programming step.	Press ENTER.
Reenter VTBi Value Audio: Illegal key Visual: continuous display	A VTBI value of ≥1000 mL was entered with a fractional rate value.	Enter a VTBI value <1000 mL or change rate to a non-fractional value.
Press 1-5 or 🚮 or Cancel	The desired option can be selected by pressing the appropriate selection number or pressing to move to the next menu screen.	Select desired entry or Press CANCEL to exit screen.
Reenter VTB: Value Audio: Illegal key Visual: continuous display	A VTBI value of ≥1000 mL was entered with a fractional rate value.	Enter a VTBI value <1000 mL or change rate to a non-fractional value.
Enter Dose Value Audio: prompt Visual: continuous display	Dose control was pressed during a Drug Calculation.	Enter the desired medication dose.
Dose Interval >24 hours Audio: illegal key Visual: continuous display for 3 seconds	During Multidose setup a dose interval >24 hours was entered.	Enter a dose interval that is <24 hours.
Dose Interval too Short Audio: illegal key Visual: continuous display for 3 seconds	During a Multidose setup a dose interval was entered that was < dose delivery time.	Enter a dose interval that is ≥ VTBI/rate.
Invalid Minute Entry Audio: illegal key Visual: continuous display	During a Delayed Start or Multidose setup, a start time or current time entry >59 minutes was selected.	Enter a minute time value ≤59 minutes.
Invalid Hour Entry Audio: illegal key Visual: continuous display	During a Delayed Start or Multidose setup, a start time or current time of day >23 (24 hour clock) was entered.	Enter an hour value ≤23 hours (military) or ≤11 hours (AM/PM).
P/C/S Mode Locked Audio: illegal key Visual: continuous display for 3 seconds	Channel Option #4 was selected when the PCS Mode was locked.	If PCS Mode change is desired contact Biomedical Department.

Prompt	Meaning	Response
Stop Infusion First Audio: illegat key Visual: continuous display	A mode of operation that is incompatible with the current mode of operation was selected from the channel options menu.	Select #5 - stop infusion, to stop the current infusion prior to selecting a different operating mode.
Confirm Time-of-Day Audio: prompt Visual: continuous display	Appears the first time that the Time control is pressed in Delayed Start or Multidose setup following instrument power up.	Confirm that the time-of-day displayed is correct. If not, enter correct time of day.
Mode Not Available Audio: illegal key Visual continuous display for 3 seconds	A selection of a disabled or unavailable option was made from the Channel Options menu.	If a disabled option is required, contact Biomedical Department to enable desired option.
Use to adjust Audio: none Visual: continuous display	The display contrast option was selected from the Systems Option menu.	Use the nor or or controls to adjust the central information display for optimum viewing, then press ENTER.
Max Dose Exceeded Audio: illegal key Visual: continuous display for 3 seconds	In Drug Calculation, a dose that exceeds the displayed limits was entered.	Enter a lower dose or rate value. Verify correct entry of drug amount and diluent volume.
Min Dose Exceeded Audio: illegal key Visual: continuous display for 3 seconds	In Drug Calculation, a dose that is less than the allowable limit was entered.	Enter a higher rate or dose value. Verify correct entry of drug amount and diluent volume.
Invalid Dose Audio: illegal key Visual: continuous display for 3 seconds	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.	Enter an appropriate patient weight value.
Invalid Rate Audio: illegal key Visual: continuous display for 3 seconds	In Drug Calculation, a rate that is less than 0.01 mL/hr was entered.	Enter a higher rate or dose value. Verify correct entry of drug amount and diluent volume.
Check Amount and Diluent Audio: illegal key Visual: continuous display for 3 seconds	In Drug Calculation, a combination of drug amount and diluent volume were entered that resulted in an invalid drug concentration.	Enter appropriate drug amount and diluent volume values.

Prompt	Meaning	Response
Enter Fractional Value Audio: illegal key Visual: continuous display for 3 seconds	During a Secondary infusion setup, a Secondary rate value ≥ 100 mL/hr was entered when the Primary rate was fractional.	Rate value will display zero. Enter a fractional Secondary rate value or change the Primary rate value to a non-fractional value
Delay Mode is Active Audio: illegal key Visual: continuous display for 3 seconds	The Time-of-Day option was selected from the Systems Options menu while a Delayed Start or Multidose infusion was active.	Time-of-Day cannot be changed unless all Delayed Start and Multidose infusions are stopped.
Channel in ICVO Audio: none Visual: continuous display for 3 seconds	An attempt was made to setup a Secondary infusion while the Primary infusion was in KVO.	Reset the Primary rate and VTBI values within the normal operating range.
>24 hr Limit Exceeded Audio: illegal key Visual: Continuous display for 3 seconds	A Multidose rate and VTBI/dose that results in an infusion interval >24 hours.	Change rate and/or VTBI values such that the time required for infusion is <24 hours.
Press OFF or ENTER Audio: prompt Visual: Continuous display	A Multidose or Drug Calculation infusion has been turned off. Pressing ENTER retains the infusion program; pressing OFF deletes the program.	Press ENTER retains the program; pressing OFF deletes the program and returns the channel to normal operation.
Delay Exceeds 8 Hours Audio: illegal key Visual: continuous display for 3 seconds	A Start Time >8 hours ahead of current time was selected for a Multidose infusion.	Enter a Start Time 8 hours or less ahead of current time-of-day.
Press CANCEL to Exit Audio: prompt Visual: continuous display	The Systems Options menu was accessed.	Select an option or press CANCEL to return to the main display menu.
Press ENTER to Continue Audio: prompt Visual: continuous display	The channel was selected following a completed Multidose infusion.	To continue the same infusion, press ENTER to gain access to the Multidose infusion setup screen. Enter the desired Start time and press START.

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.

Alarm	Meaning	Response
CHECK ECD Audio: alarm Visual: continuous scroll, channel alarm indicator flashes	START control pressed with VTBI set to "ALL" and ECD not connected, or ECD has been disconnected during an "ALL" infusion, or ECD has failed. Infusion stops.	Connect or replace ECD, then press START control.
CHECK IV SET Audio: alarm Visual: continuous scroll, channel alarm indicator flashes	Administration set not properly installed, infusion is not started on affected channel.	Close roller clamp, remove and reinstall administration set, close door, open roller clamp.
DOOR OPEN Audio: alarm Visual: continuous scroll, channel alarm indicator flashes	Door was opened during an infusion. Infusion stops on affected channel.	Close door, press appropriate CHANNEL SELECT control, then press START control.
RESTART CHANNEL Audio: alarm Visual: continuous scroll, channel alarm indicator flashes	Door was opened during an infusion and then closed. Infusion stops on affected channel.	Press the appropriate CHANNEL SELECT control, then press START control.
AIR-IN-LINE Audio: alarm Visual: continuous scroll, channel alarm indicator flashes	Air has been detected in set during an infusion. Infusion stops on affected channel.	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.
OCCLUDED-PATIENT SIDE Audio: alarm Visual: continuous scroil, channel alarm indicator flashes	Increased back pressure sensed while infusing in the pump delivery mode. Infusion stops on affected channel.	Clear occlusion, press appropriate CHANNEL SELECT control, then press START control.
OCCLUSION Audio: alarm Visual: continuous scroll, channel alarm indicator flashes	Occlusion is detected on either fluid or patient side while infusing in Controller Delivery mode. Infusion on affected channel stops.	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.)

Alarm	Meaning	Response
PARTIAL OCCLUSION- FLUID SIDE Audio: alarm Visual: continuous scroll, channel alarm indicator flashes	Partial upstream occlusion detected while infusing in Pump Delivery mode. Infusion on affected channel stops.	Remove cause of reduced flow in fluid side of administration set, press appropriate CHANNEL SELECT control, then press START control.
OCCLUSION-FLUID SIDE Audio: alarm Visual: continuous scroll, channel alarm indicator flashes	Upstream occlusion sensed while infusing in pump delivery mode. Infusion on affected channel stops.	Clear occlusion in fluid side of administration set, press appropriate CHANNEL SELECT control, then press START control.
"FLO-STOP" OPEN/ CLOSE DOOR Audio: alarm Visual: continuous scroll, channel alarm indicator flashes	Flo-Stop open (in free-flow position) with door open.	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.)
BATTERY DISCHARGED Audio: malfunction Visual: Channel Display: • Rate Display flashes " " " • "PAUSE" scrolls • ALARM and STANDBY indicators flash Central Display: BATTERY DISCHARGED	Low battery voltage detected. Infusions PAUSE on all currently operating channels.	Connect AC power cord to power source and wait for "PAUSED" to appear in the Central Display. Select each channe! and press START to resume the infusion(s), or press the CHANNEL OFF control to power down the PC-2TX.
ALL CHANNELS PAUSED PLUG IN TO RESUME OR PRESS OFF TO POWER DOWN		

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).

Malfunction	Meaning	Response
SYSTEM MALFUNCTION Audio: malfunction Visual: Channel Display: Rate displays flash "" Channel ALARM and STANDBY indicators flash Central Display: For Battery Operation SYSTEM MALFUNCTION ALL CHANNELS STOPPED PRESS CHANNEL OFF TO POWER OFF CODE NUMBER: "XXX" For AC Power Operation SYSTEM MALFUNCTION ALL CHANNELS STOPPED PRESS CHANNEL OFF TO RESET PUMP OR UNPLUG PUMP AND PRESS OFF TO POWER OFF CODE NUMBER: XXX"	A software-detected malfunction has occurred. Depending on the type of malfunction, infusion stops on the affected channel or all channels.	Press CHANNEL OFF control to turn off the PC-2TX. Replace with an operational instrument.
CENTRAL DISPLAY FAILURE Audio: malfunction Visual: Channel Display: Previous Infusion rate Channel ALARM and STANDBY indicators flash Central Display: Displayed data may be corrupted Scrolling Display: Stops scrolling, display data will be fixed	A software-detected malfunction has occurred on the central display. Infusion stops on all channels.	Press CHANNEL OFF control to turn off the PC-2TX. Replace with an operational instrument.

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)

Weiaht:

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 Ø

Battery Operation:

With new, fully charged batteries, approximately 8 hours

with one channel operating at 125 mL/hr before a

"BATTERY DISCHARGED" 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 psi (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

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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 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-2TX 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: Storage Temperature:

+5°C to +40°C -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, bacterlocidal, 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.

NOTES

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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:

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(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.

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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 San Diego, CA 92121 Telephone: 619-458-7000 Facsimile: 619-458-7760

ALARIS Medicai Canada, Ltd.

5975 Whittle Road, Suite 120 Mississauga, Ontario L5N 5M4 CANADA Telephone: 905-507-1131 Facsimile: 905-507-6664

ALARIS Medical Australia Pty., Ltd.

Unit 8, 167 Prospect Hwy. Seven Hills, N.S.W. 2147, P.O. Box 355 AUSTRALIA

Telephone: 61-2-9838-0255 Facsimile: 61-2-9674-4444

ALARIS Medical UK Ltd.

The Crescent Jays Close Basingstoke Hampshire, RG22 4BS Telephone: (44) 1256 388200 Facsimile: (44) 1256 388388

ALARIS Medical Systems

65 Chulia Street, #40-04 OCBC Centre Singapore 049513 Telephone: 65-534-5351 Facsimile: 65-534-5516

