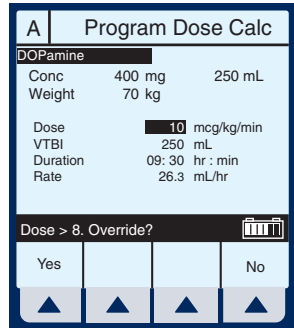


Because the Dose falls outside the soft limits, the infuser beeps three times (Invalid Key Warning), and generates the error message:

“Dose > 8. Override?”

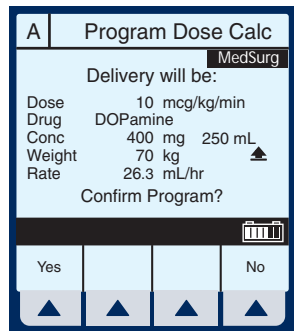


13 Select ▲ [Yes].

NOTE: A SOFT limit override will be recorded in the History Events Log.

This will bring up the PROGRAM CONFIRMATION screen.

14 If Dose, Drug, Conc., Weight & Rate appear correct, select ▲ [Yes] to begin program.



NOTE: If the selected drug has been pre-programmed with dosing units and concentration, the concentration drug amount or diluent volume cannot be changed whether delivering or stopped. The only way to change to a different concentration is to clear the program.

However, if selected drug has not been pre-programmed (or still operating with the DDL), the concentration can be changed for a program.

For Systems With Hospira MedNet™ Software

The Main Delivery screen appears displaying the information just entered.

NOTE: The Program Type and Drug are displayed as well as the Dose Rate and Dose Units.

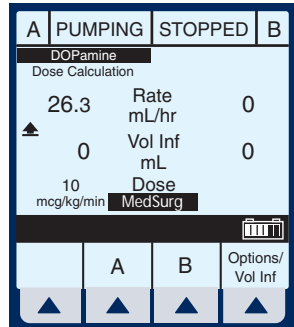
A	PUMPING	STOPPED	B
DOPamine			
Dose Calculation			
26.3	Rate mL/hr	0	
0	Vol Inf mL	0	
10	Dose mcg/kg/min	MedSurg	
	A	B	Options/ Vol Inf

Dose Calc (mg/min on B)

DOSE CALCULATION- Allows programming Dose Rates in alternative units of measure. Dose Calculation can be used in Simple Delivery, Loading Dose, and Multistep.

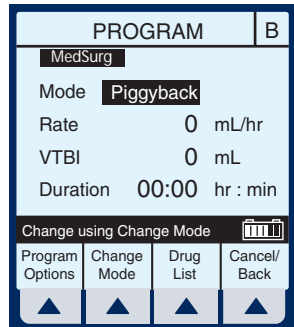
Clear ALL settings when changing patients or multiple programming parameters.

- 1 Select ▲ [B] at the Main Delivery Screen.



The Line B Programming screen appears.

- 2 Select ▲ [Drug List].



For Systems With Hospira MedNet™ Software


The Drug List Screen appears, in mainly alphabetical order.

NOTE: Default entry is “No Drug Selected”.

MedSurg		B
No Drug Selected		
Albumin 5%	25 grams/500 mL	
Aldelesleukin	2.6 mg/50 mL	
Alfentanil	10 mg/250 mL	
Alteplase	50 mg/50 mL	
Alteplase	100 mg/100 mL	
Amikacin	100 mL	
Amiodarone	150 mg/100 mL	

Select, then Enter

Page Up	Page Down	Enter	Cancel/Back
▲	▲	▲	▲

- 3** Use  to highlight desired drug name.

When list does not contain desired generic drug name or group name select

▲ [Page Down] (or
▲ [Page Up]) until it shows,

then use  to highlight choice.

MedSurg		B
Labetalol	200 mg/200 mL	
Lepirudin	100 mg/250 mL	
Lidocaine	1 grams/250 mL	
Lidocaine	2 grams/500 mL	
Lidocaine	4 grams/500 mL	
Liposyn 10%	100 mL	
Liposyn 20%	500 mL	
Milrinone	200 mcg/100 mL	

Select, then Enter

Page Up	Page Down	Enter	Cancel/Back
▲	▲	▲	▲

- 4** Select ▲ [Enter] to indicate selection and advance to the Program Selection screen.

The Select Program screen for Line B appears.

- 5** Select ▲ [Choose] to continue.

PROGRAM		B
Lidocaine		
Standard Program		
Loading Dose		
Multistep		

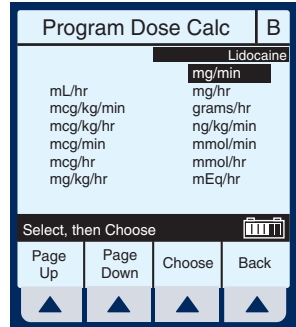
Select, then Choose

		Choose	Back
▲	▲	▲	▲


If selected drug has been programmed with established dosing units and concentration, skip to step 8.

The Program Dose Calc screen appears.

NOTE: Cursor defaults to package insert (or hospital) recommended dose units associated with the selected drug.

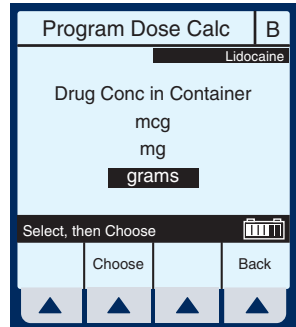


6 Select ▲ *[Choose]* to continue.


Or, use  to change the units to use in the delivery.

If desired, select ▲ *[Page Down]* to see more units of measure.

The Container Concentration Selection screen appears whenever the selected Dose Units are gram-based (e.g., grams, mg, mcg, or ng) otherwise this screen is skipped.




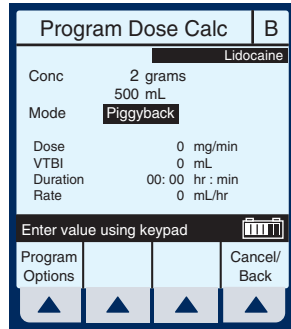
NOTE: Cursor defaults to package insert recommended concentration units associated with the selected drug.





7 Select ▲ *[Choose]* to continue. Or, use  to change the Container Concentration units to use in the delivery.

For Systems With Hospira MedNet™ Software



The next page of the Program Dose Calc screen appears to provide for entry of delivery program parameters.

- 8** Use keypad to enter desired values. Once entered, use  to highlight the next field.




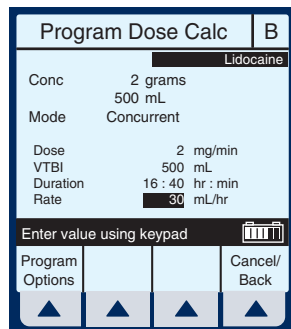
Program Dose Calc		B
Lidocaine		
Conc	2 grams	
	500 mL	
Mode	Piggyback	
Dose	0 mg/min	
VTBI	0 mL	
Duration	00:00 hr : min	
Rate	0 mL/hr	
Enter value using keypad 		
Program Options		Cancel/Back
		





NOTE: If selected drug has established Rule Sets (e.g., non-blank concentration), the Mode field will be highlighted upon entry to this screen.

- 9** To change the Piggyback Delivery Mode default, scroll down to Mode using , then select  [[Change Mode](#)].

NOTE: Delivery Mode Option is available on Line B, its default is Piggyback, and the Weight field is gone.

- 10** Continue entering desired values using the keypad. Use  to advance to the next field.



Program Dose Calc		B
Lidocaine		
Conc	2 grams	
	500 mL	
Mode	Concurrent	
Dose	2 mg/min	
VTBI	500 mL	
Duration	16:40 hr : min	
Rate	30 mL/hr	
Enter value using keypad 		
Program Options		Cancel/Back
		

NOTE: When entering the RATE, with a VTBI value entered, the DOSE and DURATION fields are automatically updated. To understand the Automatic Calculation feature, see *Examples of Automatic Calculation* on page 6-10.

NOTE: The Duration field temporarily changes to dashes when the computed value is larger than what can be displayed.

11 Continue entering the RATE value, if desired.

NOTE: As Rate is entered, the Duration and Dose are automatically adjusted as individual numbers are entered.

NOTE: If the Duration value is changed, the Rate and Dose are automatically adjusted.

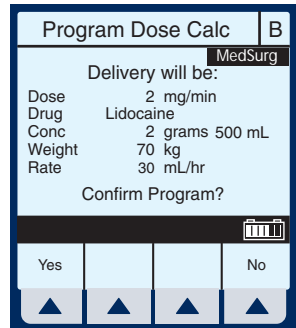
NOTE: At this point, programming is complete unless ▲ [Program Options] are desired. See Section 6, Additional Features, for more information.

CAUTION: VERIFY ALL VALUES BEFORE STARTING INFUSION.

12 To start the delivery, press



This will bring up the PROGRAM CONFIRMATION screen.



13 If Dose, Drug, Conc., Weight, & Rate appear correct, select ▲ [Yes] to begin program.

NOTE: If the selected drug has been pre-programmed with dosing units and concentration, the concentration drug amount or diluent volume cannot be changed whether delivering or stopped. The only way to change to a different concentration is to clear the program.

However, if selected drug has not been pre-programmed (or still operating with the DDL), the concentration can be changed for a program.

For Systems With Hospira MedNet™ Software

Upon **(START)**, the Main Delivery Screen shows delivery status for both A and B lines.

NOTE: See *Delivery Rate Range* in *Section 9*. The ratio of concurrent rates has recommendations specified on page 1-7.


A	STOPPED	PUMPING	B
DOPamine		Lidocaine	
Dose Calculation		Dose Calculation	
26.3	Rate mL/hr	30	
▲			
1	Vol Inf mL	0.1	
mcg/kg/min	Dose MedSurg	2	
		mg/min	
	A	B	Options/ Vol Inf
▲	▲	▲	▲

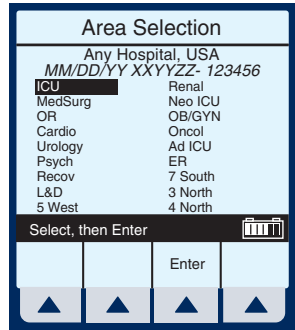
Loading Dose

LOADING DOSE- Allows programming of an initial infusion rate for a specific volume, followed automatically by a maintenance rate from the same container (e.g., a fluid challenge). If Dose Calc is used, the Loading Dose and Maintenance Dose are in the same unit of measure, over the same period of time (mcg/min), from the same container.



Clear ALL settings when changing patients or multiple programming parameters.

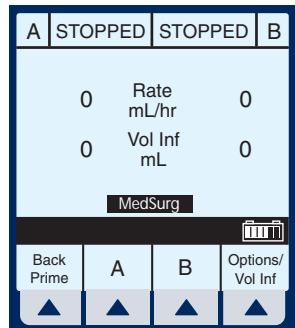
The Area Selection screen will appear if your system has been programmed with the MedNet accessory.

Use  to select CCA and bring you to the Main Delivery Screen.



NOTE: To change CCA while infusing, see *Changing CCA While Infusing on page 6-12.*

- 1 Select  [A] (or  [B]) at the Main Delivery screen.



For Systems With Hospira MedNet™ Software

The selected Line (A or B) Programming screen appears.

- 2 Select ▲ [Drug List].

A	PROGRAM	
MedSurg		
Rate	0 mL/hr	
VTBI	0 mL	
Duration	00:00 hr : min	
Enter Value using keypad		
Program Options	Drug List	Cancel/Back
▲	▲	▲

The Drug List Screen appears, in mainly alphabetical order.

NOTE: Default entry is “No Drug Selected”. This process will guide you through a “fluid challenge”, so “No Drug Selected” will be entered.

- 3 Select ▲ [Enter] to indicate selection and advance to the Program selection screen.

A	MedSurg		
No Drug Selected			
Albumin 5%	25 grams/500 mL		
Aldesleukin	2.6 mg/50 mL		
Alfentanil	10 mg/250 mL		
Alteplase	50 mg/50 mL		
Alteplase	100 mg/100 mL		
Amikacin	100 mL		
Amiodarone	150 mg/100 mL		
Select, then Enter			
Page Up	Page Down	Enter	Cancel/Back
▲	▲	▲	▲

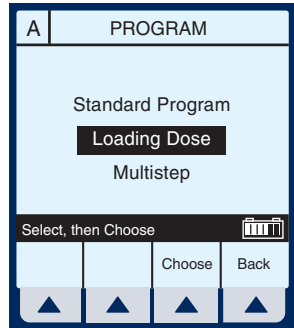
The Select Program screen for Line A (or B) appears.

NOTE: This example shows line A being programmed.

A	PROGRAM	
Standard Program		
Loading Dose		
Multistep		
Select, then Choose		
	Choose	Back
▲	▲	▲


4 Use  to scroll down to Loading Dose.

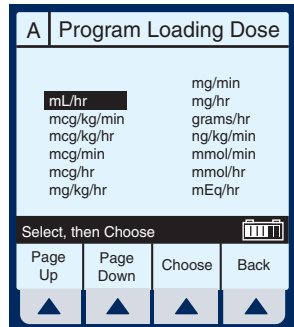
5 Select  [Choose] to continue.




The next page of the Program Loading Dose screen appears.

6 Select  [Choose] to continue.


Or, use  to change the units to use in the delivery.

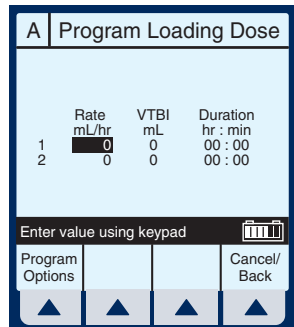


If desired, select  [Page Down] to see more units of measure.

The Loading Dose Programming screen appears.

7 The default field is Rate. Since a “Fluid Challenge” is being performed in this example,


press  to advance to the VTBI field.







For Systems With Hospira MedNet™ Software

- 8 Enter value using keypad.

A Program Loading Dose			
	Rate mL/hr	VTBI mL	Duration hr : min
1	0	250	00 : 00
2	0	0	00 : 00


Enter value using keypad 





Program Options			Cancel/Back
			


- 9 Use  to highlight the next field.

- 10 Enter Duration using keypad.
The Rate value is automatically calculated. To understand the Automatic Calculation feature, see *Examples of Automatic Calculation* on page 6-10.

A Program Loading Dose			
	Rate mL/hr	VTBI mL	Duration hr : min
1	500	250	00 : 30
2	0	0	00 : 00


Enter value using keypad 





Program Options			Cancel/Back
			

- 11 After the values for loading dose Step-1 are entered, use  to highlight the maintenance dose, Step-2.

NOTE: The Loading Dose program has two steps. The first is the loading dose followed by the maintenance dose. These words will appear on the main screen as each step is delivered.

A Program Loading Dose			
	Rate mL/hr	VTBI mL	Duration hr : min
1	500	250	00 : 30
2	75	0	00 : 00

Enter value using keypad 

Program Options			Cancel/Back
			

12 Enter the set of desired values for Step-2 of the program.

13 Select ▲ [Program Options] to select a *Delayed Start or Standby*.

NOTE: At this point, programming is complete unless ▲ [Program Options] are desired. See Section 6, *Additional Features*, for more information.

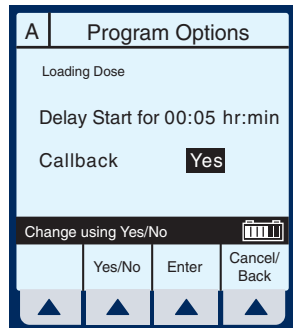
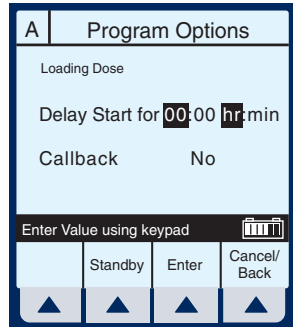
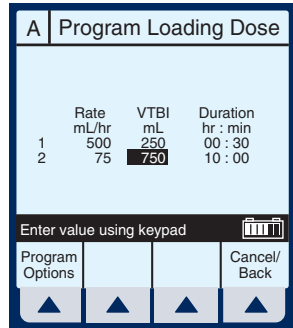
NOTE: Nurse Callback enables an alarm when a change in the delivery on a line occurs such as completing Step-1 and starting Step-2. Or on line B, a piggyback delivery is completed and line A is starting its delivery.

14 Enter a delay time (less than 24 hours) using the keypad.

NOTE: Not available if a delivery is taking place on the line.

NOTE: Nurse Callback cannot be changed while a delivery is taking place on the line.

15 Select ▲ [Enter] to accept the changes and return to the Program Loading Dose screen.



For Systems With Hospira MedNet™ Software

NOTE: ▲ [Cancel/Back] returns the fields to their original value and displays the previous screen.

16 To start the delivery, press **START**.

This will bring up the PROGRAM CONFIRMATION screen.

CAUTION: VERIFY ALL VALUES BEFORE STARTING INFUSION.

17 If Drug and Rate appear correct, select ▲ [Yes] to begin program.

The Main Delivery Screen appears.

NOTE: The words “DELAYED” and “Loading Dose” appear in the upper-left corner. These indicate the options which have been selected.

After the programmed delay period has expired, the Plum A+ starts “Pumping”. This is indicated where “Delayed” previously was displayed.

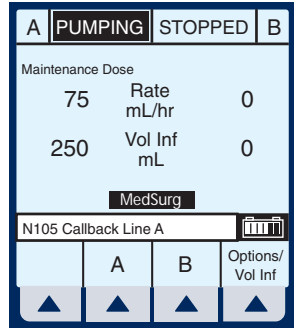
A	Program Loading Dose		
	MedSurg		
	Delivery will be:		
Drug	No Drug Selected		
Rate	500 mL/hr		
VTBI	250 mL		
	▲		
	Confirm Program?		
	☰		
Yes			No
▲	▲	▲	▲

A	DELAYED	STOPPED	B
	Loading Dose		
▲	500	Rate mL/hr	0
	0	Vol Inf mL	0
	MedSurg		
	☰		
	A	B	Options/ Vol Inf
▲	▲	▲	▲

A	PUMPING	STOPPED	B
	Loading Dose		
	500	Rate mL/hr	0
	0	Vol Inf mL	0
	MedSurg		
	☰		
	A	B	Options/ Vol Inf
▲	▲	▲	▲

After the Step-1 has completed, the Main Delivery Screen changes to the second step.

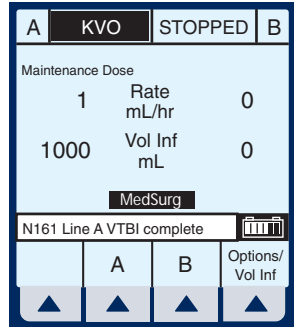
NOTE: A flashing “Callback Line A” message and the audio alarm sound indicates activation of that option.



- 18** The user should acknowledge the Callback message and stop the audio alarm by pressing **SILENCE**.

Upon completion of delivery, the screen shows a flashing “Line A VTBI complete” message and the audible alarm sounds.

NOTE: The KVO rate will change to the rate of 1 mL/hr or less depending on delivery rate and “Pumping” mode changes to “KVO”. If Continue Rate option was selected, pumping continues at original rate.



- 19** Press **SILENCE** to stop alarm sound.


NOTE: Warning message continues to flash and audio alarm will return after a two minute period of silence, unless delivery is stopped or VTBI of last line is changed.

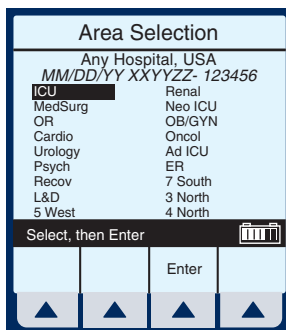
Multistep Programming

MULTISTEP- Allows a sequential program to deliver up to 10 steps; fluid volumes and delivery rates may be programmed for each step. The program may be entered based on Rate and Volume or Volume and Time. If Dose Calc is used, the delivery steps are in the same unit of measure, over the same period of time, from the same container.


Clear ALL settings when changing patients or multiple programming parameters.

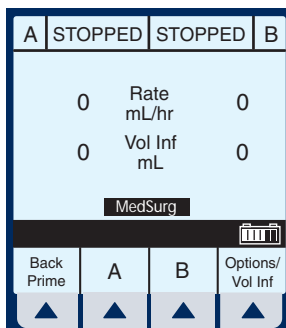
The Area Selection screen will appear if your system has been programmed with the MedNet accessory.

Use  to select CCA and bring you to the Main Delivery Screen.



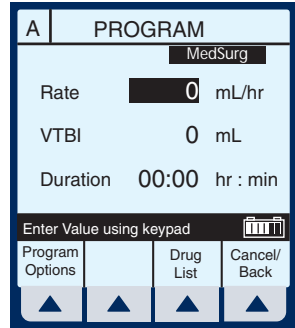
NOTE: To change CCA while infusing, see *Changing CCA While Infusing* on page 6-12.

- 1 Select  [A] at the Main Delivery screen.




The Line A Programming screen appears.

- 2 Select ▲ [Drug List].



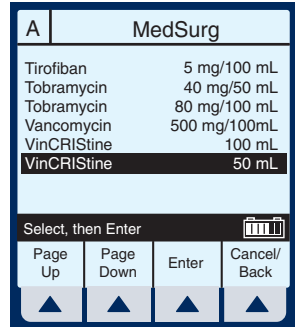
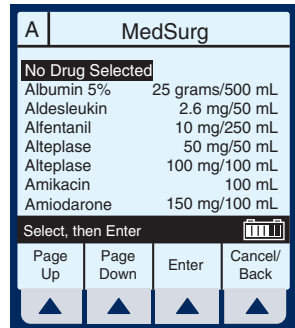
The Drug List Screen appears, in mainly alphabetical order.

NOTE: Default entry is “No Drug Selected”.

- 3 Use  to highlight desired drug name.

When list does not contain desired drug name or drug class name, select ▲ [Page Down] (or ▲ [Page Up]) until it shows, then use

 to highlight choice.

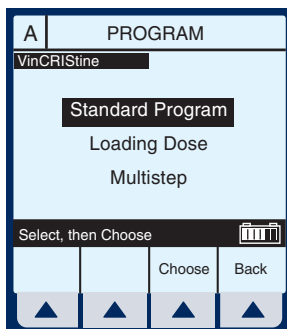


- 4 Select ▲ [Enter] to indicate selection and advance to the Program Selection screen.

For Systems With Hospira MedNet™ Software

The Select Program screen for Line A (or B) appears.

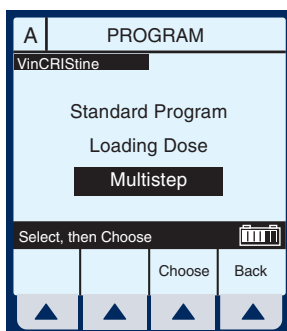
NOTE: This example shows line A being programmed.



5 Use  to scroll down to Multistep.


6 Select  [Choose] to continue.

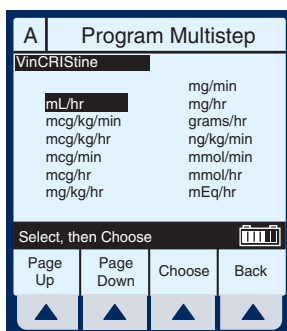
If selected drug has been programmed with established dosing units and concentration, skip to step 9.



The Program Multistep screen appears.

NOTE: Cursor defaults to package insert recommended dose units associated with the selected drug.

7 Use  key to highlight the units to use in the delivery.



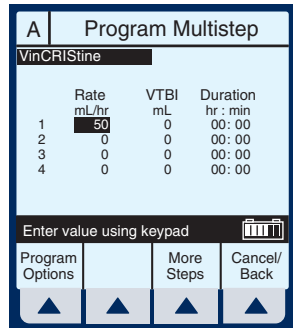
8 Select  [Choose] to continue.

If desired, select  [Page Down] to see more units of

measure.

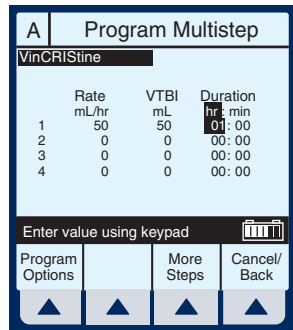
The Multistep Programming screen appears.


- 9** Rate is the default field. Enter value using keypad.



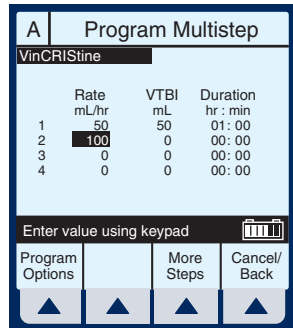
- 10** Use  to highlight the Duration or VTBI field.

NOTE: The VTBI value is automatically computed when the Duration value is entered. If VTBI is entered, the Duration value is automatically computed.



- 11** Use  to drop down to Step-2, Rate field.

- 12** Enter the set of desired values for Step-2 of the program. Continue process for each additional Step.



For Systems With Hospira MedNet™ Software

NOTE: When Step-4 is programmed, using [SELECT] to advance will highlight another item on this screen.

- 13** When Step-4 is programmed, select
▲ [\[More Steps\]](#) to program up to 10 Steps.

NOTE: Using [SELECT] will not advance you to the additional steps.

A Program Multistep			
VinCRIStine			
	Rate mL/hr	VTBI mL	Duration hr : min
1	50	50	01 : 00
2	100	825	08 : 15
3	75	75	01 : 00
4	50	50	01 : 00
Enter value using keypad			<input type="text"/>
Program Options		More Steps	Cancel/Back
▲	▲	▲	▲

- 14** To set up Steps 5 through 10, enter desired values as performed for Steps 1 through 4.

To see the previous steps, select ▲ [\[Prev Steps\]](#).

A Program Multistep			
VinCRIStine			
	Rate mL/hr	VTBI mL	Duration hr : min
5	0	0	00 : 00
6	0	0	00 : 00
7	0	0	00 : 00
8	0	0	00 : 00
9	0	0	00 : 00
10	0	0	00 : 00
Enter value using keypad			<input type="text"/>
Program Options		Prev Steps	Cancel/Back
▲	▲	▲	▲

- 15** To start the delivery, press

START.

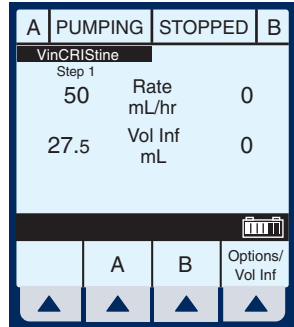
This will bring up the Confirmation screen.

CAUTION: VERIFY ALL VALUES BEFORE STARTING INFUSION.

A Program Multistep			
MedSurg			
Delivery will be:			
Drug	VinCRIStine		
Rate	50 mL/hr		
VTBI	50 mL		
▲			
Confirm Program?			
Enter value using keypad			<input type="text"/>
Yes			No
▲	▲	▲	▲

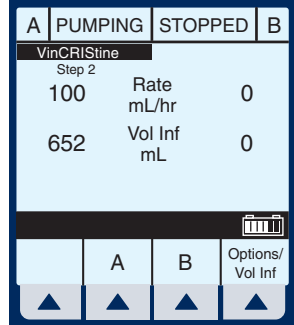
The Main Delivery Screen displays Step-1 in the upper-left corner.

NOTE: In units other than mL/hr, the Dose rate and units also will be displayed.



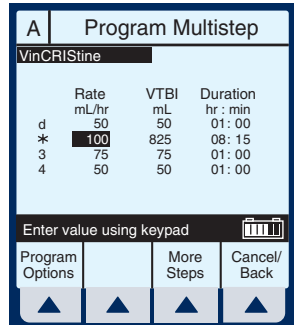
Example of Multistep Screen Pumping on Step-2.

- 16** To change a program parameter while pumping, select ▲ [A].



NOTE: The “*” in a Step number field indicates the step is delivering or “d” indicates each completed step.

- 17** Enter a value using the keypad.



For Systems With Hospira MedNet™ Software

If Rate value is changed, the Duration will automatically change.

NOTE: Only the current delivering step and future steps can be changed.

18 To start the delivery, press

START.

This will bring up the Confirmation screen.

CAUTION: VERIFY ALL VALUES BEFORE STARTING INFUSION.

NOTE: The Values are now updated on the Main Delivery Screen.

The infuser reverts to KVO when last Step completes.

The last step can be restarted by entering a new VTBI value.

A	Program Multistep		
VinCRISStine			
	Rate mL/hr	VTBI mL	Duration hr : min
d	50	50	01 : 00
*	125	825	06 : 36
3	75	75	01 : 00
4	50	50	01 : 00
Enter value using keypad			
Program Options		More Steps	Cancel/Back
▲	▲	▲	▲

A	Program Multistep		
Delivery will be: MedSurg			
Drug	VinCRISStine		
Rate	125 mL/hr		
VTBI	825 mL ⚠		
Confirm Program?			
Yes			No
▲	▲	▲	▲

A	PUMPING	STOPPED	B
VinCRISStine			
Step 2			
125	Rate mL/hr	0	
658	Vol Inf mL	0	
	A	B	Options/ Vol Inf
▲	▲	▲	▲

SECTION 6

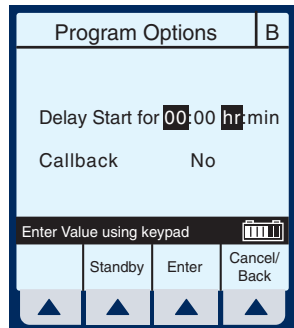
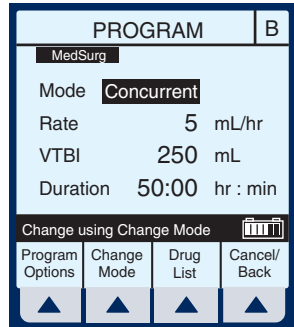
Additional Features

Simple Delivery Using Delayed Start

- 1 Before or after entering the simple delivery program, select ▲ *[Program Options]*.

NOTE: To program a Delayed Start using an advanced program (i.e., Dose Calc) you must first select which line you want (A or B), next select ▲ *[Drug List]*, and then ▲ *[Program Options]*. If you program the Delayed Start first, it will be cleared upon entry into Select Program mode.

The Default screen for Program Options appears.



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2 Enter values for desired hours and/or minutes.


3 Select ▲ [Enter] to confirm delayed start.


CAUTION: VERIFY ALL VALUES BEFORE STARTING INFUSION.

4 Press **START** to confirm programming.

Line B is delayed for the time entered.

NOTE: Delayed line drip indicator is solid, not flashing. It will begin flashing when actually pumping.


Program Options		B
Delay Start for 01:00 hr:min		
Callback No		
Enter Value using keypad 		
Standby	Enter	Cancel/Back
▲	▲	▲

A	PUMPING	DELAYED	B
△	125	Rate mL/hr	5 △
	850	Vol Inf mL	0 △
MedSurg 			
	A	B	Options/ Vol Inf
▲	▲	▲	▲




Piggyback with Nurse Callback

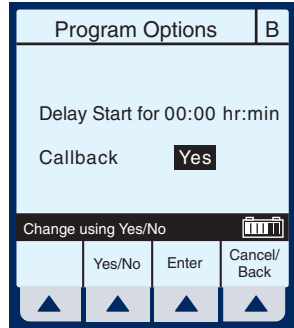
1 After programming in desired values for both lines, select ▲ [Program Options].

NOTE: To set a nurse callback, the infuser must be stopped. This function can be selected either before or after entering the Piggyback delivery program.

PROGRAM		B
MedSurg		
Mode	Piggyback	
Rate	200	mL/hr
VTBI	100	mL
Duration	00:30	hr : min
Enter value using keypad 		
Program Options	Drug List	Cancel/Back
▲	▲	▲

The default screen for Program Options appears.

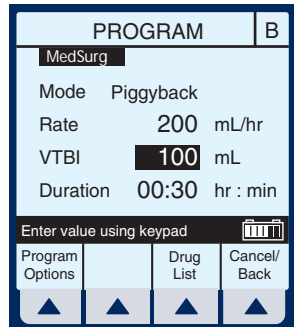
Use  to highlight “Callback” field and select  [Yes/No], if necessary to obtain “Yes”, then select  [Enter].



NOTE: Callback default of Yes or No is a biomedical setting and must be configured using the Hospira MedNet accessory.

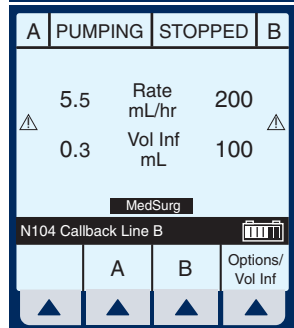
CAUTION: VERIFY ALL VALUES BEFORE STARTING INFUSION.

- 2 Press  to confirm program setting and return to Main Delivery screen.



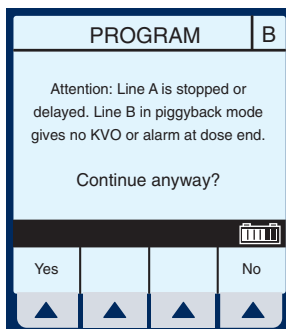
At end of Piggyback delivery, with Callback enabled for the line, Callback alarm is issued.

- 3 Press  to clear alarm.



Possible Non-Delivery Programmed

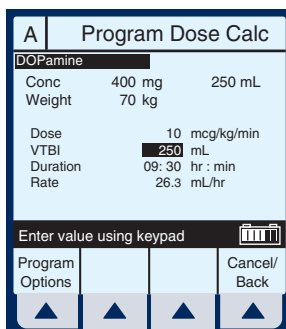
NOTE: Whenever a valid [START] key is pressed, the device checks the delivery program(s) for non-delivery conditions (such as Line B Piggyback without Line A or delayed start) that could permit a period of non-delivery. If so, the display presents this warning screen.



- 1 Select ▲ [Yes] to continue with delivery. Or, select ▲ [No] to cancel.

Using the Standby Feature

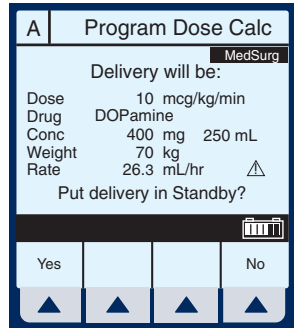
Standby is a feature that enables the clinician to program the infuser up to 23:59 minutes in advance of Starting.



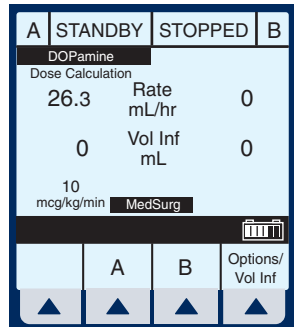
- 1 If Line A is infusing, select ▲ [A] or ▲ [B] to access program screen of line to be placed on Standby.
- 2 Select ▲ [Program Options].
- 3 Select ▲ [Standby].

- 4** Confirm the information displayed is correct, then select ▲ [Yes] to place program on Standby mode.

NOTE: This example screen shows a Dose Calculation Program with a Standby. It looks similar to the Program Confirmation screen with the substitution of “Put delivery in Standby” replacing “Confirm Program”. Selecting ▲ [Yes] confirms both the Program and the Standby.

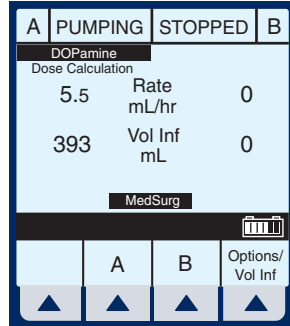



- 5** Press **(START)** to remove Standby and start the infusion.



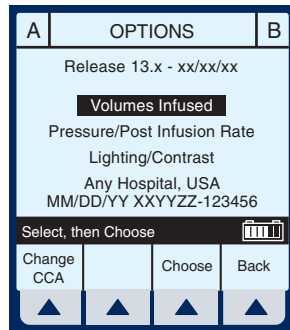
Select Option- Volumes Infused, Pressure/Post Infusion Rate, and Lighting/Contrast

- 1 To select Options Screen, select ▲ [Options/Vol Inf].




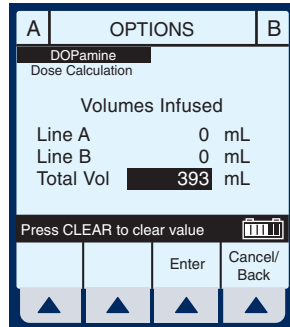
- 2 Use  to highlight an option.



- 3 Select ▲ [Choose] to select the Volumes Infused screen.

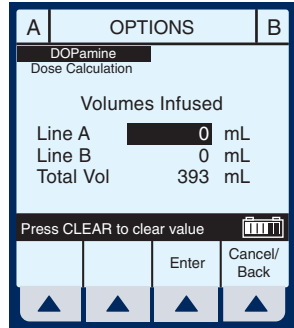


This will bring up the Volumes Infused screen which defaults to Total Volume.



- 4 Use  to scroll to Line A or B.

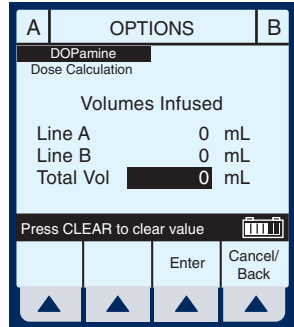


- 5** To reset Line A (or B) Volume Infused, use  to highlight and press .



- 6** To restore the cleared quantity, select ▲ [\[Cancel/Back\]](#).

- 7** To reset all volumes, use  to highlight Total Vol, then press .

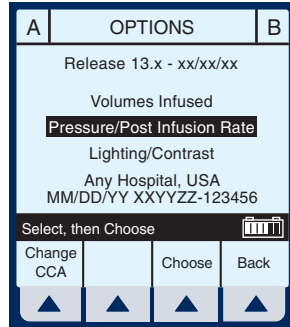


- 8** To restore all quantities, select ▲ [\[Cancel/Back\]](#) softkey.

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9 When clearing of quantities is completed, select ▲ *[Enter]* to return to the Main Delivery screen.

10 Select ▲ *[Options/Vol Inf]* from the Main Delivery screen to return to the Options screen.

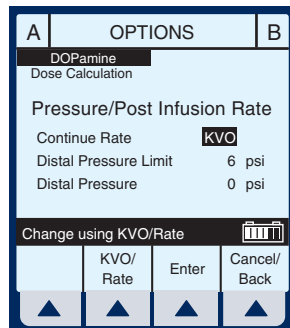


11 Use  to highlight the Pressure/Post Infusion Rate option.

12 Select ▲ *[Choose]* to continue.

NOTE: Prior to changing Pressure/Post Infusion Rate, infuser must be stopped.

13 Use  to highlight Continue Rate or Distal Pressure Limit field.



14 Continue Rate allows a choice when VTBI is completed. Select ▲ *[KVO/Rate]*.

- KVO- The infuser will revert to a fixed KVO of 1 mL/hr or the last programmed Rate, whichever is less.
- Rate- The infuser will continue at the Rate programmed.

NOTE: Option will be for both line A and line B selections.

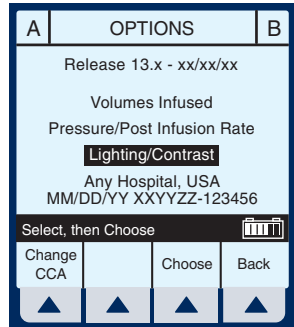
15 To change Distal Pressure Limit when highlighted,


enter value between 0.1 and 15 psi.

- 16** Select ▲ *[Enter]* to keep changes and return to the Main Delivery screen, or ▲ *[Cancel/Back]* to restore original values and return to the Options screen.


NOTE: Continue Rate default of KVO or Rate must be configured using the Hospira MedNet software.

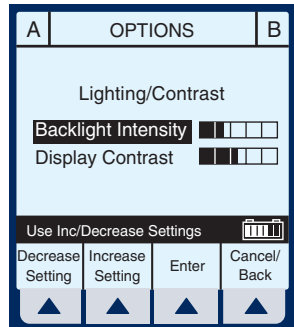
- 17** Select ▲ *[Options/Vol Inf]* from the Main Delivery screen to return to the Options screen.



- 18** Use  to highlight Lighting/Contrast Option.

- 19** Select ▲ *[Choose]* to continue.

- 20** Press  to highlight Backlight Intensity or Display Contrast.



- 21** While viewing display for desired effect, select either ▲ *[Increase Setting]* or ▲ *[Decrease Setting]* to change level.

- 22** Select ▲ *[Enter]* to keep change(s) and return to the Main Delivery screen, or ▲ *[Cancel/Back]* to restore previous settings and return to the Options screen.

Variable Rate Cap

NOTE: Variable Rate Cap is used to set the maximum rate values to be accepted by the device. The clinician cannot change it once it has been programmed. It must be configured using the Hospira MedNet software.

Examples of Automatic Calculation

AT STARTUP

Initial programming allows the clinician to enter two of the three programming parameters (Rate, VTBI, or Duration) and the third is automatically calculated. (*Refer to table below*)

1st Action	2nd Action	[AUTOCALC]
enter RATE	enter VTBI	[DURATION]
enter VTBI	enter DURATION	[RATE]
enter RATE	enter DURATION	[VTBI]

WHILE RUNNING (*TITRATION*)

Changing two parameters after startup of the infusion will allow for the re-calculation of the third parameter.

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NOTE: VTBI will not be re-calculated if the Rate and Duration are changed. VTBI must be cleared and then the new VTBI re-entered. The new VTBI will automatically calculate a new Rate.

1st Action	2nd Action	[AUTOCALC]
change RATE	keep VTBI	[DURATION]
change RATE	change VTBI	[DURATION]
change VTBI	keep RATE	[DURATION]
change DURATION	keep VTBI	[RATE]
change VTBI	change DURATION	[RATE]
change RATE	change DURATION	<i>Recalculates [RATE] based on previous VTBI and new DURATION</i>

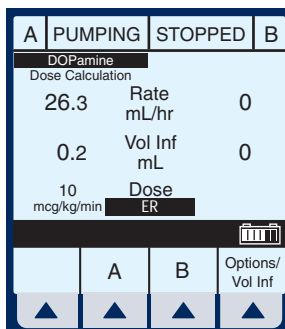
AT KVO

Audible KVO alarm will sound, clinician will need to re-set the appropriate settings.

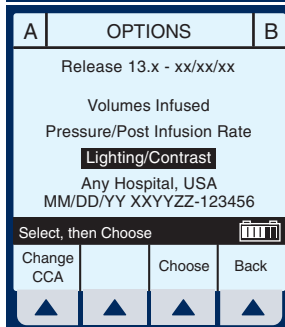
1st Action	2nd Action	[AUTOCALC]
enter VTBI	keep RATE	[DURATION]
enter DURATION	keep RATE	[VTBI]
change RATE	enter VTBI	[DURATION]
enter DURATION	enter VTBI	[DURATION]
enter VTBI	enter DURATION	[RATE]
change RATE	change DURATION	[VTBI]


Changing CCA While Infusing

- 1 Select ▲ [Options/Vol Inf] from the Main Delivery screen.

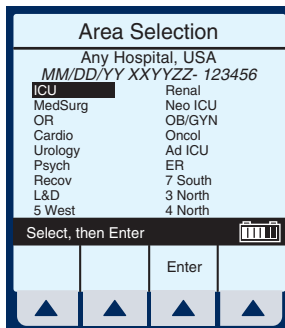


- 2 Select ▲ [Change CCA].

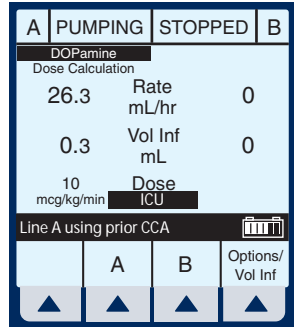


- 3 Press  to highlight desired CCA, then select ▲ [Enter] to confirm the change.

The delivery continues until VTBI equals zero, or you stop the program and clear the settings.

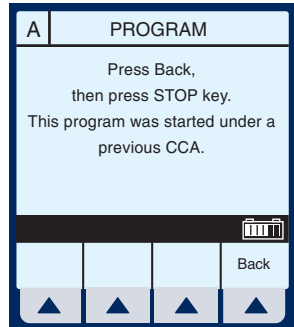


The message bar informs the user of the changed CCA.



When VTBI reaches zero (infusion is completed), VTBI may no longer be incremented. To program, the user must first select ▲ [\[Back\]](#), then press the

STOP key.



Auto-Programming

Auto-Programming is a new feature for the Hospira Plum A+ line of infusion pumps. It can only be used if the feature has been installed in conjunction with your Hospital Information System (HIS) and Barcode Point-Of-Care (BPOC) Unit. It works by scanning barcode labels for the patient, pump, and IV bag using a BPOC Unit, such as a PDA. This information is then transferred to the pump utilizing either its wireless antenna or RJ-45 Ethernet connector. The feature reduces the number of steps needed to program an infusion.

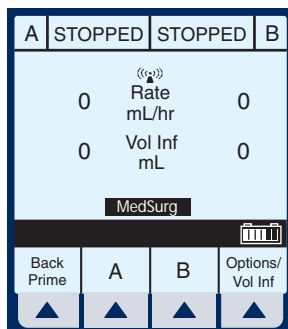
NOTE: If the physician's order for an auto-program therapy exceeds the capabilities of the pump or is above a hospital defined hard drug limit, the infusion parameters for auto-programming will be rejected and the order will need to be re-checked.

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NOTE: It is important that biomed personnel ensure that the barcode identification label affixed to each infuser corresponds to the correct Connectivity Engine Identification Number. This way the correct order will be sent to the appropriate infuser.

NOTE: The wireless icon will not appear if an Ethernet cable is used to connect to the BPOC system.

- 1 Power On the pump as described in Section 4.2.
- 2 After the CCA has been selected, the pump is ready for auto-programming.



NOTE: The Auto-Program feature must begin on the Main Delivery Screen (with the desired line STOPPED).

- 3 Following your hospital's procedure, activate your BPOC Unit.
- 4 Scan the patient wristband to pull up the patient's task list on the BPOC Unit.
- 5 Scan the IV bag. IV Task and documentation with Order Details is displayed on the BPOC.
- 6 Scan the barcode of the available pump channel that is not currently infusing (A or B).

NOTE: If the scanned medication does not exist in the Hospira MedNet Rx Rules medication library, no medication will be

Plum A+® Infusion Systems

displayed on the pump and “No Drug Selected” will be seen on the subsequent Confirmation and Main Delivery Screens.

7 Programming screen is auto-filled.

A Program Dose Calc		
DOPamine		
Conc	400 mg	250 mL
Weight	70 kg	
Dose	10 mcg/kg/min	
VTBI	250 mL	
Duration	09:30 hr : min	
Rate	26.3 mL/hr	
Enter value using keypad		
Program Options		Cancel/Back
▲	▲	▲

8 Verify ALL parameters. If changes are desired, the infusion parameters can be manually changed using the keypad on the pump.

9 Press **START** to display the Confirmation screen.

10 Select ▲ [Yes] to confirm programming and begin infusion.

The BPOC will reconfirm that the pump parameters match the order.

A Program Dose Calc		
MedSurg		
Delivery will be:		
Dose	10 mcg/kg/min	
Drug	DOPamine	
Conc	400 mg	250 mL ▲
Weight	70 kg	
Rate	26.3 mL/hr	
Confirm Program?		
Yes		No
▲	▲	▲

11 Complete the transaction on the BPOC Unit or document the process per hospital procedure.

NOTES

SECTION 7

Alarms and Troubleshooting

Warning Messages

MESSAGE	POSSIBLE CAUSE	CORRECTIVE ACTION
Stop delivery then turn off	Attempting to turn the infuser off while a delivery is in progress.	Stop all lines, then turn infuser off.
Warning: Replace Battery	The battery current charge is greater than 200 mA/hr. The battery voltage is less than the depleted threshold and charge level is higher than the low charge threshold.	Replace battery.
Warning: Charger Service	The charging circuitry is not behaving as expected (charge voltage is not changing) and can reduce battery life.	Silence key is pressed.
Warning: Low Battery	Pump not plugged in to AC power.	Plug into AC power, only about 30 minutes of battery life remains.

NOTE: Other error and warning messages will occur when appropriate for the current selection context. For instance, when a change to a required parameter would result in clearing some delivery settings, the warning message will appear when that field is selected. When an input error has just been made, the three quick beeps of an Invalid Key Warning will sound and an appropriate warning message will be shown to explain the

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problem. All such messages will be cleared or replaced by another message upon the next valid input key press.

Response to Alarms

- 1 Disable Lockout by confirming back switch is in the down position or press the decimal key followed by 9, 6, & 3 on the keypad.**
- 2 Press [SILENCE] key.**
- 3 Identify/Observe Alarm condition.**
- 4 Correct Alarm condition (see following tables).**
- 5 Press [START] to resume infusion.**

NOTE: Alarm messages begin with an alphanumeric code for tracking purposes only. If troubleshooting does not correct the problem, record the code number and contact technical support.

General Alarms

CODE	MESSAGE	POSSIBLE CAUSE	CORRECTIVE ACTION
N100	Unrecognized cassette	Attempting to use unrecognized cassette.	Turn off or insert recognized cassette.
N101	No Action Alarm	Pump programming incomplete.	Press [START] or continue programming.
N102	Infuser Idle 2 Minutes	Pump is ON without operator input. Standby time has elapsed.	Begin programming or turn infuser OFF. Re-enter all programmed data.
N103	Memory Failure	The infuser did not accept the previous programmed data.	Re-enter all programmed data.
N230	Prox Air, Backprime	When the total proximal air detected exceeds the limit.	Check for clamps, or empty containers on line A or B. Correct as necessary. Backprime into line B tubing or syringe.
N180, N181, N186	Distal Occlusion	Distal line kinked, IV site clotted or positional, pressure limit set too low.	Check distal tubing, check IV site, reset pressure limit. <i>See page 1-10 for detailed instructions for avoiding a bolus following a distal occlusion.</i>
N187	Neg Distal Occlusion	Pump too high above patient or defective set.	Lower infuser or replace set.
N233, N234	Distal Air	When air is detected at the distal sensor and exceeds the limit.	Remove and reprime cassette using standard technique.

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CODE	MESSAGE	POSSIBLE CAUSE	CORRECTIVE ACTION
N250	Door open while pumping	Pump door opened while operating.	Close door with cassette inserted.
N251	Cassette Test Failure	Faulty cassette, proximal or distal occlusion or air in cassette detected at start up.	Check clamps, manually reprime set, close door. Backprime into line B tubing or syringe if appropriate. If alarm recurs on retest, replace set. If alarm repeats, replace infuser.
N252	Depleted Battery	Too much time on battery power.	Plug into AC (mains) power.
N253	Hard lockout Violation	The use of the [STOP] key during delivery, or opening the door, while lockout is enabled.	Unlock lockout switch.
N254	Hard lockout Enabled	Pressing of any key except [STOP] during delivery while any alarm is active and lockout is enabled.	Unlock lockout switch.
N255	Soft lockout Violation	The use of the [STOP] key during delivery, or opening the door, while lockout is enabled.	Unlock lockout by pressing the decimal key, followed by 9, 6, & 3 on the keypad.
N256	Soft lockout Enabled	Pressing of any key except [STOP] during delivery while any alarm is active and lockout is enabled.	Unlock lockout by pressing the decimal key, followed by 9, 6, & 3 on the keypad.

Line A Alarms

CODE	MESSAGE	POSSIBLE CAUSE	CORRECTIVE ACTION
N105	Callback Line A	Alarm programmed by user. Change in delivery for Loading Dose to Maintenance Step or for any step in "Multistep" program provided the step is not the last step.	Press [SILENCE].
N161	Line A VTBI complete	VTBI complete on line A.	Program new VTBI.
N185	Prox Occl A At Startup	Proximal line obstructed, line A container (or syringe) disconnected or obstructed during non-delivery (startup).	Examine line A for kinks or closed clamps. If there are closed clamps, open the clamps. Then, open and close door. Continue programming. Replace set if problem persists. If clamps are not opened prior to completion of cassette test, peak proximal occlusion may recur. For syringe, select ▲ [Backprime].

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CODE	MESSAGE	POSSIBLE CAUSE	CORRECTIVE ACTION
N184, N190, N191	Prox Occl A / Air	Proximal line obstructed, line A container disconnect or obstruction.	Examine line A for kinks, closed clamps, or air in cassette.
N232	Prox Air A, Backprime	When proximal air detected exceeds the limit for the line.	Check for clamps, or empty container. Correct as necessary. Backprime into line B tubing or syringe.

Line B Alarms

CODE	MESSAGE	POSSIBLE CAUSE	CORRECTIVE ACTION
N104	Callback Line B	Alarm programmed by user. Change in delivery for piggyback delivery, Loading Dose to Maintenance Step, or for any step in “Multistep” program provided the step is not the last step.	Press [SILENCE].
N160	Line B VTBI complete	VTBI complete on line B.	Program new VTBI.
N183	Prox Occl B At Startup	Proximal line obstructed, line B container (or syringe) disconnected or obstructed during non-delivery (startup).	Examine line B for kinks or closed clamps. If there are closed clamps, open the clamps. Then, open and close door. Continue programming. Replace set if problem persists. If clamps are not opened prior to completion of cassette test, peak proximal occlusion may recur. For syringe, select ▲ [Backprime].

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CODE	MESSAGE	POSSIBLE CAUSE	CORRECTIVE ACTION
N182, N188, N189	Prox Occl B / Air	Proximal line obstructed, line B container disconnected or obstructed.	Examine line B for kinks, closed clamps, or air in cassette. Occlusion caused by empty container, backprime into line B tubing or syringe.
N231	Prox Air B, Backprime	When proximal air detected exceeds the limit for the line.	Check for clamps, or empty container. Correct as necessary. Backprime into line B tubing or syringe.

Malfunctions

CODE	MESSAGE	POSSIBLE CAUSE	CORRECTIVE ACTION
E300 or higher	Malfunction	A failure has occurred in the infuser's internal systems.	Record Malfunction error code. Pump must be turned OFF to clear malfunction. If alarm malfunction repeats, replace infuser.

General Messages

MESSAGE	POSSIBLE CAUSE	CORRECTIVE ACTION
Cannot Standby in Piggyback	Selection of ▲ [Standby] when Line B is in Piggyback Mode.	Select ▲ [Cancel/Back].
Cannot Standby with Delay	Selection of ▲ [Standby] when Delay time was entered for program.	▲ [Cancel/Back].
Changing CCA clears program	Displays when other than last-used Care Area is highlighted.	N/A
Change Conc clears entries	A program delivery which has been stopped and drug amount value is selected. This is displayed before any screen or field message.	User can enter new Concentration using keypad, or press [CLEAR] then make new entry.
Change units clears entries	A program delivery which has been stopped and user highlights another concentration unit for the same line.	User can select ▲ [Back] to exit, or use [SELECT] arrows to highlight a new value.
Change Vol clears entries	A program delivery which has been stopped and diluent value is selected. This is displayed before any screen or field message.	User can enter new Concentration volume using keypad, or press [CLEAR] then make another entry.

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MESSAGE	POSSIBLE CAUSE	CORRECTIVE ACTION
Concurrency alert	Attempt to start a multistep or loading dose delivery whose later steps would exceed concurrent delivery limit if delivery proceeds.	User can enter new values using number keypad, or use [SELECT] arrows to move to another field to change the entry. User can also press [CLEAR].
Concurrency violation	Attempt to start a second line with a delivery rate that would exceed concurrent delivery upper limit immediately. Or, concurrent delivery attempt and rate for the second line is less than concurrent delivery lower limit. Takes precedence over “Rate must be > n mL/hr” message. The combined delivery rate must fall within the range of 1.0 mL/hr – 500 mL/hr or CCA-specific Maximum Volumetric Rate, with 0.5 mL/hr minimum per line.	User can enter new values using number keypad, or use [SELECT] arrows to move to another field to change the entry. User can also press [CLEAR].
Decimal point not allowed	Attempt to input Decimal point when either not used in field or a three-digit whole number already input.	Press [CLEAR] Hardkey.

MESSAGE	POSSIBLE CAUSE	CORRECTIVE ACTION
Dose > [X.xx]. Override?	Attempt to start program with parameter that has caused the Dose (or Rate, if mL/hr program) to be greater than the upper soft limit [uuuuuuuu] for the selected drug and CCA. Also includes placing program in Standby, and re-starting a stopped program.	May be overridden by selecting ▲ [Yes]. Cleared by pressing of [NUMERIC KEYS], [.] , [SELECT], [CLEAR] or [STOP] hard keys, or ▲ [Yes/No] softkeys. Also cleared by the [ON/OFF] key when the line is stopped.
Dose < [X.xx]. Override?	Attempt to start program with parameter that has caused the Dose (or Rate, if mL/hr program) to be less than the lower soft limit [lllllllll] for the selected drug and CCA. Also includes placing program in Standby, and re-starting a stopped program.	May be overridden by selecting ▲ [Yes]. Cleared by pressing of [NUMERIC KEYS], [.] , [SELECT], [CLEAR] or [STOP] hard keys, or ▲ [Yes/No] softkeys. Also cleared by the [ON/OFF] key when the line is stopped.
Hard Lockout Enabled	The Lockout Switch has been enabled, no Alarm is active, and any key besides Stop is pressed.	Disable the Lockout switch located on the back of the device. (See Section 3)
Illegal when Line Delivering	Attempt to select program other than Dose Calculation while a Basic program is delivering on this line.	Select ▲ [Cancel/Back] or press [CLEAR]. Pressing [CLEAR] invokes another message.

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MESSAGE	POSSIBLE CAUSE	CORRECTIVE ACTION
Input digits > max allowed	Attempt to input digit that would exceed the number of decimal places allowed for defined value except Dose and Rate.	Press [CLEAR] hardkey.
Input value > max allowed	Attempt to input number that would cause field to exceed its defined limit. In the Drug amount, Diluent amount, VTBI, Duration, Patient Weight, Distal pressure, and Delayed Start time fields, the Software shall display '---', and the user must press the Clear hard key and input a valid value.	Press [CLEAR] hardkey.
Maximum value reached	The display contrast/intensity has reached its maximum value.	User can select ▲ [Enter] or ▲ [Cancel/Back].
Minimum value reached	The display contrast/intensity has reached its minimum value.	User can select ▲ [Enter] or ▲ [Cancel/Back].
No delivery programmed	Delivery attempt at Main Delivery Screen when A and B have both Rate and VTBI equal to zero (no delivery programmed).	Select a line to program, or ▲ [Options] or ▲ [Backprime].
Rate must be > 0 mL/hr	Delivery attempt when VTBI is non-zero but rate is zero.	Use number keypad to enter a value.

MESSAGE	POSSIBLE CAUSE	CORRECTIVE ACTION
Soft Lockout Enabled	While the Soft Lockout is enabled and no Alarm is active, either 1) any key besides Stop is pressed during delivery, or 2) any key is pressed while stopped.	Disable the Soft Lockout. (See Section 3)
VTBI must be > 0	Delivery attempt when rate is non-zero but VTBI is zero.	Use number keypad to enter a value.
Value is too high	Attempt to move cursor from field whose input value is too high.	Use number keypad to enter a value.
Value is too low	Attempt to move cursor from field requiring a non-default value.	Use number keypad to enter a value.
Weight change affects Line A/B	Selecting the weight field on line while a weight-based program is entered on other line.	Use number keypad to enter a value.
Minimum Dose X.xx	Attempt to start program with Dose less than lower hard Dose limit n.nn.	Use number keypad to enter a value.
Maximum Dose X.xx	Attempt to start program with Dose greater than upper hard Dose limit n.nn. Attempt to input a Dose greater than the upper Hard Limit.	The Software will display '---', and the user must press the [CLEAR] hard key and input a valid value.

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MESSAGE	POSSIBLE CAUSE	CORRECTIVE ACTION
Minimum Rate X mL/hr	Attempt to start mL/hr program with Rate less than lower hard Dose limit nn.n.	Use number keypad to enter a value.
Maximum Rate X mL/hr	Attempt to start mL/hr program with Rate greater than the upper Hard Limit or CCA Maximum Volumetric Rate n. Attempt to input a Rate greater than the upper Hard Limit or CCA Maximum Volumetric Rate n.	The Software will display '---', and the user must press the [CLEAR] hard key and input a valid value.

SECTION 8

Cleaning, Maintenance, and Storage

The cleaning, maintenance, and storage of the Plum A+ are described in this section.

CLEANING AND SANITIZING

For proper maintenance of the Plum A+, observe the following cleaning and sanitizing guidelines.

Establish a routine weekly schedule for cleaning the infuser. To clean, proceed as follows:

- Turn the Plum A+ off using the [ON/OFF] switch
- Disconnect from AC (mains) power

The exposed surfaces of the Plum A+ may be cleaned with a lint-free cloth dampened by one of the recommended cleaning solutions in the following list or mild, nonabrasive soapy water.

Clean the cassette door with a soft, lint-free cloth, dampened with one of the cleaning agents listed in the following table, or a mild solution of soapy water. Use a small non-abrasive brush to aid in cleaning the infusion system housing and subsystem chassis components. To thoroughly clean the cassette receptacle, disengage the cassette door from the door latch by pressing the door release tab.

CAUTION: DO NOT ALLOW CLEANING SOLUTIONS TO SATURATE THE AIR-IN-LINE DETECTORS OR ENTER THE DEVICE WHEN CLEANING THE AIR-IN-LINE DETECTORS.

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CLEANING SOLUTION	MANUFACTURER	PREPARATION
Coverage™HBV	Steris Corporation, A division of Calgon Vestal Laboratories	Per manufacturer's recommendation
Formula C™	Diversey Corporation	Per manufacturer's recommendation
Dispatch®	Caltech Industries	Per manufacturer's recommendation
Precise®	Caltech Industries	Per manufacturer's recommendation
Household bleach	Various	Per hospital procedures; do not exceed one part bleach in ten parts water
Manu-Klenz®	Calgon Vestal Laboratories	Per manufacturer's recommendation
Sporicidin®	Sporicidin International	Per manufacturer's recommendation
Super Edisonite®	S. M. Edison Co.	Per manufacturer's recommendation

The rubber pad on the Plum A+3 pole clamp, as well as the IV poles for both instruments, may be cleaned using isopropyl alcohol.

On a routine basis, clean all of the elements behind the cassette door using cotton-tipped swabs saturated with cleaning solution. The cassette door may be unlatched from the door handle to facilitate cleaning.

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To unlatch the cassette door from its handle, tilt the device back, open the cassette door, then push the door release tab to open the door fully.

CAUTION: TO AVOID MECHANICAL OR ELECTRONIC DAMAGE, DO NOT IMMERSE THE PLUM A+ IN ANY FLUIDS OR CLEANING SOLUTIONS.

CAUTION: DO NOT SPRAY CLEANING SOLUTIONS TOWARD ANY OPENING IN THE INSTRUMENT.

CAUTION: CERTAIN CLEANING AND SANITIZING SOLUTIONS MAY SLOWLY DEGRADE COMPONENTS MADE FROM SOME PLASTIC MATERIALS. USING ABRASIVE CLEANERS OR CLEANING SOLUTIONS NOT RECOMMENDED BY HOSPIRA MAY RESULT IN PRODUCT DAMAGE. DO NOT USE COMPOUNDS CONTAINING COMBINATIONS OF ISOPROPYL ALCOHOL AND DIMETHYL BENZYL AMMONIUM CHLORIDE.

CAUTION: NEVER USE SHARP OBJECTS SUCH AS FINGERNAILS, PAPER CLIPS, OR NEEDLES TO CLEAN ANY PART OF THE INFUSER.

CAUTION: DO NOT STERILIZE BY HEAT, STEAM, ETHYLENE OXIDE (ETO), OR RADIATION.

CAUTION: TO AVOID INFUSER DAMAGE, CLEANING SOLUTIONS SHOULD ONLY BE USED AS DIRECTED. THE DISINFECTING PROPERTIES OF CLEANING SOLUTIONS VARY; CONSULT THE MANUFACTURER FOR SPECIFIC INFORMATION.

BATTERY MAINTENANCE

CAUTION: DO NOT OPERATE THE INFUSER ON PATIENTS WITH THE BATTERY REMOVED. USE OF A PROPERLY MAINTAINED AND CHARGED BATTERY HELPS CONFIRM PROPER OPERATION.

CAUTION: IF THE LOW-BATTERY ALARM SOUNDS, CONNECT TO AC (MAINS) POWER IMMEDIATELY.

The Plum A+ is battery powered for emergency backup and temporary portable operation. A fully charged, new battery provides 3 hours of operation at 125 mL/hr, or delivers 250 mL total volume if pumping at a rate of 126 mL/hr or greater, whichever occurs first.

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NOTE: For optimum battery life, the Plum A+ should be operated on battery power for three continuous hours at least once every six months and then charged for a minimum of six hours.

The battery charges whenever connected to AC (mains) power. If the infuser is switched OFF, recharge takes approximately six hours. Recharge takes longer if the infuser is turned ON.

As a general rule, the more often the battery is partially discharged and recharged, the sooner it will need to be replaced. Consult a qualified biomedical technician for battery replacement if necessary.

To maintain maximum battery charge and to prolong battery life, connect the infuser to AC (mains) power whenever possible.

When the infuser is used without wireless, the operation times may be proportionally longer.

STORAGE

To prolong the life of the Plum A+, observe the following storage precautions:

- Store the away from excessive heat, cold, and humidity
- Store connected to AC (mains) power
- Switch the infuser OFF using the [ON/OFF] key

SERVICE

All servicing or adjustments to the Plum A+ should be referred to qualified technical personnel. A technical service manual may be ordered from the local Hospira sales office.

SECTION 9

Specifications

NOTE: Specification information applies to both systems (Plum A+ & Plum A+3) unless otherwise noted.

Physical

- Dimensions:** **Plum A+-** Approximately 8" X 8" X 6", excluding pole clamp protrusion and power cord storage.
Plum A+3- Approximately 19" X 15" X 14", including pole clamp, barcode wand holder, and power cord.
- Weight:** **Plum A+-** Approximately 9.5 lbs. with battery.
Plum A+3- Approximately 28 lbs. with (3) batteries.
- Casing:** High-impact plastic.

Electrical

- Power Requirements:** **Plum A+-** 120 V~, 50-60 Hz, 35 VA. Meets UL 60601-1.
Plum A+3- 120 V~, 50-60 Hz, 120 VA.
- Fuses:** F1, F2, 250V~, 0.5 A. (internal)
- Power Cord:** Hospital-grade AC cord. 10 ft long, with transparent plug and retainer plate.
- Battery:** **Plum A+-** One sealed, lead-acid, rechargeable 6 V battery, internal to device.
Plum A+3- Three sealed, lead-acid, rechargeable 6 V batteries, internal to device.

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Battery Life:	With a new fully charged battery, the infuser operates for a minimum of three hours at 125 mL/hr or less, or delivers 250 mL if > 126 mL/hr. (Time is measured from initial pumping to Depleted Battery Alarm)
Recharge:	The battery charges whenever the infuser is connected to AC power. The recharge time is approximately six hours with the device operating at 125 mL/hr on one line.
Electrical Leakage:	Meets IEC 60601-1 standard: Medical Electronic Equipment, Part 1: General Requirements for Safety.
NURSE-CALL System:	NURSE-CALL alarm is factory set for Normally-Open (NO) Contact the Technical Services Center to make an internal adjustment to change the device from Normally-Open (NO) to Normally Closed (NC) system.
Circuitry Ratings:	Voltage-30 VDC Max Current- 0.25 Amps Max Contact Rating- 3 Watts Max

Wireless Lan Device

Standards:	IEEE802.11b
Radio Technology:	IEEE802.11b Direct Sequence
Spread Spectrum Data Transfer Rate:	11, 5.5, 2, 1 Mbps (auto sense)

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FREQUENCY RANGE	2412 - 2462 MHz
IEEE802.11b	
Channels:	1-11 (FCC)
Transmit Power:	100mW (+20dBm) max
Antenna:	Integrated surface mount antenna
Certifications:	FCC Part 15.247 IC RSS-210, RSS-102 FCC ID: STJ-20677 IC: 5627A-20677

VTBI Range

VTBI Range:	0.1 to 99.9 mL (in 0.1 mL increments) 100 to 9999 mL (in 1 mL increments)
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Environment

Operating Temperature:	5° to 40° C
Storage Temperature:	-20° to 60° C
Atmospheric Pressure:	0 - 10,000 feet (0 - 3,000m) or equivalent pressure
Relative Humidity:	10 - 90% (40° C Max)

Delivery Rate Range

Lines A and B:	0.1 - 99.9 mL/hr (in 0.1 mL increments) 100 - 999 mL/hr (in 1 mL increments)
Concurrent Delivery:	0.5 mL/hr minimum for each line 500 mL/hr cumulative (A+B) maximum
PlumSet:	

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KVO: 1.0 mL/hr or the last primary delivery rate, whichever is less

Air-in-Line Alarm

PlumSet (Distal): Bolus 0.1 mL (100 microliters) or larger for delivery rates less than 500 mL/hr.
Bolus 0.5 mL (500 microliters) or larger for delivery rates equal to or greater than 500 mL/hr.
Cumulative 0.25 mL out of 2.6 mL for delivery rates less than 500 mL/hr.
Cumulative 0.50 mL out of 5.3 mL for delivery rates equal to or greater than 500 mL/hr.

PlumSet (Proximal): Bolus at 0.5 mL, Total 1.0 mL

Occlusion Alarm and Limits

Distal Occlusion: The DISTAL OCCLUSION alarm sounds after the distal set tubing or set outlet fitting becomes occluded.

Proximal Occlusion: The PROXIMAL OCCLUSION alarm sounds if the tubing proximal to the cassette becomes occluded.

Distal Pressure Limit (without alarm): 1 to 15 psig. The maximum pressure is user-selectable. Factory default setting is 6 psig.

Maximum Infusion Pressure: 20 psig

Time To Detect Downstream Occlusions

RATE	OCCUSION ALARM PRESSURE SETTING	TYPICAL TIME TO ALARM (MACRO)	MAXIMUM TIME TO ALARM (MACRO)
25 mL/hr	6 psig	38 seconds	47 seconds
	15 psig	98 seconds	106 seconds
1 mL/hr	6 psig	17 minutes	22 minutes
	15 psig	45 minutes	49 minutes

* Baseline backpressure is 0 psig *

Bolus Volume Released After Downstream Occlusions Are Corrected

RATE	OCCUSION ALARM PRESSURE SETTING	TYPICAL BOLUS VOLUME (MACRO)	MAXIMUM BOLUS VOLUME (MACRO)
25 mL/hr	6 psig	0.23 mL	0.28 mL
	15 psig	0.55 mL	0.63 mL
1 mL/hr	6 psig	0.24 mL	0.30 mL
	15 psig	0.59 mL	0.70 mL

* Baseline backpressure is 0 psig *

Delivery Accuracy

The Plum A+ Infuser was designed and manufactured to maintain a volumetric delivery rate error of the total fluid delivered of less than or equal to $\pm 5\%$ over the course of 48 hours at a programmed rate of 1 to 999 mL/hr during normal operating conditions. For use of the device at rates below 1 mL/hr, the delivery rate error is less than or equal to $\pm 10\%$.

Backpressure Effect- Positive backpressure on the distal line may affect delivery accuracy by no more than 0.5% per psig (2% per psig for rates between 0.1 and 0.9 mL/hr) for backpressures up to 15 psig. A typical deviation under these conditions is 0.3%. Negative backpressure may affect delivery accuracy no more than 2% for pressures up to -2 psig (56 inches of water). A typical deviation under these conditions is 0.3%.

Filling Head Effect- Variations in filling head (such as container height) may affect delivery accuracy by no more than 2% for variations in the range -15 to +28 inches. A typical deviation under these conditions is 0.5%.

Concurrent Delivery Effect- When both lines (A & B) are delivering, the ratio of delivery for the fluid with the lowest rate may be affected by as much as 5% for ratios up to 9 to 1. For higher ratios, the absolute percentage of delivery for the lowest rate may be affected by no more than 0.5%. When air is present in the bubble trap, the absolute percentage of delivery for the lowest rate may be affected by up to 2.0%. When variations in container height are present, the absolute percentage of delivery for the lowest rate may be affected by up to 2.5% for up to 24 inches of container height differences.

Enteral & High Viscosity Fluids Effects

System delivery accuracy limits for each Enteral and High Viscosity Fluid, such as those listed in the following table, can be degraded by an additional maximum of 5%. System accuracy for Enteral Fluids is defined only for rates of 1 to 200 mL/hr, with no

suspended air in the solution, and using an Hospira Plum enteral set.

ENTERAL/HIGH VISCOSITY FLUIDS
Dextrose 20% to 50% concentration
Isomil Powder
Similac Powder
Ensure Plus HN
Twocal HN
Jevity

Trumpet Curves

The Trumpet Curve Graphs following the Example show representative maximum and minimum percent flow rate deviation from the programmed rate over time. This information was developed in accordance with IEC 60601-2-24: 1998, Sub-Clause 50.102. Refer to this standard for detailed information.

How to read a Trumpet Curve Graph (Refer to example on the following page): The graphs following the Example plot flow rates at 30 second intervals for the first 2 hours and for the 96th hour of delivery. The graph plots mean delivery rate error (Average of 3 infusers) for the 2nd hour and the 96th hour as a straight line. The graph also presents maximum and minimum average delivery rate error for this interval plotted by averaging delivery errors over intervals of 2, 5, 11, 19 and 31 minutes (“Trumpet Curve”).

EXAMPLE

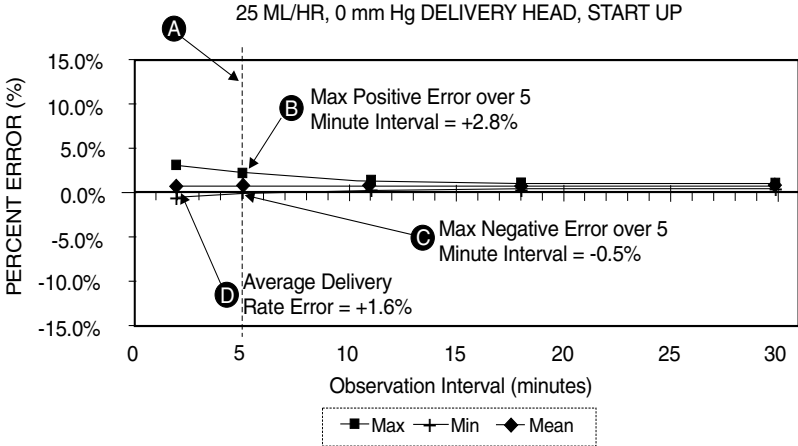
From the Trumpet Curve Graph sample that follows, find the 5 minute interval (A) at the horizontal axis and read the corresponding points (B) and (C) on the vertical axis. The values are approximately +2.8% and -0.5%.

This means that at the rate of 25 mL/hr the average maximum flow rate fluctuation for any 5 minute time interval during the 2nd hour of operation was within the limits of +2.8% and -0.5% from

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the nominal rate. The average delivery rate error over the entire 2nd hour was +1.6% (D).

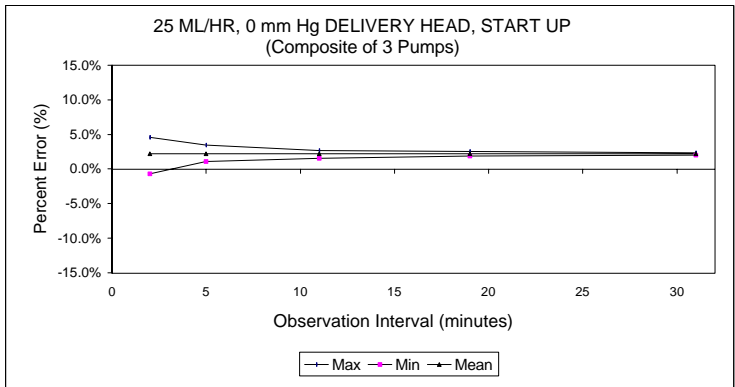
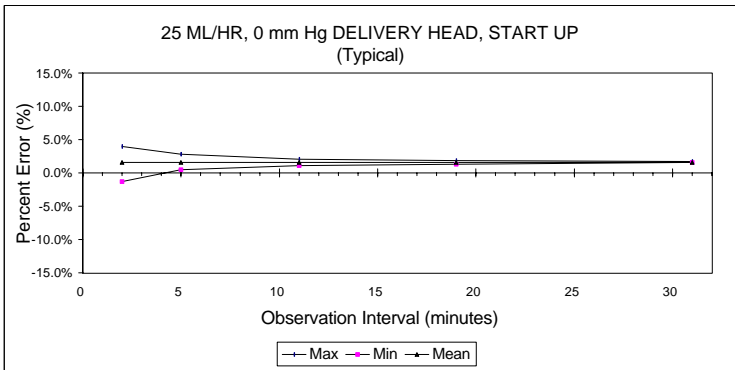
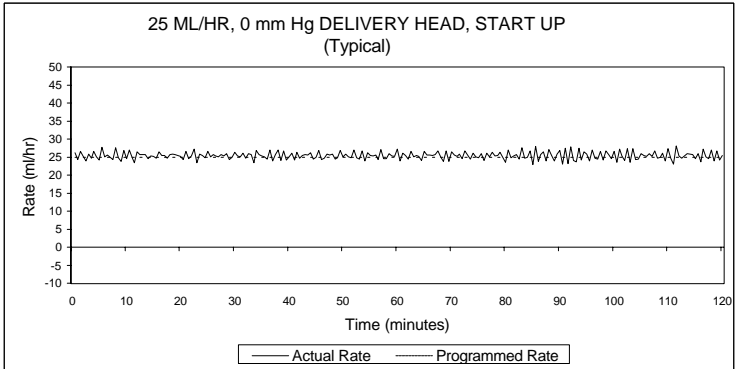
For other time intervals look at other points at the horizontal axis and determine corresponding limits as above.



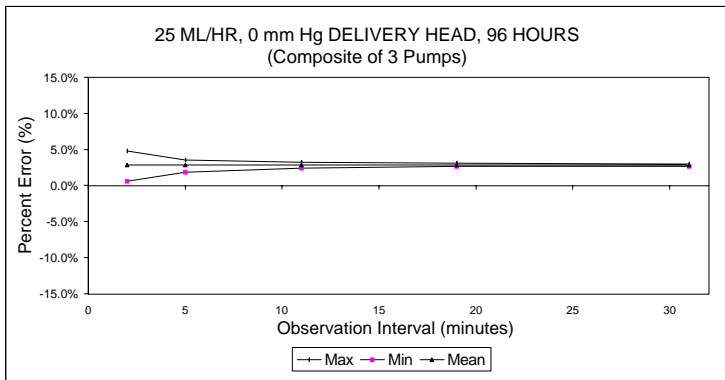
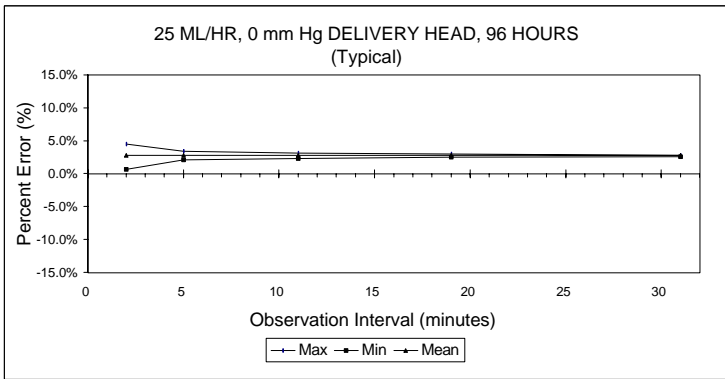
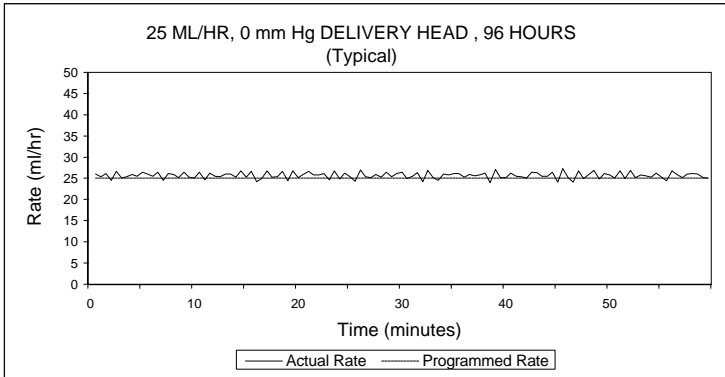
A trained professional can use the resulting graphs to select a infuser with the appropriate startup and flow characteristics to suit the clinical application.

NOTE: As an example of how the trumpet curves can be used, consider the maximum and minimum deviations at the 5 minute average interval. The upper curve provides the maximum expected delivery rate error over a 5 minute interval, the lower curve provides the minimum expected delivery rate error over a 5 minute interval. An example would be Dopamine administered at 5 $\mu\text{g}/\text{kg}/\text{min}$. At 5 minutes, the average drug delivery error would be within the range of +2.8% and -0.5% of the expected nominal rate.

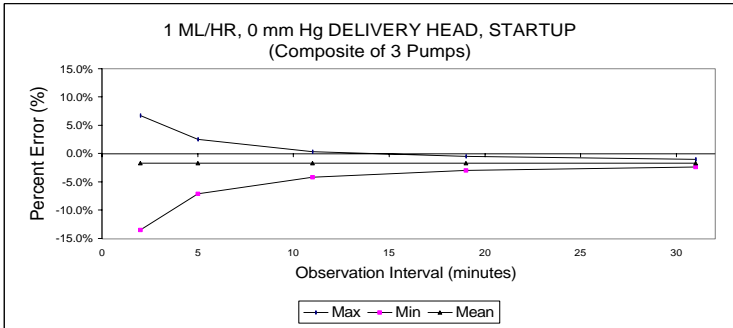
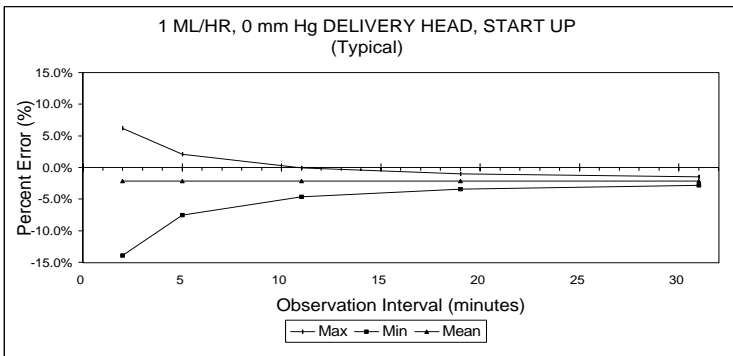
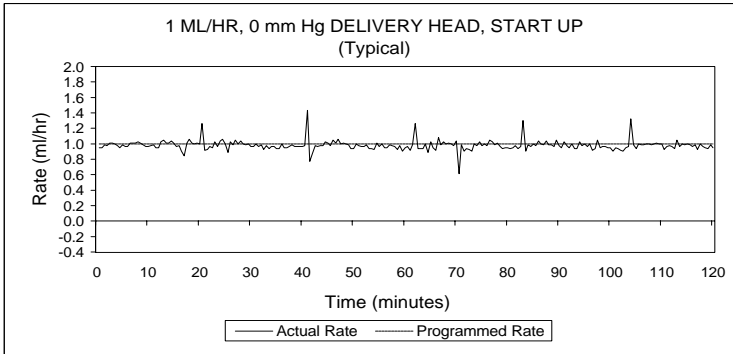
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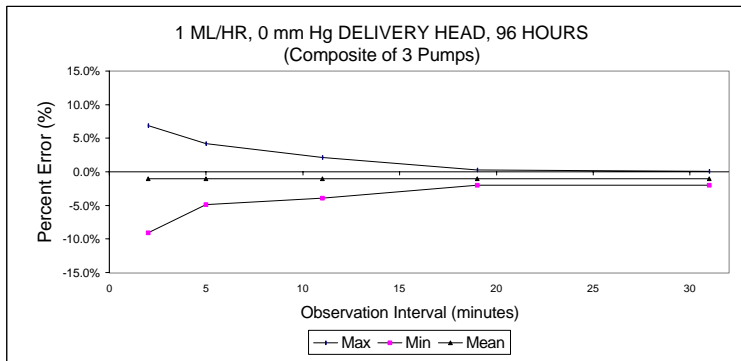
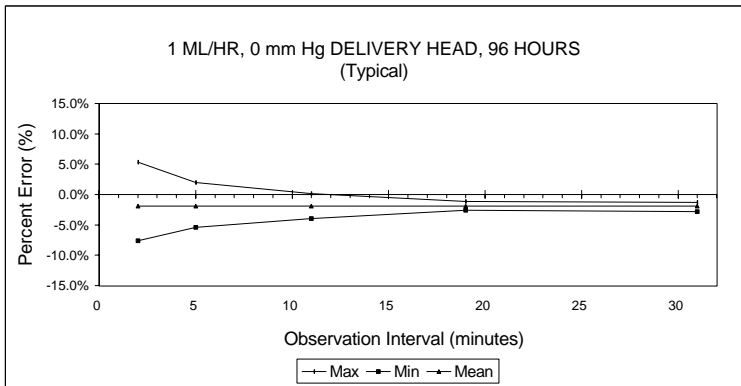
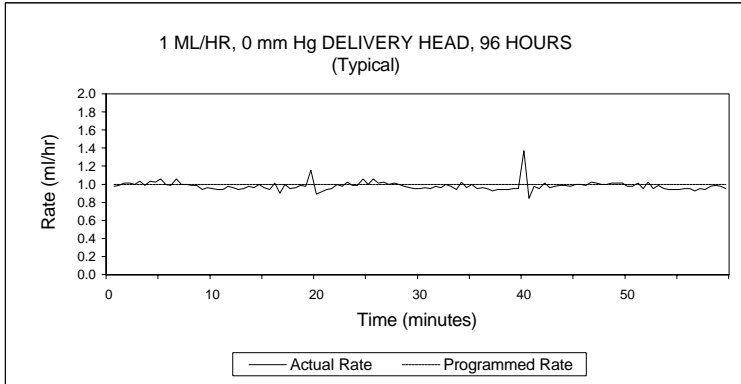
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SECTION 10

Supplies and Accessories

Administration Fluids

ADMINISTRATION FLUIDS

- All parenteral fluids
- Whole Blood
- Blood fractions

ENTERAL AND HIGH VISCOSITY FLUIDS

- Dextrose 20% to 50% concentration
- Isomil Powder
- Similac Powder
- Ensure plus HN
- TwoCal HN
- Packed red cells

CONTAINERS

- Dual Chamber Parenteral flexible container (Nutrimix)
- Large Volume Parenteral flexible plastic containers, including premixed
- Large Volume Parenteral glass containers, including premixed and nutritional
- Part Fill Parenteral flexible plastic containers, including ADD-Vantage
- Part Fill Parenteral glass containers
- Small Volume Parenterals
- Syringes (may require special adapters)
- Top Filled Enteral bags
- Ready to hang Enteral solution containers

Accessories

GENERAL

- Syringe Adapter- List# 11986-48
- Mini Pole- List# 12096-04
- Secondary Container Support- List# 12095-03
- Tandem Carrier- List# 12270-01
- Plum A+3 IV Pole (upright)- 12577-04-01
- Plum A+3 IV Pole (base)- 12576-04-01

NETWORKED APPLICATION

- Hospira MedNet™ Medication Management Server Suite (MMSS)
List# 20676-04
- *Hospira MedNet™ Plug 'n Play Module
List# 20677

* = For use with Hospira Plum A+ Infusers
Lists 11971-04-03 & above, 12391-04, & 20679-04

NOTE: Contact Technical Support Operations at
1-800-241-4002 for current listing of accessories.

SECTION 11

Warranty

Subject to the terms and conditions herein, Hospira, Inc., herein referred to as Hospira, warrants that (a) the product shall conform to Hospira's standard specifications and be free from defects in material and workmanship under normal use and service for a period of one year after purchase, and (b) the replaceable battery shall be free from defects in material and workmanship under normal use and service for a period of 90 days after purchase. Hospira makes no other warranties, express or implied, as to merchantability, fitness for a particular purpose, or any other matter.

Purchaser's exclusive remedy shall be, at Hospira's option, the repair or replacement of the product. In no event shall Hospira's liability arising out of any cause whatsoever (whether such cause be based in contract, negligence, strict liability, other tort, or otherwise) exceed the price of such product, and in no event shall Hospira be liable for incidental, consequential, or special damages or losses or for lost business, revenues, or profits. Warranty product returned to Hospira must be properly packaged and sent freight prepaid.

The foregoing warranty shall be void in the event the product has been misused, damaged, altered, or used other than in accordance with product manuals so as, in Hospira's judgment, to affect its stability or reliability, or in the event the serial number or lot number has been altered, effaced, or removed.

The foregoing warranty shall also be void in the event any person, including the Purchaser, performs or attempts to perform any major repair or other service on the product without having been trained by an authorized representative of Hospira and using Hospira documentation and approved spare parts. For purposes of the preceding sentence, "major repair or other service" means any repair or service other than the

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replacement of accessory items such as batteries and detachable mains power cords.

In providing any parts for repair or service of the product, Hospira shall have no responsibility or liability for the actions or inactions of the person performing such repair or service, regardless of whether such person has been trained to perform such repair or service. It is understood and acknowledged that any person other than an Hospira representative performing repair or service is not an authorized agent of Hospira.

SECTION 12

Default Drug Library (DDL)

NOTE: This list is only accurate if no custom drug library has been developed using the Hospira MedNet accessory. Once a custom drug library has been developed, this list will no longer be accessible. Only Hospira personnel can re-install the DDL.

Use drug manufacturer recommendations for IV administration when using the Plum A+ infusion infuser.

DRUG NAME	DEFAULT DOSE RATE	DEFAULT CONCENTRATION
No Drug Selected	mL/hr	N/A
Abciximab	mcg/kg/min	mg/mL
Acyclovir	mL/hr	N/A
Albumin	mL/hr	N/A
Aldesleukin	mL/hr	N/A
Alfentanil	mcg/kg/min	mcg/mL
Alteplase (rt-PA)	mg/kg/hr	mg/mL
Amikacin	mL/hr	N/A
Aminophylline	mg/hr	mg/mL
Amiodarone	mg/min	mg/mL
Amphotericin B	mL/hr	N/A
Ampicillin	mL/hr	N/A
Atracurium	mL/hr	N/A
Azithromycin	mL/hr	N/A
Bleomycin	mL/hr	N/A
Blood Products	mL/hr	N/A
Bretylium	mg/min	mg/mL
Carboplatin	mL/hr	N/A

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DRUG NAME	DEFAULT DOSE RATE	DEFAULT CONCENTRATION
Cefazolin	mL/hr	N/A
Cefepime	mL/hr	N/A
CefoPERAZONE	mL/hr	N/A
CefoTAXIME	mL/hr	N/A
CefoTETAN	mL/hr	N/A
CefoXITIN	mL/hr	N/A
CeftAZIDime	mL/hr	N/A
CeftIZOXime	mL/hr	N/A
Ceftriaxone	mL/hr	N/A
Cefuroxime	mL/hr	N/A
Cimetidine	mL/hr	N/A
Ciprofloxacin	mL/hr	N/A
Cisplatin	mL/hr	N/A
Clindamycin	mL/hr	N/A
Cotrimoxazole	mL/hr	N/A
Cytarabine	mL/hr	N/A
Diltiazem	mg/hr	mg/mL
DOBUTamine	mcg/kg/min	mg/mL
Docetaxel	mL/hr	N/A
DOPamine	mcg/kg/min	mg/mL
DOXOrubicin	mL/hr	N/A
Epinephrine	mcg/min	mg/mL
Epoprostenol	ng/kg/min	mg/mL
Eptifibatide	mcg/kg/min	mg/mL
Erythromycin	mL/hr	N/A
Esmolol	mcg/kg/min	mg/mL
Etoposide	mL/hr	N/A
Famotidine	mL/hr	N/A

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DRUG NAME	DEFAULT DOSE RATE	DEFAULT CONCENTRATION
Fentanyl	mL/hr	N/A
Fluconazole	mL/hr	N/A
Flumazenil	mL/hr	N/A
Fluorouracil	mL/hr	N/A
Furosemide	mL/hr	N/A
Gatifloxacin	mL/hr	N/A
Gentamicin	mL/hr	N/A
Heparin	units/kg/hr	units/mL
Hydromorphone	mL/hr	N/A
Ifosfamide	mL/hr	N/A
Insulin	units/hr	units/mL
Labetalol	mg/min	mg/mL
Lepirudin	mg/kg/hr	mg/mL
Leucovorin	mL/hr	N/A
Levofloxacin	mL/hr	N/A
Lidocaine	mg/min	grams/mL
Lorazepam	mL/hr	N/A
Magnesium	grams/hr	grams/mL
Mannitol	grams/hr	grams/mL
Mesna	mL/hr	N/A
MethoHEXITAL	mL/hr	N/A
MethoTREXATE	mL/hr	N/A
Metoclopramide	mL/hr	N/A
Metronidazole	mL/hr	N/A
Midazolam	mL/hr	N/A
Milrinone	mcg/kg/min	mg/mL
Morphine	mg/hr	mg/mL
Nafcillin	mL/hr	N/A

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DRUG NAME	DEFAULT DOSE RATE	DEFAULT CONCENTRATION
NitroGLYCERIN	mcg/min	mg/mL
NitroPRUSSIDE	mcg/kg/min	mg/mL
Norepinephrine	mcg/min	mg/mL
Ofloxacin	mL/hr	N/A
Ondansetron	mL/hr	N/A
Oxacillin	mL/hr	N/A
Oxytocin	mUn/min	units/mL
Paclitaxel	mL/hr	N/A
Pantoprazole	mg/min	mg/mL
Penicillin	mL/hr	N/A
Pentobarbital	mL/hr	N/A
Phenylephrine	mcg/min	mg/mL
Piperacillin	mL/hr	N/A
Potassium	mEq/hr	mEq/mL
Procainamide	mg/min	grams/mL
Propofol	mcg/kg/min	mg/mL
Ranitidine	mL/hr	N/A
STREPTOKinase	units/hr	units/mL
Theophylline	mg/kg/hr	mg/mL
Ticar-clavulanate	mL/hr	N/A
Tirofiban	mcg/kg/min	mg/mL
Tobramycin	mL/hr	N/A
UROkinase	mL/hr	N/A
Vancomycin	mL/hr	N/A
Verapamil	mL/hr	N/A
VinCRISTine	mL/hr	N/A

Plum A+® Infusion Systems

For customer service within the United States, contact:

1-877-9-HOSPIRA (1-877-946-7747)

For technical assistance, product return authorization, and to order parts, accessories, or manuals within the United States, contact Hospira, Inc. Technical Support Operations:

1-800-241-4002

To order parts using the online eCatalog, download technical publications, technical training courses, and additional services, visit the website at:

www.hospiraparts.com

After authorization, ship prepaid product returns to the following address:

**Hospira, Inc.
Technical Support Operations
755 Jarvis Drive
Morgan Hill, CA 95037**

Outside the U.S., contact your local Hospira, Inc. sales office.

For Systems With Hospira MedNet™ Software

CAUTION: FEDERAL (USA) LAW RESTRICTS THIS INFUSER TO SALE BY OR ON THE ORDER OF A PHYSICIAN OR OTHER LICENSED PRACTITIONER.

WARNING

POSSIBLE EXPLOSION HAZARD EXISTS IF THE INFUSER IS USED IN THE PRESENCE OF FLAMMABLE ANESTHETICS.

Plum A+ Infusion Pump is a registered trademark of Hospira, Inc. Hospira MedNet, LifeShield, and E.L.I. are trademarks of Hospira Incorporated. CLAVE, Teflon, Formula C, Manu-Klenz, Super Edisonite, Coverage, Sporidicin, Dispatch, and Precise are not trademarks of Hospira.



Type CF

Equipment providing adequate degree of protection against electrical shock and suitable for application to patient

IPX1 Drip Proof
Medical Equipment

Protected against dripping water

Class 1

Mains supply equipment using protective earth



UL 60601-1
CSA 601.1
MCN 160992

The 'C' and 'US' indicators adjacent to the CSA Mark signify that the product has been evaluated to the applicable CSA and ANSI/UL Standards, for use in Canada and the U.S., respectively. This 'US' indicator includes products eligible to bear the 'NRTL' indicator. NRTL, i.e. National Recognized Testing Laboratory, is a designation granted by the U.S. Occupational Safety and Health Administration (OSHA) to laboratories which have been recognized to perform certification to U.S. Standards.