

medfusion™

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Medfusion™

Model 3500 Syringe Infusion Pump Configuration Manual

Software Version V3.0.6

This manual and its contents are valid for use with software version V3.0.6.

smiths medical

Technical Assistance

If you have comments or questions concerning the operation of the *Medfusion™ 3500* pump, please call the appropriate number given below. When calling, please specify your pump's software version. This information is located on the start-up screen.

Our staff at Smiths Medical MD, Inc. is available to help clinicians 24 hours a day with the programming and operation of the *Medfusion™ 3500* pump.

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Table of Contents

Introduction	1	Set alarm silence time.....	26
Finding relevant information.....	1	Set near empty alarm time.....	26
Custom configuring features & options	2	Set alarm loudness	27
Custom configuration overview	2	Test alarm loudness	27
Accessing the Custom Configuration mode		Set & test keyclick (beep) loudness	27
within the pump	2	Testing keyclick (beep) loudness.....	28
Utilizing PharmGuard® Toolbox to configure the		Working with libraries & templates	29
pump.....	3	Default & other library settings	29
Factory default configuration.....	3	What are standard library templates?	29
Three major sets of defaults.....	3	Enabling / disabling standard library usage	29
Enabling, disabling, and moving	3	What are E-Plates library templates?	30
Table of custom configuration options	4	Enabling / disabling E-Plates.....	31
Table of library features.....	6	Displaying E-Plates options.....	31
Table of configuration cloning features	7	Create & save a library entry (template).....	31
Passcode protection.....	8	Disable “Save to Library” before sending pump	
Using the custom configuration passcode.....	8	to workplace	32
Restore & use default configuration settings	8	Saving a new template (entry).....	32
Why use default configuration settings?.....	9	Reusing templates	33
Restoring default settings	9	Libraries must be enabled before you can use	
Default Settings for Anesthesia, General, and NICU .	10	them	33
Syringe Model.....	10	Libraries must follow standards & practices	33
Delivery Modes	10	Enabling the libraries.....	33
Program Options	11	Clear library entry (or template)	34
Auto Prompt Options.....	11	Clear all libraries	34
Other Default Options	11	Configuration cloning.....	35
Controlling onscreen appearance.....	12	What is configuration cloning?.....	35
Reordering features onscreen.....	12	Teaching and learning.....	35
Enabling / disabling / moving the page break.....	12	Preparing for configuration cloning.....	35
Rules for using page breaks	13	Using the Teach/Learn modes	35
Steps for placing the page break.....	13	Troubleshooting the “Learn Error – Remote Not in	
Select syringes	14	Teach Mode” error message.....	37
Enable, disable or move syringes	14		
Select delivery modes.....	15		
Delivery modes	15		
Enable, disable or move delivery modes.....	17		
Custom Program.....	17		
Biomed	17		
Program options.....	18		
Program options	18		
Enable / disable / move program options.....	20		
Auto prompts	21		
Enable / disable / move auto prompts.....	21		
Miscellaneous settings	23		
Pump ID label	23		
Naming the pump	23		
Pump naming convention	23		
Typing pump ID using the PC configuration			
clone	23		
Setting occlusion limits.....	24		
Set maximum flow rate	24		
Set maximum bolus rates.....	24		
Enable / disable program dose display.....	25		
Set up & test pump alarms.....	25		
Setting alarm style.....	25		

Introduction

This manual is designed to teach you the customizing process for the Medfusion™ 3500 infusion pump. Through customization, you make the pump meet the specific needs and purposes of your unit, organization, department, or hospital.

You must be thoroughly familiar with the contents of the *Operation Manual* as well as this manual, before customizing the features and options of the Medfusion™ 3500 pump.

This manual presumes you have read the *Operation Manual*, and are fully competent with using the pump.

Note: This manual and its contents are valid for use with software version 3.0.6.

Finding relevant information

Refer to the Medfusion™ 3500 Infusion Pump *Operation Manual* for the following important information:

- Important Operation Notices
- Correct Use of This Pump
- Intended Use
- Features & Controls
- Technical Specifications & Definitions
- Syringe Models & Standard
- Operation Warnings & Cautions
- Guidelines For Enhanced Pump Performance

Custom configuring features & options

This chapter contains definitions and a requirements overview for customizing the operations of the Medfusion™ 3500 infusion pump. This includes custom selection, enabling or disabling, and setting pump features.

The actual configuration any Medfusion™ 3500 infusion pump has depends entirely on whatever its *current settings* may be. If you don't know what the current settings are, you should review them before changing them. You should also learn who last set up the pump, and whether you are authorized to change the settings for a particular pump.

The only people who should be authorized to set up & monitor any infusion are nurses, physicians, or other healthcare professionals with training to practice infusion therapy and operate the Medfusion™ 3500 syringe pump.

Custom configuration overview

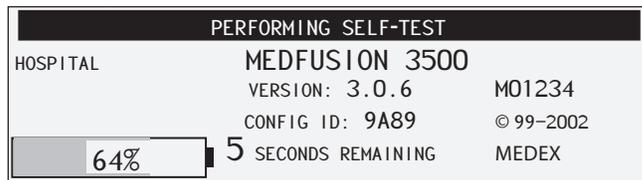
What follows is a basic overview of the configuration utility, what it is intended for, and how to use it.

There are two (2) methods available for custom configuration of the Medfusion™ 3500 syringe pump. The first method is to access the custom configuration mode within the pump and make all appropriate setting changes. The second is to utilize the PharmGuard® Toolbox Medication Safety Software in a PC and, once properly connected to the Medfusion™ 3500, download the settings. Some options such as upper and lower dose limits (PharmGuard® Toolbox), and naming libraries can **only** be accessed through PharmGuard® Toolbox.

Note: While the following steps describe making a single configuration change, it is not necessary to exit customization before making additional changes. Once you have started using the configuration utility you can make as many changes as you wish before you exit.

Accessing the Custom Configuration mode within the pump:

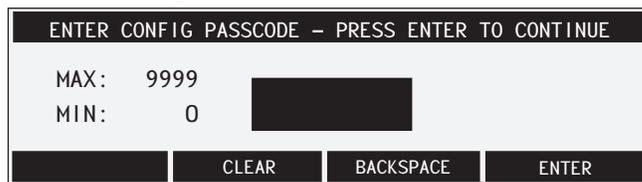
1. Turn the pump on and allow it to complete its startup routine.



2. At the **SELECT THE MODE** screen, find and select **CUSTOM PROGRAM**. (Depending on the current setup for your pump, you usually have to press **More** and search for it on alternative screens.)



3. Use the number buttons to specify the passcode: **3000**, then press **Enter**.



4. Find the option or feature you wish to customize, enable, or disable. Make your changes. Usually, you must press  () to save changes and exit. In other cases, your changes are saved when you exit a feature or option. (You can always revise any changes you have made before exiting the configuration utility.)
6. Once you exit custom configuration, whatever changes you made to pump configuration are now “permanent” until the next time you enter the custom configuration and change them. (Here, “permanent” means at least 10 years.)

Utilizing PharmGuard® Toolbox to configure the pump

The PharmGuard® Toolbox program must be installed and running before beginning this procedure.

1. Turn the pump on and allow it to complete its startup routine.
2. Connect the PC and pump via the IR-RS232 adapter.
3. Follow prompts in PharmGuard® Toolbox to select and confirm program options.
4. Review complete program and download to the pump.
5. Save and print selected program options (save to electronic file for future reference).

Factory default configuration

The Medfusion™ 3500 infusion pump comes with the General Defaults as its active settings. These defaults create a basic group of features, including syringes, delivery modes, program options, libraries and their templates, occlusion settings, flow rates, and alarms. Such standard features provide a foundation for customizing the pump to meet your needs.

Three major sets of defaults

The Medfusion™ 3500 infusion pump software has three sets of factory default configurations, they are:

- Anesthesia
- General
- NICU

These can be used to restore configuration to factory settings after a pump has been customized. Their settings can also be used as a “foundation” for customizing a pump to meet the specific needs of a unit, department, organization, or hospital.

These major groups of presets can be used to undo all customizations that have been made to a pump, and restore it to a more standard usage.

For information on restoring and/or using Default Configurations, see the chapter titled “*Restore & Use Default Configuration*”.

Enabling, disabling, and moving

The most common capability of custom configuration is allowing you to simply *enable* or *disable* individual features and options. You can also move an enabled feature to reorder its appearance onscreen.

- When a feature or option is *enabled*, **you can use it**. All its settings or options are available to select from on applicable screens.
- When a feature or option is *disabled*, **you cannot use it**. None of its settings or options are available to select from on any screen.
- The same holds true for enabling and disabling syringes for use with the pump. The parameters for correctly using the syringes become available or unavailable.

In other words, you are simply toggling a feature on or off. The feature you toggle becomes available or unavailable until the next time you decide to change its status.

Note: For more information on this feature, see the chapters titled “*Enabling / Disabling / Moving Syringes*”, “*Enabling / Disabling / Moving Delivery Modes*” and “*Enabling / Disabling / Moving Program Options*”.

Table of custom configuration options

The following table lists the features and options available for customization to meet the specific needs of your unit, department, organization, or hospital:

Feature or Option	What It Controls
Select Syringes	The Medfusion™ 3500 infusion pump is engineered to work precisely within the physical parameters of specific syringe models from specific manufacturers. For this reason it comes with a database of syringe models that are available for use with the pump.
Select Delivery Modes	The pump comes with numerous standard delivery modes enabled. Plus, there are several other delivery modes you can set up. All these delivery modes can be either enabled or disabled for use with your infusion pump.
Select Program Options	<p>The pump also has various options you can use to modify delivery or infusion settings. They are:</p> <ul style="list-style-type: none"> • Standby • Loading Dose • Bolus Dose • Volume Limit • KVO • Save to Library • Toggle PVD / PDD • Override Occl Limit • Override Alarm Volume • Toggle Empty Tone • Toggle Near Empty Tone • Delayed Start • Toggle Rapid Occlusion Detection
Auto Prompts	<p>The <i>auto prompts</i> automatically prompt the user to enter or verify the enabled Program Options every time an infusion is programmed. The Program Options that may be auto-prompted include:</p> <ul style="list-style-type: none"> • Standby • Bolus Dose • Volume Limit • KVO
E-Plates / Library D	You have the option to enable or disable E-Plates. If E-plates are enabled, then Library D will not be available. If E-plates are disabled, then Library D is available.
Pump ID Label	Allows giving each Medfusion™ 3500 infusion pump its own identification name and/or number. This can be useful for identifying not only the pump, but also the type of configuration setup used by the pump.
Occlusion Limit	Allows selecting and setting from 4 different levels of occlusion limits programmed into the infusion pumps. They are: <i>Very Low, Low, Normal, High</i> .
Maximum Flow Rate	Allows limiting maximum flow rate settings for normal delivery of medication or fluids.
Maximum Bolus Rate	Allows setting the maximum bolus delivery rate used as a standard for pump operations.
Program Dose or Program Volume Display	<p>You have the option of displaying onscreen during any infusion the <i>program volume delivered</i> or <i>program dosage delivered</i>.</p> <p>If there is <i>no concentration set</i>, then the display is the <i>program volume delivered</i>.</p>

Feature or Option	What It Controls
Alarm Setup	<p>The <i>alarms</i> are the warnings or cautions the pump sounds to let you know something is happening or about to happen. There are four major options for alarm setup:</p> <ul style="list-style-type: none"> • Alarm Style – Choose International or Medex defined alarms. • Alarm Silence Time – Set the interval the pump remains silent after you press . • Near Empty Alarm Time – Set the time “before the syringe is empty” when the pump sounds an alarm. (This alarm may be disabled.) • Alarm Loudness – Choose alarm volume levels from very soft to very loud.
Keyclick (beep) Loudness	<p>The <i>keyclick</i> is the beeping sound the buttons make when you press them. You can set this range from <i>off</i> to <i>very loud</i>.</p>
Clear Library Entry (Template)	<p>This is a housekeeping utility that allows erasing or deleting the contents of a single template in an E-Plates or Standard library.</p>
Clear All Libraries	<p>This is a housekeeping utility that allows erasing or deleting the contents of ALL templates in ALL E-Plate and Standard libraries.</p>
Default Configuration Restore & Use	<p>This pump comes with three major sets of configuration defaults intended to provide a baseline for meeting the needs of a unit, department, organization, or hospital.</p> <p>They are:</p> <ul style="list-style-type: none"> • Anesthesia Defaults. • General Defaults. • NICU Defaults. <p>The term “default” is here defined as values or groups of values that are arbitrarily used as standard settings. But with this pump, “standard settings” are whatever values are defined as standard by any specific unit, department, organization, or hospital.</p> <p>You may opt to restore these defaults at any time through custom configuration. Tables of settings for all three groups are in the chapter titled “<i>Restore / Use Default Configuration</i>”.</p>
Set Unlock Passcode	<p>Allows activation of a numeric pass code of the your choice, from 1 to 9999. Once activated, the pass code must be entered to unlock a locked user interface. This feature helps to increase the security of the infusion parameters.</p>
Rapid Occlusion Detection (FlowSentry)	<p>Allows activation of a feature that will detect an occlusion to flow much more quickly than is possible by the conventional force sensor method. FlowSentry™ may be enabled or disabled.</p>
1 mL Syringe Support	<p>Allows 1mL syringes to be enabled/disabled.</p>
Teach Mode	<p>The <i>teach mode</i> is the option which allows one pump to <i>transmit</i> its custom configuration to another pump.</p>
Learn Mode	<p>The <i>learn mode</i> is the option which allows one pump to <i>receive</i> custom configuration transmitted from another pump. The pump may learn: configuration only; libraries only; or all.</p>

Table of library features

The following is a table of features for E-Plates and Standard libraries. These can be enabled, disabled, and customized to meet the needs of your unit, department, organization, or hospital.

Feature or Option	What It Controls
E-Plates Library Templates	<p>The E-Plates Library contains 16 blank or used “templates” for storing settings. Such presets include syringe size, rate of dosage, size of dosage, patient’s weight, and so on.</p> <p>Each template can be given an easily recognized name. After you select a template for use, its name appears on the delivery screen, so you can verify correct settings by verifying the name.</p> <p>“E-Plates” is an abbreviation for “Electronic Templates”. When you use an E-Plate, all its presets load <i>at once</i>, without step-by-step verification, and the pump pauses at the BEGIN INFUSION screen. Fill in any blank fields, verify all parameters on the screen, and then press  () to begin infusion. If E-Plates are not desired, a toggle can be used to disable E-Plates and enable “standard” Library D in its place.</p>
Standard Libraries Templates	<p>The pump has 3 “standard” libraries (4 if Library D is enabled) containing 16 blank or used “templates” per library. These are <i>user-programmable</i> “sets” of standard values used for administering standard fluids or medications without having to set up individual dosage each time.</p> <p>Each template can be given an easily recognized name, with as many as 15 characters. After you select a template for use, its name appears on the delivery screen. You can then verify the correct template has been selected by verifying the name. Always confirm that all settings are correct prior to beginning the infusion.</p> <p>Always set up standard dosages according to the standards & practices of your hospital, unit, or organization.</p>
Create & Save Entries to the pump (Templates)	<p>It is very easy to save a new template to any of the 4 libraries. This should be a carefully controlled aspect of configuration, as it takes place <i>outside</i> the Custom Program utility, or using PharmGuard® Toolbox on a PC.</p> <p>If you are creating a library entry using the SAVE TO LIBRARY feature from the OPTIONS menu, You must <i>enable</i> the SAVE TO LIBRARY feature before you can create a template (in the CUSTOM PROGRAM utility).</p> <ol style="list-style-type: none"> 1. At the SELECT THE MODE screen, choose an infusion mode and set up the infusion you wish to save as a template. 2. At the BEGIN INFUSION screen, press Options. Select the SAVE TO LIBRARY option to store it as a template in your choice of the 4 libraries. 3. Repeat steps 1 & 2 for each template you create. 4. When <i>finished creating templates</i>, you may want to use the CUSTOM PROGRAM utility to <i>disable</i> the SAVE TO LIBRARY feature. Otherwise, <i>any user</i> can make changes to the templates. <p>Once stored in a library, these templates can be reused any time you need to start a standard infusion delivery.</p> <p>If you are creating a library entry using PharmGuard® Toolbox on a PC;</p> <ol style="list-style-type: none"> 1. Both the pump and PC must be On and connected via the Serial Port cable. 2. Follow the prompts in PharmGuard® Toolbox for library entries. 3. Save and check all entries. 4. Download library entries to the pump.

Table of configuration cloning features

Configuration cloning is the ability to create custom configuration settings in one pump, and then transfer them to another pump. Below is a table of Configuration Cloning features and their definitions.

Feature or Option	What It Controls
Learn Everything	With this cloning feature, the pump receives <i>all</i> custom configuration settings, including Standard and E-Plates Libraries. This takes approximately one minute.
Learn Config Only	With this cloning feature, the pump receives <i>only</i> the custom configuration settings. This takes approximately two seconds.
Learn Libraries Only	With this cloning feature, the pump receives only the library settings. This takes approximately one minute.

Passcode protection

Access to custom configuration is controlled by a security code. It is recommended that you not give this password to all users. Only persons authorized to reconfigure the pump's operations should hold this passcode.

The custom configuration passcode is: **3000**

Never tell this security setup control code to unauthorized personnel in your unit, department, organization, or hospital.

It is recommended your unit, department, organization or hospital establish a regulated protocol for determining who is responsible for configuring and reconfiguring the Medfusion™ 3500 infusion pump.

Only properly trained personnel should ever be authorized to set up this pump for use with patients.

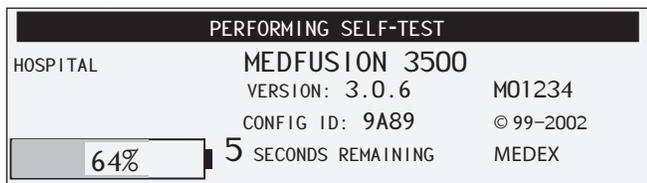
WARNING: Unauthorized configuration.

Unauthorized changes to pump configuration may cause confusion among users, which can create a hazard for use and can result in serious injury or death.

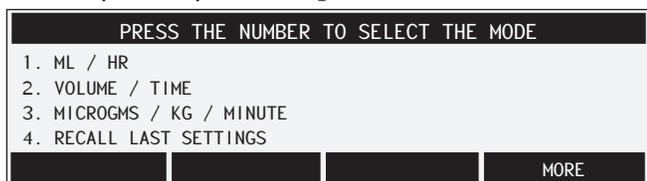
Using the custom configuration passcode

Below are the steps for accessing the custom programming or configuration mode of the Medfusion™ 3500 infusion pump:

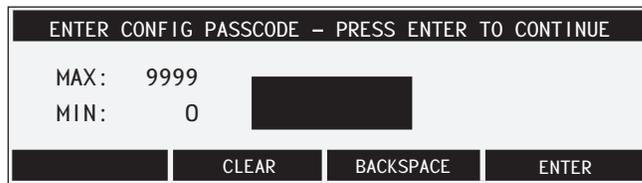
1. Turn the pump on and allow it to complete its startup routine.



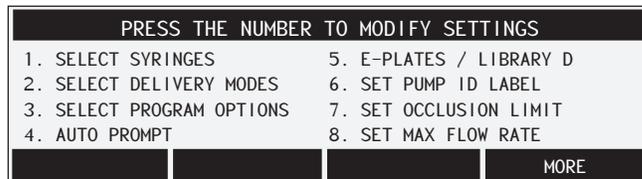
2. At the **SELECT THE MODE** screen, use the **number** buttons to select the **CUSTOM PROGRAM** option (you may need to press **More** to find it).



3. Use the **number** buttons to enter the passcode (**3000**), then press **Enter**.



4. The **MODIFY SETTINGS** screen appears. Make your custom configurations by following any on-screen prompts and directions.



5. Save your changes by pressing  () or when you exit **CUSTOM PROGRAM**.

Restore & use default configuration settings

This pump has 3 sets of default factory configuration files intended to meet the standard needs of most organizations or hospitals. You may select, restore, and use any of these default settings at any time through custom configuration. They are:

- Anesthesia Defaults
- General Defaults
- NICU Defaults

These default settings are a permanent part of the software used to run the Medfusion™ 3500 infusion pump. The default settings are simply a resource you can use to restore factory settings. Your customizations are saved to the configuration file that tells the pump how to use the features and options you have configured.

Note: The Medfusion™ 3500 infusion pump is shipped with the **General Defaults** configuration settings selected.

Why use default configuration settings?

If you are reconfiguring a Medfusion™ 3500 infusion pump that has been customized repeatedly, you may find the default configurations provide a common starting point for new customization.

So you may find it convenient to simply restore one of the above three default configuration settings. Then just begin making your customization from there. You will have removed all customizations made by other units or departments.

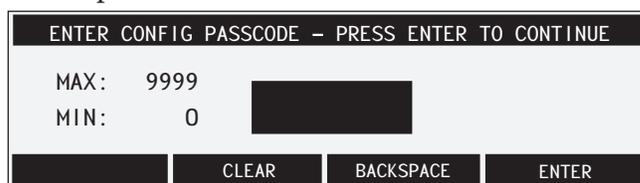
Restoring default settings

Below are the steps for restoring the default settings for the Medfusion™ 3500 infusion pump:

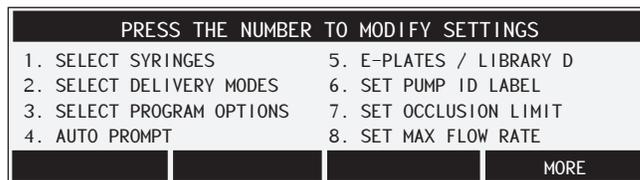
- From the **SELECT THE MODE** screen, select **CUSTOM PROGRAM** (you may need to press **More** until you locate it).



- Use the **number** buttons to enter the passcode, then press **Enter**.



- The **MODIFY SETTINGS** screen appears. Select **RESTORE DEFAULT CONFIGURATION** (you may need to press **More** until you locate it).



- The **SELECT DEFAULT CONFIGURATION** screen appears. The previously selected set of defaults is highlighted. Select the default configuration you wish to reinstate. Your choices are:
 - Anesthesia Defaults
 - General Defaults
 - NICU Defaults
- Pressing the **number** button for the selection puts the *highlight* on the set of defaults you intend to use. When ready, press **Enter**.
- The selected default settings have replaced all changes made to the pump configuration. See the following tables to review those default settings.

Default Settings for Anesthesia, General, and NICU

This section contains a series of tables containing default setting information for Anesthesia, General, and NICU.

Syringe Model

Syringe Model	Anesthesia	General	NICU
B. Braun Omnifix	Disabled	Disabled	Disabled
B. Braun Perfusor	Disabled	Disabled	Disabled
B-D Glass	Disabled	Disabled	Disabled
B-D	Enabled	Enabled	Enabled
Monoject	Enabled	Enabled	Enabled
Terumo	Enabled	Enabled	Enabled
AstraZeneca	Disabled	Disabled	Disabled

Delivery Modes

Default Delivery Modes	Anesthesia (w/Order)	General (w/Order)	NICU w/Order
Micrograms \ kg \ Minute	Enabled, 1 st	Enabled, 3 rd	Disabled
Micrograms \ kg \ Hour	Enabled, 2 nd	Disabled	Disabled
Milligrams \ kg \ Minute	Enabled, 3 rd	Disabled	Disabled
Milligrams \ kg \ Hour	Enabled, 4 th	Disabled	Disabled
Milliliter \ Hour	Enabled, 5 th	Enabled, 1 st	Enabled, 1 st
Recall Last Setting	Enabled, 6 th	Enabled, 4 th	Enabled, 3 rd
Page Break	Enabled, 7 th	Enabled, 5 th	Enabled, 4 th
Volume / Time	Disabled	Enabled, 2 nd	Enabled, 2 nd
Micrograms \ Hour	Disabled	Disabled	Disabled
Micrograms \ Minute	Disabled	Disabled	Disabled
Milligrams \ Hour	Disabled	Disabled	Disabled
Milligrams \ Minute	Disabled	Disabled	Disabled
Milliunits \ Hour	Disabled	Disabled	Disabled
Milliunits \ Minute	Disabled	Disabled	Disabled
Units \ Hour	Disabled	Disabled	Disabled
Units \ Minute	Disabled	Disabled	Disabled
Units \ kg \ Hour	Disabled	Disabled	Disabled
Library A	Disabled	Disabled	Disabled
Library B	Disabled	Disabled	Disabled
Library C	Disabled	Disabled	Disabled
Library D	Disabled	Disabled	Disabled
Custom Dilution	Disabled	Disabled	Disabled
Intermittent Volume / Time	Disabled	Disabled	Disabled
Custom Program	Enabled, 8 th	Enabled, 6 th	Enabled, 6 th
Biomed	Enabled, 9 th	Enabled, 7 th	Enabled, 7 th

Program Options

Program Options	Anesthesia	General	NICU
Standby	Enabled	Enabled	Enabled
Loading Dose	Enabled	Disabled	Disabled
Bolus Dose	Enabled	Disabled	Disabled
Volume Limit	Enabled	Enabled	Enabled
KVO	Disabled	Disabled	Disabled
Toggle PVD / PDD	Disabled	Disabled	Disabled
Save to Library	Enabled	Enabled	Enabled
Toggle Rapid Occlusion Detection	Enabled	Enabled	Enabled
Override Occlusion Limit	Enabled	Enabled	Enabled
Override Alarm Volume	Disabled	Disabled	Disabled
Toggle Empty Tone	Disabled	Disabled	Disabled
Toggle Near Empty Tone	Disabled	Disabled	Disabled
Delayed Start	Disabled	Disabled	Disabled

Auto Prompt Options

Auto Prompt Options	Anesthesia	General	NICU
Standby	Disabled	Disabled	Disabled
Bolus Dose	Disabled	Disabled	Disabled
Volume Limit	Disabled	Disabled	Disabled
KVO	Disabled	Disabled	Disabled

Other Default Options

Other Default Options	Anesthesia	General	NICU
E-Plates Feature	Enabled	Disabled	Disabled
Pump ID Label	<i>Blank</i>	<i>Blank</i>	<i>Blank</i>
Occlusion Limit	<i>Normal</i>	<i>Normal</i>	<i>Normal</i>
Maximum Delivery Rate	1130 mL/hr	300 mL/hr	300 mL/hr
Maximum Bolus Rate	Maximum	10×	5×
Program Dose Display	Enabled	Disabled	Disabled
Alarm Type	Medex	Medex	Medex
Alarm Silence Interval	2 minutes	2 Minutes	2 Minutes
Near Empty Alarm Interval	5 minutes	5 Minutes	5 Minutes
Alarm Volume (Loudness)	2	4	3
Key Click Volume	2	2	2
Syringe Model and Type	BD, Monoject, Terumo	BD, Monoject, Terumo	BD, Monoject, Terumo

Controlling onscreen appearance

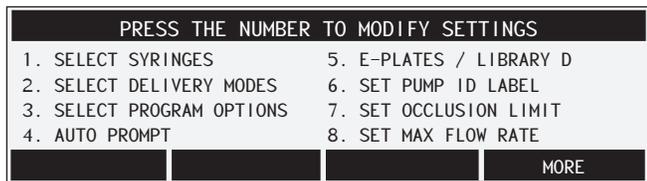
There are two features of custom programming which allow controlling how your menu screens look. These are:

- Moving or reordering entries
- Enabling / disabling / moving a page break

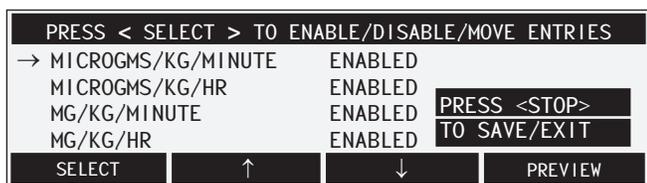
Reordering features onscreen

The Medfusion™ 3500 infusion pump is shipped with the *General defaults* delivery modes enabled. You can rearrange the order of precedence of items onscreen through custom configuration. Their order on the **SELECT DELIVERY MODES** configuration screens determines *where* they appear on the **SELECT THE MODE** or **PROGRAM OPTIONS** screens when enabled. It has no effect on how they work. All you are doing is moving items around onscreen.

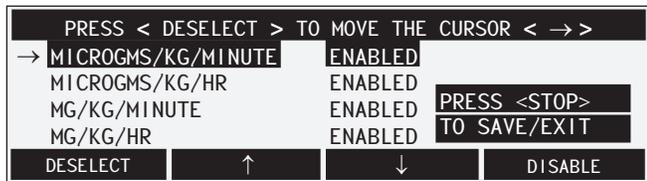
1. Access the **CUSTOM PROGRAM** menu (see page 8) and choose **SELECT DELIVERY MODES** by pressing its **number** (in this case it is number 2).



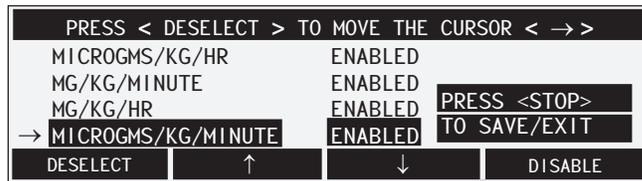
2. At the **ENABLE / DISABLE / MOVE** screen, use the \uparrow or \downarrow buttons to move the \rightarrow to the line you wish to move.



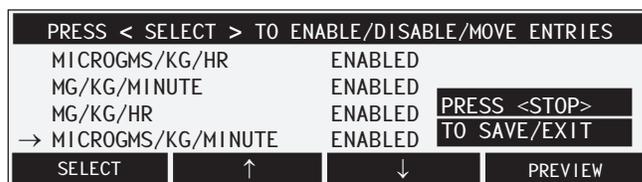
3. Press **Select** to choose the line and put the highlight on it.



4. Use the \uparrow or \downarrow buttons to reposition the selected line to the order you want it to appear onscreen.



5. Press **Deselect**. This fixes the selection where you placed it.
6. You may now press **Preview** to check the appearance of the actual screen. Then press **Continue** to return.



7. Repeat steps 2-6 as necessary if you have other selections to move. (These changes do not take effect until you save them.)
8. Press to save your changes and exit to the **MODIFY SETTINGS** screen. Or press to exit to the **SAVE CHANGES YES / NO** screen. Answer **No** to exit without saving changes.



Enabling / disabling / moving the page break

The Medfusion™ 3500 has one page break you can use to control how your **SELECT THE MODE** screen appears.

This page break is found in the **SELECT DELIVERY MODE** reconfiguration screens. The page break feature works hand in hand with the move entries to give control of how and where information displays onscreen.

Rules for using page breaks

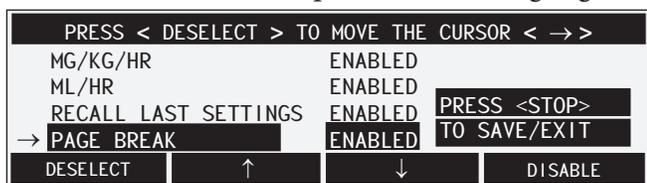
Below are the rules of thumb for working with page breaks:

- You may have as many as **8 items** on any menu screen.
- You may reorder them in **any preference** you wish.
- You have **1 page break** you can place wherever you wish in the order of these items.
- Reordering items and the page break are purely cosmetic customizations.
- The system automatically inserts a page break **after** the 8th entry on every screen.

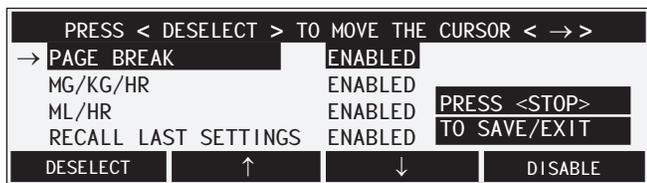
Note: Reordering the appearance of items on screen is a purely “cosmetic” customization, and does not effect function of an option or feature.

Steps for placing the page break

1. First, rearrange the lines as you wish them to appear on the menu screen as shown on the previous page.
2. Now use the ↑ or ↓ buttons to move the marker → to **PAGE BREAK**, then press **Select** to highlight it.



3. Use the ↑ or ↓ buttons to move the **PAGE BREAK** to the place you want it to appear in the onscreen list.



4. Press **Deselect**. The page break becomes fixed in this position when you save your changes and exit custom configuration.
5. Press  () to save your changes and exit to the **MODIFY SETTINGS** screen. Or press  () to exit to the **SAVE CHANGES YES / NO** screen. Answer **No** to exit without saving changes.



Select syringes

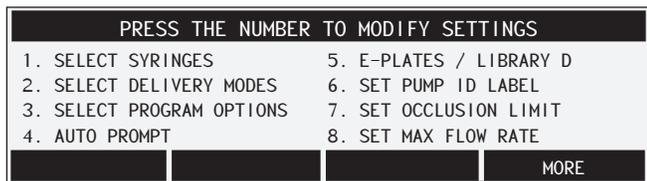
The first choice on the **MODIFY SETTINGS** screen is usually **SELECT SYRINGES**. This selection is made by *syringe model*. This is where you tell the pump which syringes it can use.

Note: When you *enable* a syringe model, you are telling the pump it *can use* those syringes. Parameters and characteristics of those syringes are made available for use. During set up of any infusion of medications or fluids, only enabled syringes appear for selection and use.

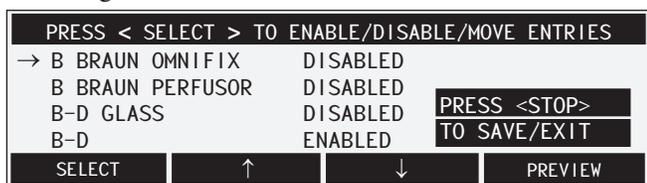
Enable, disable or move syringes

The Medfusion™ 3500 infusion pump is engineered to work precisely within the physical parameters of specific syringe models. For this reason it comes with a database of syringes that are available for use with the pump.

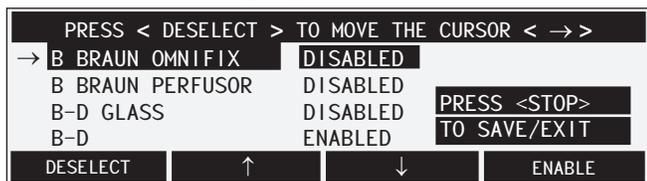
1. Access the **CUSTOM PROGRAM** menu (see page 8) and choose **SELECT SYRINGES** by pressing its **number** (in this case it is number 1).



2. A list of syringes by model appears onscreen. To the right of list is either **Enabled** or **Disabled**.

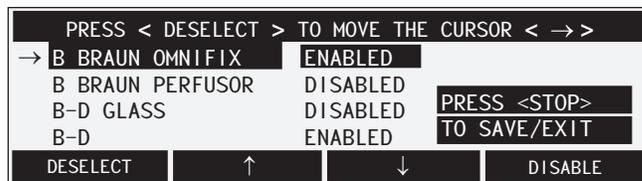


3. Use the ↑ or ↓ buttons to move the → marker to the syringe and manufacture you wish to enable, disable or move.
4. Press **Select** to *highlight* the model.



5. **To Enable / Disable a selection:**

Press either “**Enable**” or “**Disable**” (depending on what you are doing). Notice how the screen changes.



To Move a selection:

Press the ↑ or ↓ buttons to move the syringe model to a new location in the list. Notice how it shifts relative to other items on the list.

6. Press **Deselect** to “let go” of the selection. Repeat steps 3 - 5 if you wish to enable/disable or move another syringe.
7. Press to save your changes and exit to the **MODIFY SETTINGS** screen. Or press to exit to the **SAVE CHANGES YES / NO** screen. Answer **No** to exit without saving changes.



WARNING: Disabling syringes. Once you disable a syringe selection, its settings are no longer available during infusion set up. Inform personnel using this pump they should never use a syringe whose settings are not available during setup. The result could be over-infusion or under-infusion, with injury or death to patient.

Select delivery modes

The Medfusion™ 3500 infusion pump comes with 17 different delivery modes, plus 7 options for further customizing infusion setup.

Delivery modes

Below (and on the following page) is an alphabetized table of the delivery modes, and their features & options:

Delivery Mode	What it Does
Custom Dilution	<i>Custom dilution</i> is a form of body weight delivery where you program a target delivery rate and the pump calculates the drug dilution to meet your target. The settings required are: initial (undiluted) drug concentration; patient's weight; target dose rate; target total volume (drug plus diluting fluid).
Volume / Time	During <i>volume / time</i> delivery, the pump delivers a specific volume per specified time. The screen indicates the effective delivery rate and time remaining to complete the infusion.
Intermittent Volume / Time	A combination of intermittent dosing and volume / time dosing, where the pump delivers a specific volume per specified time, then pauses a set time, then delivers another dosage, etcetera.
Micrograms / kg / Hour	This delivers a dosage based on <i>micrograms</i> of medication or fluid per <i>kilogram of body weight per hour</i> .
Micrograms / Kg / Minute	This delivers a dosage based on <i>micrograms</i> of medication or fluid per <i>kilogram of body weight per minute</i> .
Milligrams / Kg / Hour	This delivers a dosage based on <i>milligrams</i> of medication or fluid per <i>kilogram of body weight per hour</i> .
Milligrams / Kg / Minute	This delivers a dosage based on <i>milligrams</i> of medication or fluid per <i>kilogram of body weight per minute</i> .
Units / Kg / Hour	This delivers a dosage based on <i>Units</i> of medication or fluid per <i>kilogram of body weight per hour</i> .
Micrograms / Hour	This delivers a dosage based on <i>micrograms</i> of medication or fluid <i>per hour</i> .
Micrograms / Minute	This delivers a dosage based on <i>micrograms</i> of medication or fluid <i>per minute</i> .
Milligrams / Hour	This delivers a dosage based on <i>milligrams</i> of medication or fluid <i>per hour</i> .
Milligrams / Minute	This delivers a dosage based on <i>milligrams</i> of medication or fluid <i>per minute</i> .
Milliliter / Hour	This delivers a dosage based on <i>milliliters</i> of medication or fluid <i>per hour</i> .
Milliunits / Hour	This delivers a dosage based on <i>milliunits</i> of medication or fluid <i>per hour</i> .
Milliunits / Minute	This delivers a dosage based on <i>milliunits</i> of medication or fluid <i>per minute</i> .
Units / Hour	This delivers a dosage based on <i>units</i> of medication or fluid <i>per hour</i> .
Units / Minute	This delivers a dosage based on <i>units</i> of medication or fluid <i>per minute</i> .
Recall Last Settings	The <i>recall last settings</i> feature tells the pump to “remember & insert” the last group of infusion settings used. You may then reuse those settings “as is” to begin another infusion, or modify as necessary the settings on different screens.

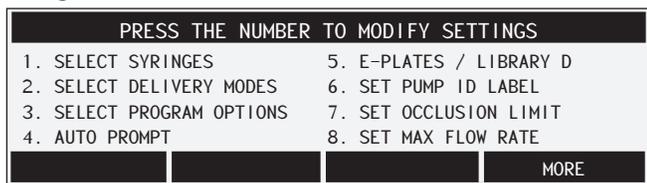
Using Templates to Set Up Delivery	What it Does
E-Plates/Library D	<p>E-plates is a library of fully automatic templates. Shipped from factory with 16 empty templates. May contain templates of presets you can reuse without having to type them each time. When selected, all preset values are inserted, and pump progresses directly to the BEGIN INFUSION screen. There, you only have to press  () to begin the dosage.</p> <p>If E-Plates are disabled, this becomes Standard template library D.</p>
Library A	<p>Standard template library A. Shipped from factory with 16 empty templates. May contain templates of presets you can reuse without having to type them each time. You must verify presets at each level by pressing Enter.</p>
Library B	<p>Standard template library B. Shipped from factory with 16 empty templates. May contain templates of presets you can reuse without having to type them each time. You must verify presets at each level by pressing Enter.</p>
Library C	<p>Standard template library C. Shipped from factory with 16 empty templates. May contain templates of presets you can reuse without having to type them each time. You must verify presets at each level by pressing Enter.</p>

Option	What it Does
Page Break	<p>The <i>page break</i> feature is found in the SELECT DELIVERY MODE feature as a part of the CUSTOM PROGRAM configuration utility. It works hand-in-hand with the move entries option to help you control <i>how</i> and <i>where</i> feature titles display onscreen.</p>
Custom Program	<p><i>Custom Program</i> is what you use to customize the settings of the Medfusion™ 3500 infusion pump. It is always available and may never be disabled. Your only option for changing CUSTOM PROGRAM is to rearrange its position onscreen.</p>
Biomed	<p><i>Biomed</i> is used to perform diagnosis, troubleshoot and calibrate the Medfusion™ 3500 infusion pump. It is always available and may never be disabled. Your only option for changing Biomed is to rearrange its position onscreen. Specific information about the Biomed option can be found in the <i>Medfusion™ 3000 Series Technical Service Manual</i>.</p>

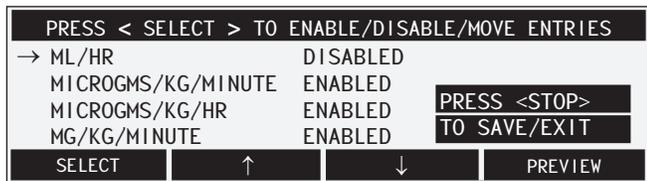
Enable, disable or move delivery modes

The Medfusion™ 3500 infusion pump has delivery modes you can enable, disable, or customize for infusion deliveries. The pump is shipped with the *General Defaults* settings for all these modes. This means not all features are enabled, and some may be enabled you do not wish to use. The process for enabling or disabling or moving these modes is identical.

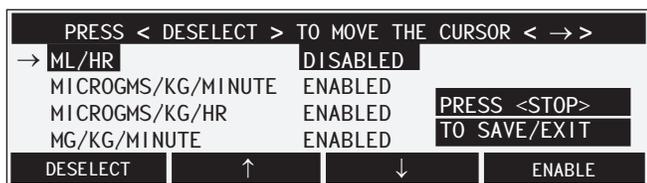
1. Access the **CUSTOM PROGRAM** menu (see page 8) and choose **SELECT DELIVERY MODES** by pressing its **number** (in this case it is number 2).



2. A list of the delivery modes appears onscreen. To the right of list is either **Enabled** or **Disabled**.

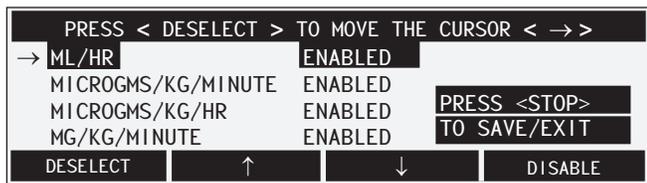


3. At the **ENABLE / DISABLE / MOVE** screen, use the **↑** or **↓** buttons to move the **→** marker to the delivery mode you wish to enable, disable or move.
4. Press **Select** to *highlight* the delivery mode you wish to enable, disable, or move.



5. **To Enable or Disable a selection:**

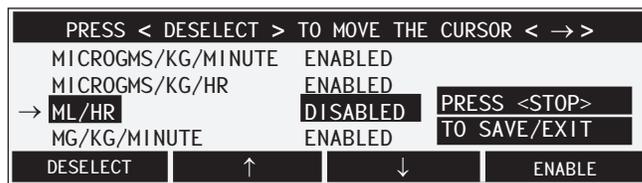
Press **Enable** or **Disable** (depending on what you are doing). Note how the screen changes.



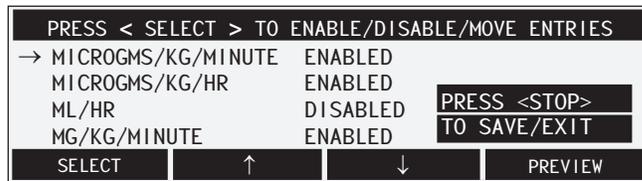
To Move a selection:

Press the **↑** or **↓** buttons to move the delivery

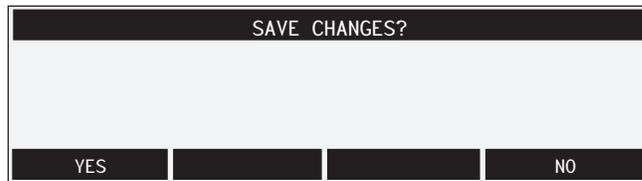
mode to a new location in the list. Notice how it shifts relative to other items on the list. Place it where you want it to appear on the **SELECT THE MODE** screen.



6. Press **Deselect** to remove the highlight.



7. To enable, disable or move another delivery mode, repeat steps 3-6. If you wish, you may press **Preview** to see how this change will look. Then press **Continue** to return to the **ENABLE/DISABLE/MOVE** screen.
8. Press **STOP** (⏹) to save your changes and exit to the **MODIFY SETTINGS** screen. Or press **BACK** (⏪) to exit to the **SAVE CHANGES YES / No** screen. Answer **No** to exit without saving changes.



Custom Program

Custom Program is what you use to configure and reconfigure the Medfusion™ 3500 infusion pump, so while you can move it onscreen, it **cannot be disabled**.

Biomed

Even though Biomed is listed along with delivery modes, it is not part of the pump operation, nor part of standard configuration. It is a *special maintenance utility* intended for use only by trained service technicians. It is a part of the Maintenance and Calibration service on the Medfusion™ 3500 infusion pump. While you can move Biomed onscreen, it **cannot be disabled**.

Program options

The Medfusion™ 3500 infusion pump has several specific options you can enable or disable, which can be used to modify infusion deliveries.

Program options

Below is a table of these program options, and a definition of what each controls:

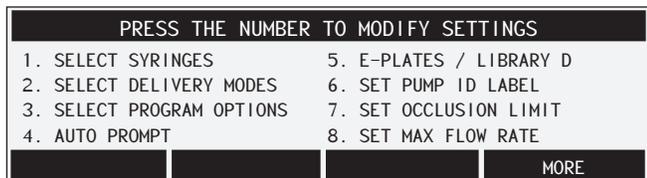
Option	What it Controls
Standby	<p><i>Standby</i> is an option that allows setting the pump for an infusion, then delaying advisory alarms for a programmed interval of time.</p> <ul style="list-style-type: none"> The pump does not automatically start an infusion at the end of the standby. Instead, the pump triggers an alarm at the end of the standby period to tell you to either Start or Cancel the infusion. <p>Enabling <i>Standby</i> adds the option to every infusion setup.</p>
Loading Dose	<p>Enabling the <i>loading dose</i> is a specified volume (or dose) of drug infused as a one-time-only bolus prior to the start of normal delivery. You may also configure loading dose to be automatically “prompted” or “asked for” in the programming steps.</p> <p>Enabling <i>loading dose</i> adds the option to every infusion setup.</p>
Bolus Dose	<p>A <i>bolus dose</i> is an optional parameter of some delivery modes wherein you specify a bolus volume to be delivered in a specified time. You may also configure bolus dose to be automatically “prompted” or “asked for” in the programming steps.</p> <p>Enabling <i>bolus dose</i> adds the option to every infusion setup.</p>
Volume Limit	<p>A <i>volume limit</i> is an option available for most delivery modes (except <i>volume/time</i> and <i>intermittent</i>). On reaching the preset volume limit, the pump stops – or changes to KVO if a keep vein open rate has been programmed.</p> <p>Volume limit is based on the quantity of program volume delivered. Before you can start a new volume limit, the old PVD (program volume delivered) or PDD (program dose delivered) is automatically cleared.</p> <p>Enabling <i>volume limit</i> adds the option to every infusion setup where it applies.</p>
KVO	<p>The <i>keep vein open</i> (KVO) rate is an option available for most delivery modes (except <i>volume/time</i> and <i>intermittent volume/time</i>).</p> <ul style="list-style-type: none"> You must have a <i>volume limit</i> programmed for KVO to work. After a volume limit is reached, a low rate (KVO) is set to maintain patency of the infusion site. The range of rates available appears on the Enter KVO Rate screen. KVO rates are calculated by syringe size and its minimum flow rate. The programmed KVO rate must be <i>less than</i> the normal delivery rate and <i>greater than or equal to</i> minimum flow rate for the syringe. <p>Enabling this adds the option to every infusion setup.</p>

Option	What it Controls
Save to Library	With the <i>save to library</i> feature enabled, you may save any group of infusion delivery settings to any template in any of the four libraries. It is recommended using this feature only as a configuration tool, then disabling it before allowing user access to the pump. If you allow unlimited access to this “Save to Library” feature, then there is no security for the contents of any library or its templates.
Toggle PVD / PDD	With this feature enabled, you have the option of toggling between displaying either the <i>program volume</i> delivered or the <i>program dosage</i> delivered. The pump maintains the information for both, based on the set infusion delivery, so you can toggle between them without losing data. Enabling this adds the option to every infusion setup.
Override Occl Limit	With this feature enabled you have the option of overriding the default occlusion limit and setting a desired occlusion limit. (The default occlusion limit for a 1mL syringe is Very High (VH) and cannot be overridden).
Toggle Rapid Occlusion Detection	With this feature enabled, you have the option during the current infusion of toggling between enabling and disabling the Rapid Occlusion Detection feature. Rapid Occlusion Detection recognizes an occlusion to flow much more rapidly than the conventional force sensing method.
Override Alarm Volume	With this feature enabled you have the option during the current infusion of setting and testing the alarm volume.
Toggle Empty Tone	With this feature enabled you have the option of disabling the empty tone during the current infusion.
Toggle Near Empty Tone	With this feature enabled, you have the option of disabling the near empty tone for the current infusion.
Delayed Start	The delayed start option allows you to delay the start of the infusion for up to 6 hours.

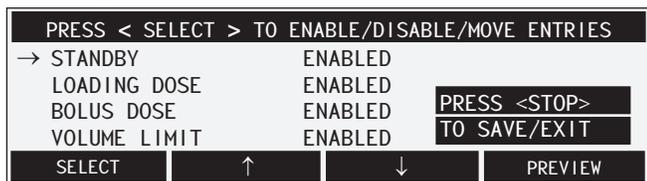
Enable / disable / move program options

Besides Syringes and Delivery Modes, the Medfusion™ 3500 has program options you can enable, disable, and/or move onscreen. The process for doing this is identical for each.

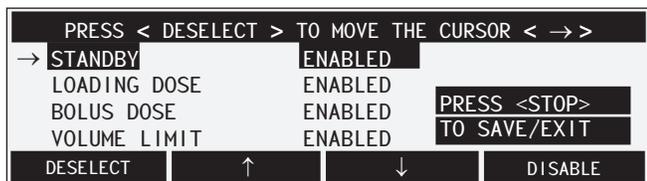
1. Access the **CUSTOM PROGRAM** menu (see page 8) and choose **SELECT PROGRAM OPTIONS** by pressing its **number** (in this case it is number 3).



2. A list of the program options appears onscreen. To the right of list is either **Enabled** or **Disabled**.

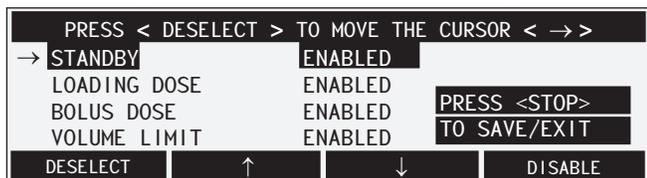


3. Use the **↑** or **↓** buttons to move the marker **→** to the program option you wish to enable, disable, or move.
4. Press **Select** to *highlight* program option you wish to enable, disable, or move.



5. To Enable / Disable a selection:

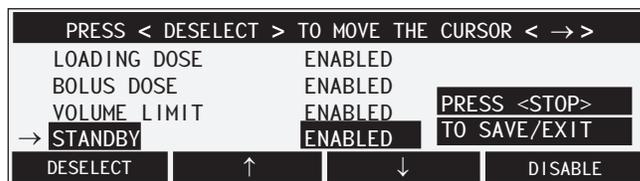
Press **Enable** or **Disable** (depending on what you are doing). Note how the screen changes.



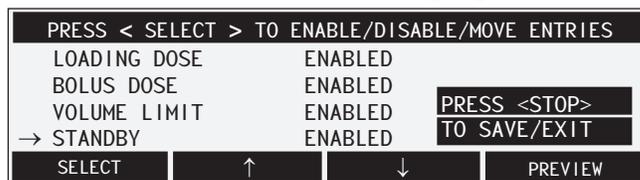
To Move a selection:

Press the **↑** or **↓** buttons to move the program option to a new location in the list. Notice how it shifts relative to other items on the list. Place it where you want it to appear on the **SELECT THE**

MODE screen.



6. Press **Deselect** to remove the *highlight*.



7. To enable, disable or move another program option, repeat steps 3-6. If you wish, you may press **Preview** to see how this change will look. Then press **Continue** to return to the **ENABLE/DISABLE/MOVE** screen.
8. Press **STOP** (⏹) to save your changes and exit to the **MODIFY SETTINGS** screen. Or press **BACK** (⏪) to exit to the **SAVE CHANGES YES / No** screen. Answer **No** to exit without saving changes.



Auto prompts

You have the option of enabling or disabling the auto prompts options, and of moving each of these items to rearrange their order of appearance onscreen. Enabling an auto prompt causes that feature to be automatically inserted into the user settings during each infusion setup.

Feature	Explanation
Standby	<i>Standby</i> lets you set the pump for an infusion, then delay starting delivery for as much as 24 hours. This also delays triggering audible advisory alarms. The pump does not automatically start an infusion at the end of the standby period. At the end of the delay, the pump triggers an alarm with prompts to tell you to either Start or Cancel the infusion.
Bolus Dose	A <i>bolus dose</i> is an optional parameter of some delivery modes wherein you specify a bolus volume to be delivered in a specified time.
Volume Limit	A <i>volume limit</i> is option available for most delivery modes (except <i>volume/time</i> and <i>intermittent</i>). On reaching the preset volume limit, the pump stops – or changes to KVO if a keep vein open rate has been programmed. Volume limit is based on the quantity of program volume delivered.
KVO	The <i>keep vein open</i> option is used as a maintenance setting when delivering infusions to patients to keep an infusion site patent between infusions.

Enable / disable / move auto prompts

Enabling auto prompts tells the pump to ask the user to review settings for each option enabled. This adds additional steps to the normal delivery programming sequence.

1. Access the **CUSTOM PROGRAM** menu (see page 8) and choose **AUTO PROMPT** by pressing its **number** (in this case it is number 4).

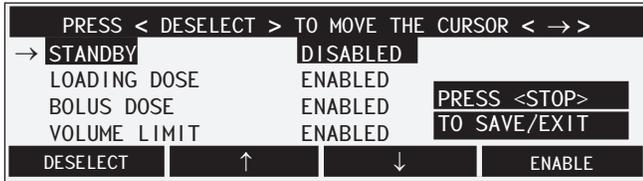
PRESS THE NUMBER TO MODIFY SETTINGS	
1. SELECT SYRINGES	5. E-PLATES / LIBRARY D
2. SELECT DELIVERY MODES	6. SET PUMP ID LABEL
3. SELECT PROGRAM OPTIONS	7. SET OCCLUSION LIMIT
4. AUTO PROMPT	8. SET MAX FLOW RATE
MORE	

2. A list of the Auto Prompt features appears onscreen. To the right of list is either **Enabled** or **Disabled**.

PRESS < SELECT > TO ENABLE/DISABLE/MOVE ENTRIES	
→ STANDBY	DISABLED
LOADING DOSE	ENABLED
BOLUS DOSE	ENABLED
VOLUME LIMIT	ENABLED
PRESS <STOP> TO SAVE/EXIT	
SELECT	PREVIEW

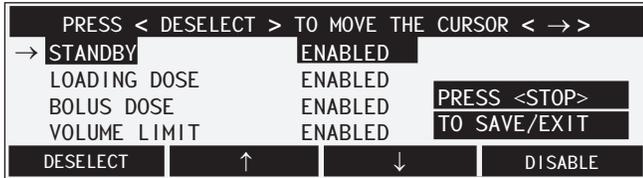
3. Use the ↑ or ↓ buttons to move the → marker to the program option you wish to enable, disable move.

- Press **Select** to *highlight* auto prompt you wish to enable, disable, or move.



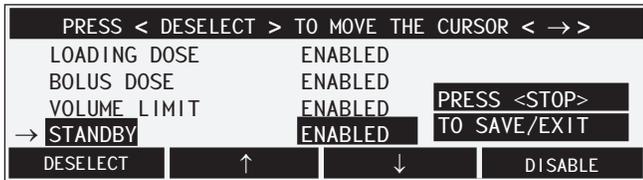
- To Enable / Disable a selection:**

Press **Enable** or **Disable** (depending on what you are doing). Note how the screen changes.

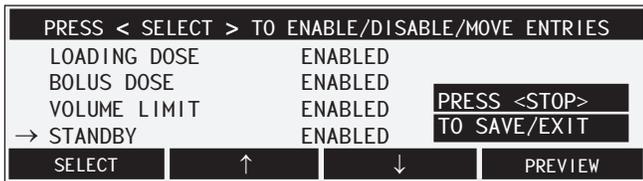


To Move a selection:

Press the \uparrow or \downarrow buttons to move the auto prompt to its new list location. Note how the screen changes.



- Press **Deselect** to remove the *highlight*.



- To enable, disable or move another auto prompt, repeat steps 3-6. If you wish, you may press **Preview** to see how this change will look. Then press **Continue** to return to the **ENABLE/DISABLE/MOVE** screen.
- Press  () to save your changes and exit to the **MODIFY SETTINGS** screen. Or press  () to exit to the **SAVE CHANGES YES / NO** screen. Answer **No** to exit without saving changes.



Miscellaneous settings

This chapter discusses various miscellaneous settings that you can modify. These include: pump ID, occlusion limits, default bolus rate, maximum flow rate, etc.

Pump ID label

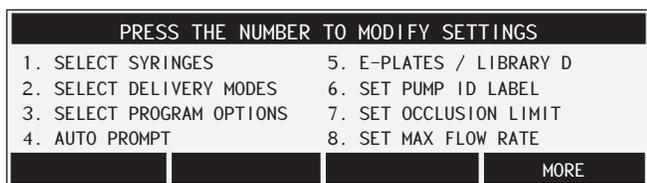
This feature allows you to give each Medfusion™ 3500 infusion pump its own identification name and/or number. This can be useful for identifying not only the pump, but also the pump's *type* of configuration setup.

- **To identify the pump**, give it a unique name containing letters and/or numbers.
- **To identify the configuration setting**, create a name for each type of configuration setup you are using in various departments, units, or organizations.
- You should not use the ID as “physical security” for the pump. Use an engraving tool or security tag for physically identifying the pump.
- Anyone with the configuration password can change the software ID.

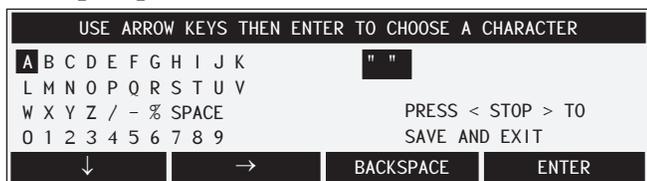
Naming the pump

When you configure the pump ID, you are simply “Naming the Pump”.

1. Access the **CUSTOM PROGRAM** menu (see page 8) and choose **SET PUMP ID LABEL** by pressing its **number** (in this case it is number 6).

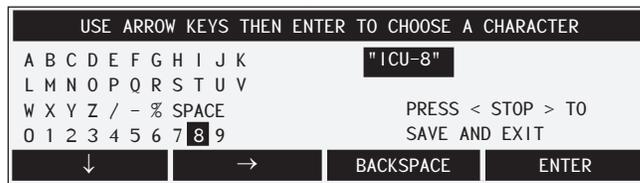


2. You now see the **CHOOSE A CHARACTER** screen. This is an alphanumeric keypad where you name the pump.



3. Press the ↑ or ↓ buttons to move the *highlight* to the letter, numeral or character you wish to type. When ready, press **Enter** to set this letter, numeral, or character onscreen.

4. Repeat steps 2 & 3 until you have typed all the letters and/or numerals you need to name the pump.



5. Press **STOP** (⏹) to save your changes and exit to the **MODIFY SETTINGS** screen. Or press **BACK** (⏪) to exit to the **SAVE CHANGES YES / NO** screen. Answer **No** to exit without saving changes.



Pump naming convention

Basically, you can give any pump any name you wish. The name simply *identifies the pump for your use*. Use the naming convention established by your unit, department, organization, or hospital. The best approach is naming pumps so you can readily recognize contents and function, (e.g., by specific unit, department, organization, or hospital). Below are naming guidelines:

- There is a **15 character limit** on pump names.
- Use **any combination** of letters, spaces, symbols, and numbers available on the **CHOOSE A CHARACTER** screen.
- You **can give the same name** to any pump or group of pumps.
- You **can give the same name** to a template within a library. Avoid this to avoid confusion.
- Pump ID **is** copied when cloning configuration from pump to pump.

Typing pump ID using the PC configuration clone

If you are using the PC version of the custom configuration, you can type the letters by clicking on them with the mouse pointer.

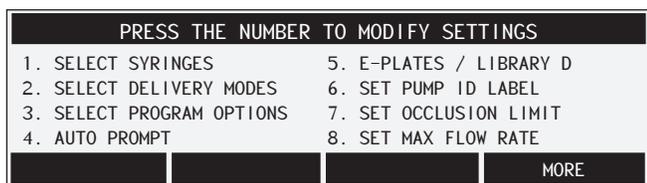
Setting occlusion limits

There are 4 different levels of occlusion limits programmed into the Medfusion™ 3500 infusion pump. They are:

- *Very Low*
- *Low*
- *Normal*
- *High*

Below are the steps for setting the Occlusion Limits:

1. Access the **CUSTOM PROGRAM** menu (see page 8) and choose **SET OCCLUSION LIMIT** by pressing its **number** (in this case it is number 7).



2. You now see the **SELECT OCCLUSION LIMIT** screen. The choices are: *VERY LOW*, *LOW*, *NORMAL*, and *HIGH*. Press the **number** button for the occlusion limit you wish this pump to use. (This puts the *highlight* on your choice.)



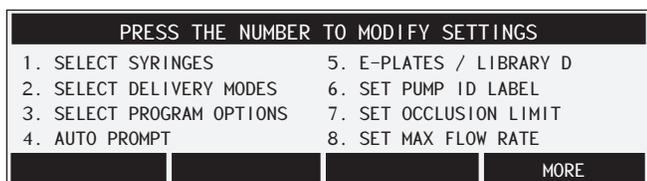
3. When ready, press **Enter** to select this occlusion limit. Or, press **BACK** (⏪) **Back** to exit without changing the Occlusion Limit.

Set maximum flow rate

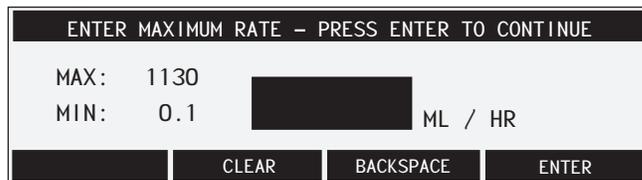
The *maximum flow rate* is the fastest infusion flow of medication or fluid you wish the pump to be able to deliver.

Below are the steps for setting the Maximum Flow Rate:

1. Access the **CUSTOM PROGRAM** menu (see page 8) and choose **SET MAX FLOW RATE** by pressing its **number** (in this case it is number 8).



2. You now see the **ENTER MAX FLOW RATE** screen. The infusion pump has a maximum flow rate range from *0.1 – 1130 mL/hr*.



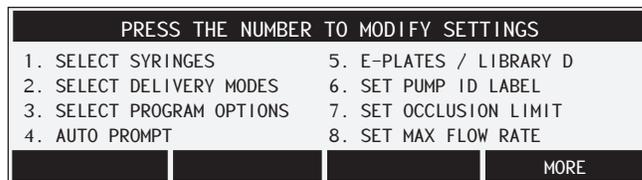
3. Use the **number** buttons to type the maximum flow rate you wish the pump to use.
4. When ready press **Enter** to set the new maximum flow rate limit. Or, press **BACK** (⏪) to exit without changing the maximum flow rate.

Set maximum bolus rates

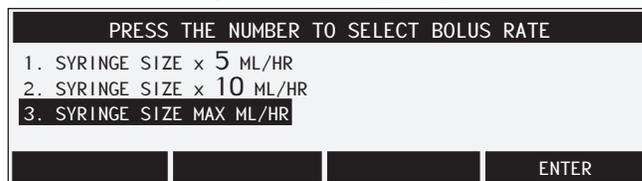
A *bolus dose* is an optional parameter of some delivery modes wherein you specify a bolus dose to be delivered in a specified time. Set Maximum Bolus Rate allows you to set the maximum flow rate at which the bolus dose can be delivered. The pump presets a “default” *Bolus Delivery Time* from this parameter. The user may override this default time.

Below are the steps for setting the *Maximum Bolus rates*:

1. Access the **CUSTOM PROGRAM** menu (see page 8) and choose **SET DEFAULT BOLUS RATE** by pressing its **number** (You may need to press **More** to find it).



2. You now see the **Select Bolus Rate** screen. The options are:
 - Syringe Size x 5 mL/hr.
 - Syringe Size x 10 mL/hr.
 - Syringe Size Max mL/hr.
3. Use the **number** buttons to move the *highlight* to the Bolus rate you wish the pump to use.



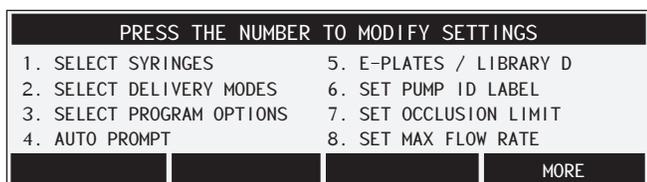
- When ready press the **Enter** button to set the new Bolus rate limit. Or, press **BACK** () to exit without changing the Bolus rate.

Enable / disable program dose display

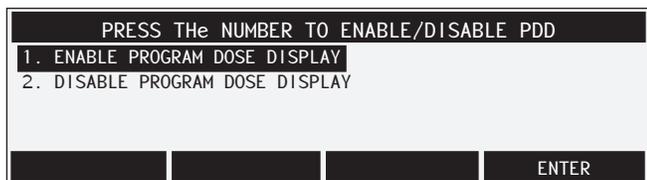
The pump has the option of displaying during infusion the *program volume delivered* or *program dosage delivered*. While running an infusion delivery, the pump stores and displays the program volume delivered. When this option is enabled the pump displays the program dose delivered instead.

Below are the steps for enabling / disabling the program dose or volume display:

- Access the **CUSTOM PROGRAM** menu (see page 8) and choose **PROGRAM DOSE DISPLAY** by pressing its **number** (You may need to press **More** to find it).



- You now see the **ENABLE / DISABLE PDD** screen.



- Use the **number** buttons to put the *highlight* on either **ENABLE** or **DISABLE**.
- When ready press **Enter** to set the new Program Dose Display status. Or press **BACK** () to exit without changing the Program Dose Display status.

Set up & test pump alarms

The *alarms* are the warnings or cautions the pump sounds to let you know something is happening or about to happening. Alarm setup has four major options:

- Alarm Style
- Alarm Silence Time
- Near Empty Alarm Time
- Alarm Loudness

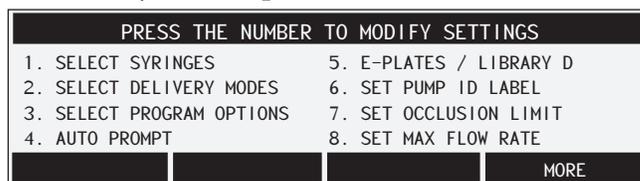
Setting alarm style

The Medfusion™ 3500 infusion pump has two different alarm styles. They are:

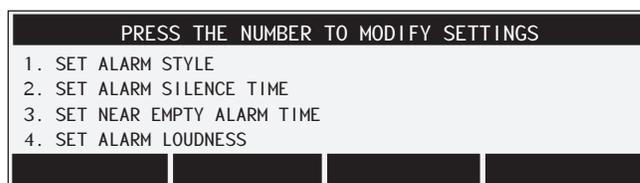
- International Standard Alarms
- Medex Defined Alarms

The pump is shipped with the Medex Defined Alarms enabled. Below are the steps for selecting between these two alarm style settings:

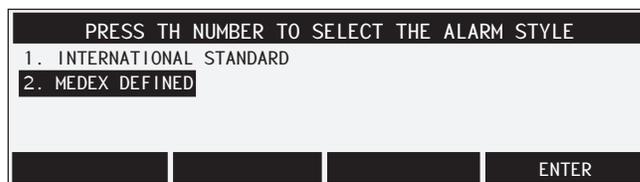
- Access the **CUSTOM PROGRAM** menu (see page 8) and choose **ALARM SETUP** by pressing its **number** (You may need to press **More** to find it).



- You now see the alarm **MODIFY SETTINGS** screen. Find **SET ALARM STYLE** and press its **number** (in this case it is number 1).



- Use the number buttons to put the *highlight* on either **INTERNATIONAL STANDARD** or **MEDEX DEFINED**.



- When ready press the **Enter** button to set the new Alarm Style status. Or, press **BACK** () to exit without changing the Alarm Style status.

Set alarm silence time

The alarm silence time is the interval for which the alarm waits before resounding after someone presses



- The *alarm silence time* has a range from **2 – 60 minutes**.
- The *factory default* setting is **2 minutes**.

Below are the steps for setting between the Alarm Silence Time:

1. Access the **CUSTOM PROGRAM** menu (see page 8) and choose **ALARM SETUP** by pressing its **number** (You may need to press **More** to find it).

PRESS THE NUMBER TO MODIFY SETTINGS	
1. SELECT SYRINGES	5. E-PLATES / LIBRARY D
2. SELECT DELIVERY MODES	6. SET PUMP ID LABEL
3. SELECT PROGRAM OPTIONS	7. SET OCCLUSION LIMIT
4. AUTO PROMPT	8. SET MAX FLOW RATE
MORE	

2. You now see the alarm **MODIFY SETTINGS** screen. Find **SET ALARM SILENCE TIME** and press its **number** (in this case it is number 2).

PRESS THE NUMBER TO MODIFY SETTINGS	
1. SET ALARM STYLE	
2. SET ALARM SILENCE TIME	
3. SET NEAR EMPTY ALARM TIME	
4. SET ALARM LOUDNESS	

3. You now see the **ENTER ALARM SILENCE PERIOD** screen. There is a *2 – 60 minute* range.

ENTER ALARM SILENCE PERIOD – PRESS ENTER TO CONTINUE	
MAX: 60	2 CURRENT SETTING
MIN: 2	2 MINUTES
CLEAR BACKSPACE ENTER	

5. Use the **number** buttons to type the time in minutes you want to alarm to wait before resounding after someone presses .
6. When ready press **Enter** to set the new Alarm Silence Period. Or, press **BACK** () to exit without changing the Alarm Silence Period status.

Set near empty alarm time

The near empty alarm time is the interval before which the syringe is empty and the pump sounds a warning alarm. The pump calculates “near emptiness” based on the size of the syringe divided by the amount of dosage or fluid inside the syringe times the rate of

delivery.

Below are the steps for setting between the Near Empty Alarm Time:

1. Access the **CUSTOM PROGRAM** menu (see page 8) and choose **ALARM SETUP** by pressing its **number** (You may need to press **More** to find it).

PRESS THE NUMBER TO MODIFY SETTINGS	
1. SELECT SYRINGES	5. E-PLATES / LIBRARY D
2. SELECT DELIVERY MODES	6. SET PUMP ID LABEL
3. SELECT PROGRAM OPTIONS	7. SET OCCLUSION LIMIT
4. AUTO PROMPT	8. SET MAX FLOW RATE
MORE	

2. You now see the alarm **MODIFY SETTINGS** screen. Find **SET NEAR EMPTY TIME** and press its **number** (in this case it is number 3).

PRESS THE NUMBER TO MODIFY SETTINGS	
1. SET ALARM STYLE	
2. SET ALARM SILENCE TIME	
3. SET NEAR EMPTY ALARM TIME	
4. SET ALARM LOUDNESS	

3. You now see the **ENTER NEAR EMPTY TIME** screen. There is a *0 – 60 minute* range.

ENTER NEAR EMPTY TIME – PRESS ENTER TO CONTINUE	
MAX: 60	5 CURRENT SETTING
MIN: 0	5 MINUTES
CLEAR BACKSPACE ENTER	

4. Use the **number** buttons to type the time in minutes you want to alarm to sound *before the syringe is empty*. Setting near empty time to zero disables this alarm. In this case, only the empty alarm is enabled.
5. When ready press **Enter** to set the new Near Empty Time status. Or press **BACK** () to exit without changing the Near Empty Time alarm status.

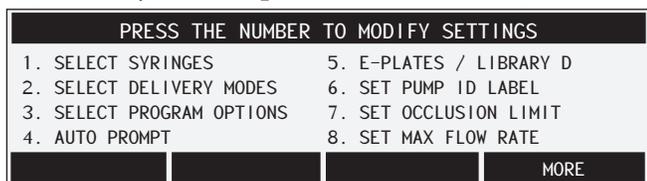
Set alarm loudness

The Medfusion™ 3500 infusion pump has five levels of *alarm loudness* you can choose from. These range from soft to very loud. Set alarm loudness to whatever level seems appropriate for the patient care environment where the pump is used. Test the alarm loudness and select a volume appropriate for your needs.

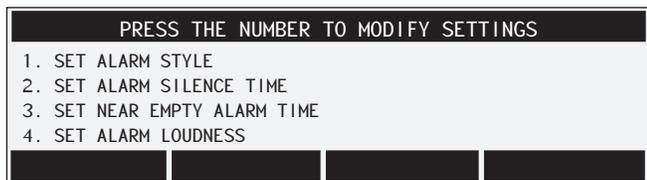
Level	Loudness	Suggested Area of Use
1	Very Soft	ICU, CCU, NICU
2	Soft	Geriatric, Chronically Ill
3	Normal	Normal
4	Loud	Pediatric
5	Very Loud	Emergency Room

Below are the steps for setting the Alarm Loudness:

1. Access the **CUSTOM PROGRAM** menu (see page 8) and choose **ALARM SETUP** by pressing its **number** (You may need to press **More** to find it).



2. You now see the alarm **MODIFY SETTINGS** screen. Find **SET ALARM LOUDNESS** and press its **number** (in this case it is number 4).



3. You now see the **SET ALARM LOUDNESS** screen. There are 5 *levels of loudness* to choose from, **LEVEL 1** being the softest and **LEVEL 5** being the loudest.



4. Use the **number** buttons to put the *highlight* on the loudness level you wish to test or use (see the next column for testing instructions).

5. When ready, press the **Enter** button to set the new Alarm Loudness setting. Or, press **BACK** () to exit without changing the Alarm Loudness status.

Test alarm loudness

If you are unfamiliar with the *Medfusion™ 3500* infusion pump, then it is a good idea to test the sound levels before select one to use. It is very simple to test the alarm loudness level:

Note: You must be at “Step 3” of the preceding list of steps.

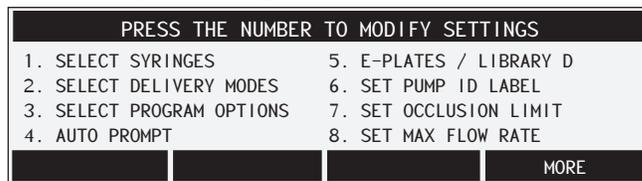
1. Put the *highlight* on the loudness level you wish to test.
2. Press **Test**. The alarm sounds at the selected level.
3. **To end the test**, press .
4. To test the other alarm levels, simply press their corresponding **number** button.
5. Make your alarm level selection by pressing the **Enter** button to set the new Alarm Loudness setting. Or, press **BACK** () to exit without changing the Alarm Loudness status.

Set & test keyclick (beep) loudness

The *keyclick* is the “beeping” sound the pump makes when you press a button. The Medfusion™ 3500 infusion pump has five levels of *keyclick loudness* – ranging from Off to Very Loud. Set loudness to whatever level seems appropriate for the patient care environment where the pump is used.

The steps for setting the Keyclick Loudness are given below:

1. Access the **CUSTOM PROGRAM** menu (see page 8) and choose **ALARM SETUP** by pressing its **number** (You may need to press **More** to find it).



Working with libraries & templates

The Medfusion™ 3500 has 4 libraries that come with 16 templates per library. The pump is shipped with all these templates empty and nameless, so which are used, and what they are named, depends on the pump's custom configuration.

A *library* is here defined as a group or set of templates. A *template* is defined here as a “user defined” stored record of infusion settings which load from memory. It is a computer file where configuration information is stored.

Templates allow delivering standard fluid or medication infusions – without your having to “type” individual dosage values each time you begin an infusion. So they are a means of *automating* the pump setup process. Think of them as a “*shortcut*” you can use for delivering standard infusions. Program them once, and use them whenever needed.

The pumps have *two types* of libraries:

- There is the **E-Plates Library**. This feature is enabled separately within customization. (If the E-Plate library feature is not needed, it may be disabled. Disabling the E-Plate library automatically enables Standard Library D)
- The others are the 3 **Standard Libraries A, B, and C**, (and D if E-Plates have been disabled). They are part of the **SELECT DELIVERY MODES** customization.

The E-Plates Library and Standard Libraries function slightly differently, and may be used differently.

Default & other library settings

The Medfusion™ 3500 infusion pump is shipped with all 16 templates *completely empty* in all 4 Libraries.

- If you save infusion settings to the templates, and then **restore default settings** for Anesthesia, General, or NICU, this does not overwrite your libraries.

These library templates are intended to provide each unit, department, organization, or hospital with a means of automating the setup process. So the templates are left blank when shipped to let everyone preset the libraries to meet their own needs.

What are standard library templates?

The standard libraries are an option available through configuring **SELECT DELIVERY MODES**. Standard libraries templates contain all the settings for running an infusion as a group of preset values.

- When you select & use a library template, the pump recalls all the infusion delivery presets for each level, (e.g., dosage, rate, patient weight).
- However, the pump **does not** automatically proceed to the **BEGIN INFUSION** screen. The user must confirm each setting individually by pressing **Enter**. This means the user has to “step through” and review each setting before accepting it.
- The pump also does not automatically select syringe model and size.
- These standard libraries also allow modifying settings while stepping through preset values.

Enabling / disabling standard library usage

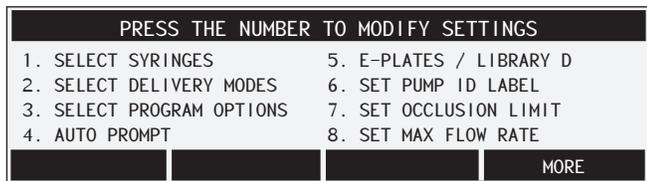
Depending on your pump's configuration, standard libraries *may or may not* be available for immediate use. If you cannot find them as a feature of your pump, then they must be **enabled** through custom configuration. They are part of the **SELECT DELIVERY MODES** customization.

Note: If you have authorization, you may use custom configuration to enable or disable standard libraries. If not, ask the person responsible for custom configuration to make this change for you.

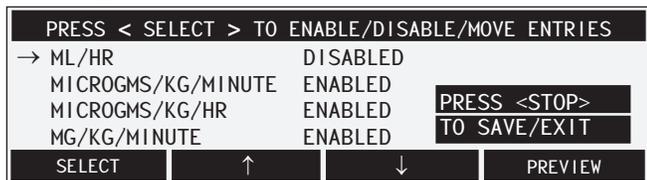
All such standard dosage templates must be set up according to the standards & practices of your hospital, unit, or organization.

Below are the steps for enabling or disabling standard libraries for use with the pump:

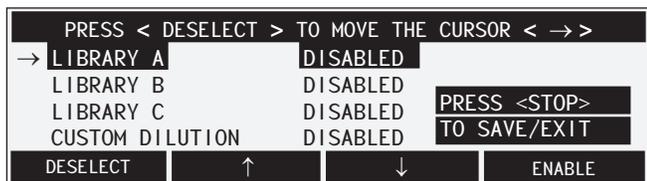
1. Access the **CUSTOM PROGRAM** menu (see page 8) and choose **SELECT DELIVERY MODES** by pressing its **number** (in this case it is number 2).



2. A list of the delivery modes appears onscreen. To the right of list is either **Enabled** or **Disabled**.

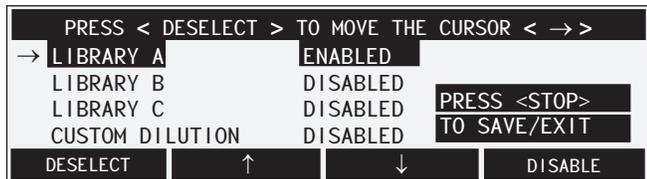


3. At the **ENABLE / DISABLE / MOVE** screen, use the **↑** or **↓** buttons to move the **→** marker to the library you wish to enable, disable or move.
4. Press **Select** to *highlight* the library you wish to enable, disable, or move.



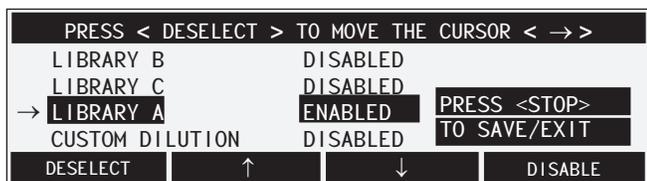
5. **To Enable or Disable a selection:**

Press **Enable** or **Disable** (depending on what you are doing). Note how the screen changes.

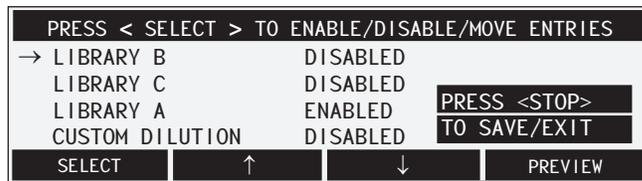


To Move a selection:

Press the **↑** or **↓** buttons to move the library to a new location in the list. Notice how it shifts relative to other items on the list. Place it where you want it to appear on the **SELECT THE MODE** screen.



6. Press **Deselect** to remove the highlight.



7. To enable, disable or move another delivery mode, repeat steps 3-6. If you wish, you may press **Preview** to see how this change will look. Then press **Continue** to return to the **ENABLE/DISABLE/MOVE** screen.
8. Press **STOP** (⏹) to save your changes and exit to the **MODIFY SETTINGS** screen. Or press **BACK** (⏪) to exit to the **SAVE CHANGES YES / NO** screen. Answer **No** to exit without saving changes.



What are E-Plates library templates?

The E-Plates Library contains templates of stored settings, including syringe size, rate of dosage, size of dosage, patient's weight, and so on. ("E-Plates" is an abbreviation for "Electronic Templates"). It is different from a standard library template in the following way:

- The *Standard Library* templates load the settings, but the user must confirm each setting individually by pressing **Enter**.
- The *E-Plates Library* templates do not prompt users for verification at each level. They automatically load all infusion delivery settings including syringe size and model, and pauses the pump at the **BEGIN INFUSION** screen. So all you have to do is verify all the information on the screen is correct and press **START** (▶) (⏪) to begin delivery.

WARNING: Confirm all settings. Before starting ANY delivery, confirm all programmed infusion settings are correct. When using the E-Plates, both the Medfusion™ 3500 automatically apply preset values. **Never use an E-Plate without knowing or reviewing its settings.**

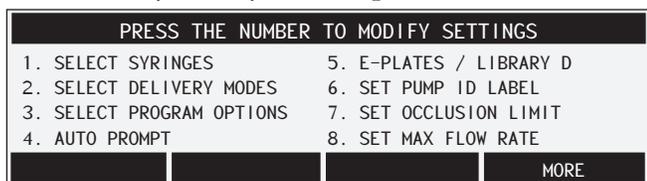
Enabling / disabling E-Plates

Depending on your pump's configuration, the E-Plates Library *may or may not* be readily available. Smiths Medical ships the pumps with E-Plates disabled; and with all its 16 templates empty. If you cannot find it as an option of your pump's operation, then you must **enable** it through custom configuration.

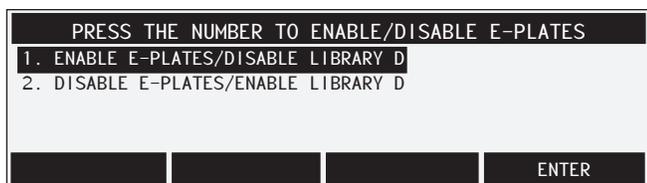
All such standard dosage templates must be set up according to the standards & practices of your hospital, unit, or organization.

Below are the steps for enabling or disabling the E-Plates library for use with the pump:

1. Access the **CUSTOM PROGRAM** menu (see page 8) and choose **E-PLATES FEATURE** by pressing its **number** (you may need to press **More** to find it).



2. You now see the **ENABLE / DISABLE E-PLATES** screen.



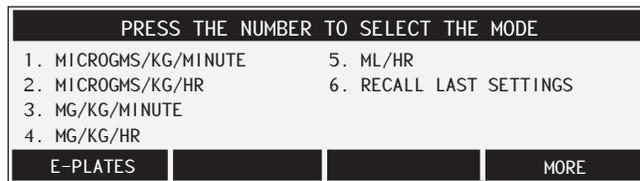
3. Use the **number** buttons to select either enable or disable E-Plates.
4. When ready, press **Enter** to set the new E-Plates Feature status. Or press **BACK** (⏪) to exit without saving changes.

Displaying E-Plates options

Even though you may enable the E-Plates and Standard Libraries, the pump display does not *offer* E-Plates and/or Standard Libraries until you actually store a template inside a library.

When you have enabled E-Plates, and have a saved template in the library, the pump lets you know by changing the **SELECT THE MODE** screen, and other applicable screens, by showing the word “**E-Plates**” on

the **lower left corner** of the screen. See the following illustration:



If you press **E-Plates**, the pump displays the templates in the E-Plates library, and the button is now labeled “**Main Menu**”.



If you press **Main Menu**, you return to the **SELECT THE MODE** screen.

Create & save a library entry (template)

With the Medfusion™ 3500 infusion pump, it is possible to set up a standard infusion, and then save it to a library as a template of preset values.

Creating templates is a configuration function that takes place *outside* configuration through the **SAVE TO LIBRARY** feature.

It is very easy to save a new template to any of the 4 libraries. All you have to do is:

- a) Use **CUSTOM PROGRAM** to enable the **SAVE TO LIBRARY** feature in the **SELECT PROGRAM OPTIONS** menu (see page 18). Exit **CUSTOM PROGRAM**.
- b) Set up ANY infusion delivery you want to save for use on a regular basis. (Be sure to precisely follow the standards & practices of your unit, department, organization, or hospital.)
- c) Then use the **SAVE TO LIBRARY** option to store those settings as a template in your choice of the 4 libraries. Once stored in a library, these templates can be reused any time you need to start a standard infusion delivery.

Disable “Save to Library” before sending pump to workplace

Creating templates is a configuration function that takes place *outside* the **CUSTOM PROGRAM** configuration feature.

- You must have the **SAVE TO LIBRARY** feature *enabled* before you can use it to save a group of presets to a library template. It is enabled through **CUSTOM CONFIGURATION > PROGRAM OPTIONS**.
- But **SAVE TO LIBRARY** is *used* outside of custom configuration – by pressing **Options** from the **BEGIN INFUSION** screen (after programming infusion values).

It is very important to control access to creating, saving and/or modifying all library templates. It is strongly recommended you always *disable* the **SAVE TO LIBRARY** feature as soon as you are finished creating and saving the stored templates. It should be a rare occasion when it is necessary to create a new template, or modify an old one.

If you leave **SAVE TO LIBRARY** enabled when the pump goes to its work site, then *anyone who uses the pump* can change any and all the settings in any and all of the templates stored in the pump. In fact, anyone with physical access to the pump can change these settings. The way to prevent unauthorized changes is to *disable* the feature used for making those changes.

Saving a new template (entry)

The steps for saving a new library template are given below – and presume you have Save To Library enabled:

- Set up any type of infusion you want used as a standard delivery method. Any group of settings can be saved to a template. Progress all the way to the **BEGIN INFUSION** screen. Press **Options** to open the **OPTIONS** menu.

PRESS < START > TO BEGIN INFUSION			
CONC	1.2 MG/ML	PVD	0.000 ML
WEIGHT	50 KG		
DOSE	2.5 MCG/KG/MIN	RATE	6.25 ML/HR
E-PLATES	CHG DOSE	OPTIONS	CLEAR TOTALS

- Use the **number** buttons to select the **SAVE TO LIBRARY** option. (You may have to press **More** until it appears onscreen.)

PRESS THE NUMBER TO SELECT THE OPTION	
1. STANDBY	5. SAVE TO LIBRARY
2. LOADING DOSE	
3. BOLUS DOSE	
4. VOLUME LIMIT	
	MORE

- Use the number buttons to select the Library you want to use save the template to.

PRESS THE NUMBER TO SELECT THE LIBRARY	
1. LIBRARY A	
2. LIBRARY B	
3. LIBRARY C	
4. E-PLATES	

- Use the **number** buttons to select an unused template you want to use. (You may save to either a used or unused template. The new template writes over the old one.)

PRESS THE NUMBER TO SELECT THE LIBRARY ENTRY	
1. URDRUGS - 1	5. UNUSED
2. DOX - RX5	6. UNUSED
3. UNUSED	7. UNUSED
4. UNUSED	8. UNUSED
MAIN MENU	MORE

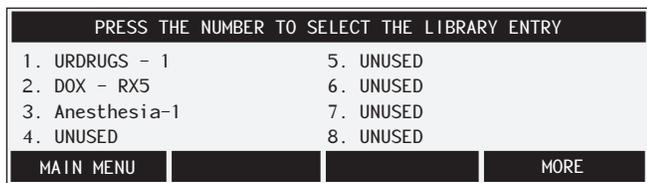
- The **CHOOSE A CHARACTER** screen is where you name the template. Use the ↓ and → buttons to put the highlight on the character or symbol you wish to use, then press **Enter** to place the character onto the screen. Press **Backspace** to make corrections. Repeat until you have named the new template.

USE ARROW KEYS THEN ENTER TO CHOOSE A CHARACTER	
A B C D E F G H I J K	" "
L M N O P Q R S T U V	
W X Y Z / - % SPACE	PRESS < STOP > TO
0 1 2 3 4 5 6 7 8 9	SAVE AND EXIT
↓	→ BACKSPACE ENTER

USE ARROW KEYS THEN ENTER TO CHOOSE A CHARACTER	
A B C D E F G H I J K	"ANESTHESIA-1"
L M N O P Q R S T U V	
W X Y Z / - % SPACE	PRESS < STOP > TO
0 1 2 3 4 5 6 7 8 9	SAVE AND EXIT
↓	→ BACKSPACE ENTER

Naming templates: You can name a template anything you wish. Smiths Medical recommends that you name templates in a way that readily identifies their content and function. There is a 15-character limit to template names. You can use any combination of letters, spaces, symbols and numbers. It is possible to give the same name to two or more templates *within* any library; avoid confusion by not doing this. With E-plates it would be helpful to include syringe size, like “30mL” as part of the library name.

- When finished naming the new template, press  () to save and exit. The new template is now stored permanently in the designated library, and appears on the **SELECT THE LIBRARY** menu.



- If the library is enabled, it appears on the **SELECT THE MODE** screen. (You may have to press the **More** key to find it.) The template you just saved can be found on the **SELECT THE LIBRARY ENTRY** screen.



Reusing templates

When creating and saving groups of presets to templates, you always have the choice of finding an **unused** template, or **reusing** any existing template. The template is simply a file you can fill with preset infusion values. You can always:

- Rename it.
- Clear or Delete it.
- Reuse it

If you reuse a template, the new settings simply overwrite the old settings. To avoid confusion, it is recommended using a different name for the new template.

Libraries must be enabled before you can use them

It is possible to save infusion settings to any of the 16 templates in any of the 4 libraries whether they enabled or disabled. **But the libraries must be enabled before you use them to setup an infusion.**

The Medfusion™ 3500 infusion pump is shipped with all the templates empty in all the libraries – and with all 4 libraries disabled. Before you can use an enabled library, it must have infusion presets stored inside at least one template in the library.

Libraries must follow standards & practices

Whenever you create a template or group of templates of presets within a library, the standard dosages used must always be set up according to the standards & practices of your hospital, unit, or organization – and must ensure correct use of all medications and fluids.

SAVE TO LIBRARY is a configuration setting that should never be available while operating the pump. When saving a new template, you must be especially careful to always verify your settings are correct before creating a new template.

WARNING: Verify settings before using. An **incorrectly set up** library template can cause over-infusion or under-infusion with resulting potential serious injury or death.

Enabling the libraries

The Medfusion™ 3500 infusion pump is shipped with the libraries disabled and their templates empty. Each library must be enabled individually before you can use the presets from a library template.

The steps for enabling libraries are explained in “Enabling / disabling standard libraries” (page 29) and “Enabling / disabling E-Plates” (page 31).

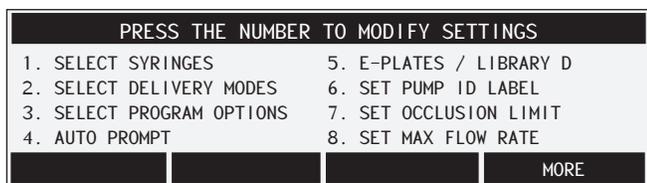
Clear library entry (or template)

The Clear Library Entry (or template) option is a *housekeeping* feature available through **CUSTOM PROGRAM**. Whenever a library template is no longer desired, it is a good idea to delete or *clear* it.

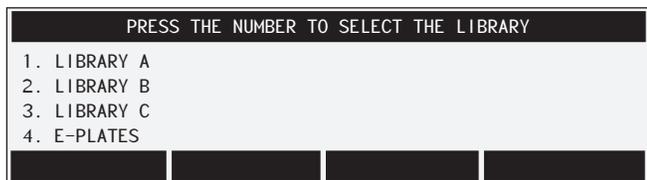
- Clearing a template *deletes* or removes all its settings from storage in pump memory. This prevents its unintentional or unauthorized use for other patients.

The steps for clearing a template are given below:

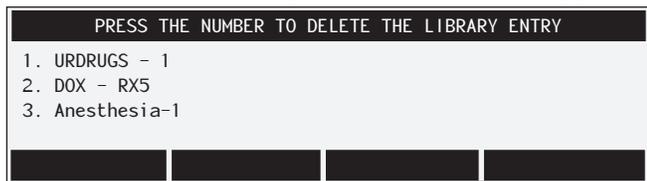
1. Access the **CUSTOM PROGRAM** menu (see page 8) and choose **CLEAR LIBRARY ENTRY** by pressing its **number** (you may need to press **More** to find it).



2. At the **SELECT THE LIBRARY** screen, press the **number** button for the library containing the template you wish to delete.



3. At the **DELETE THE LIBRARY ENTRY** screen, only the list of active templates for the library appear.



IMPORTANT: Be careful here. When you press the number button for deleting the template, there is no verify with “Yes” or “No”. The template simply deletes as soon as you press its number. You do not have any option for *undeleting*. Once the template is deleted, it is *gone*.

4. Press the **number** button for the template you wish to delete. This erases the library template as soon as you press the button.
5. When finished deleting or clearing a library templates, press **BACK** (⏪) to exit.

Clear all libraries

The Clear All Libraries feature is a *housekeeping* option available through **CUSTOM PROGRAM**. The settings of any given library are usually intended for use by a specific unit, department, organization, or hospital. Whenever your entire library contents are no longer desired, it is a good idea to delete or *clear* it.

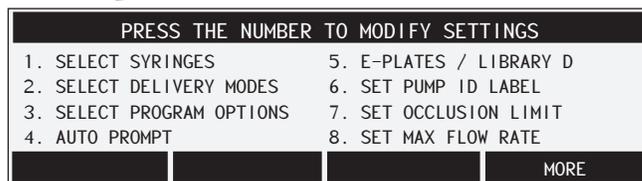
- Clearing ALL libraries *deletes* or removes ALL templates settings stored inside ALL libraries.

IMPORTANT: Never clear ALL libraries unless you want ALL their presets removed permanently from the pump. When you clear all libraries, you are *permanently erasing them* from the pump’s memory.

The steps for deleting all the libraries are given below:

1. Access the **CUSTOM PROGRAM** menu (see page 8) and choose **CLEAR ALL LIBRARIES** by pressing its **number** (you may need to press **More** to find it).

Remember: you are about to clear the contents of ALL templates inside ALL libraries and the deletion is *permanent*.



3. At the **CLEAR ALL LIBRARIES** screen, press **Yes** to erase the contents of all libraries. Press **No** or **BACK** (⏪) to exit without deleting the libraries. In either case, you return to the **MODIFY SETTINGS** screen.



Configuration cloning

This chapter defines what Smiths Medical calls *Configuration Cloning* and describes how you can use it to transfer configuration settings from one pump to another.

What is configuration cloning?

Configuration Cloning is nothing more than the ability to custom configurations one Medfusion™ 3500 infusion pump, and then transfer those settings entirely to another Medfusion™ 3500.

This cloning transfers the complete settings of the teaching pump, including all libraries and templates. The pump that learns, thereafter functions identically with the teaching pump.

This is especially useful when you have many groups of pumps that must be customized for various units and departments within your organization or hospital.

All you have to do is configure one pump from each unit or department, and then clone its settings to all the other pumps of those respective units or departments.

Teaching and learning

Configuration cloning involves a teaching and learning process. One pump is configured through **CUSTOM PROGRAM** to function according to the needs of a specific unit, department, organization, or hospital. This pump is the *Teacher*. Any other Medfusion™ 3500 can be taught the custom settings and/or libraries by this pump.

Preparing for configuration cloning

For the teaching process of Configuration Cloning, you can use any Medfusion™ 3500 pump that has the settings you wish to transfer as long as both pumps are of the same software version. This can be one you customize especially for the cloning. Or one that already has the desired settings. You can either take the teaching pump to the learning pumps, or bring all the learning pumps to the teaching pump. Configuration Cloning can be performed anywhere.

Using the Teach/Learn modes

The Teach Mode is the feature used to transfer configuration settings from one Medfusion™ 3500 infusion pump to another.

Note: The Medfusion™ 3500 infusion pump can hold only one set of custom configuration settings at a time. When you teach the configuration from one pump to another, the *incoming* configuration settings from the *teaching* pump completely overwrite the settings in the *learning* pump.

The steps for using the Teach Mode are given below:

Teacher Pump:

1. Access the **CUSTOM PROGRAM** menu (see page 8) and choose **TEACH MODE** by pressing its **number** (you may need to press **More** to find it).

PRESS THE NUMBER TO MODIFY SETTINGS	
1. SELECT SYRINGES	5. E-PLATES / LIBRARY D
2. SELECT DELIVERY MODES	6. SET PUMP ID LABEL
3. SELECT PROGRAM OPTIONS	7. SET OCCLUSION LIMIT
4. AUTO PROMPT	8. SET MAX FLOW RATE
MORE	

The pump is now ready to clone its settings to the *learning* infusion pump until you press **Exit**.

Learning Pump:

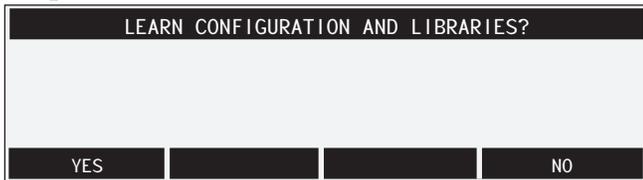
1. Access the **CUSTOM PROGRAM** menu (see page 8) and choose **LEARN MODE** by pressing its **number** (you may need to press **More** to find it).

PRESS THE NUMBER TO MODIFY SETTINGS	
1. SELECT SYRINGES	5. E-PLATES / LIBRARY D
2. SELECT DELIVERY MODES	6. SET PUMP ID LABEL
3. SELECT PROGRAM OPTIONS	7. SET OCCLUSION LIMIT
4. AUTO PROMPT	8. SET MAX FLOW RATE
MORE	

2. Place the pump **back to back** with the Teacher pump so that the *infrared outlets* are aligned facing each other. (Or use the Smiths Medical Cloning Block.)
3. The pump is now ready to receive configuration settings from the *Teaching* infusion pump. Use the **number** buttons to select the configuration mode you wish it to learn.

PRESS THE NUMBER TO SELECT THE MODE
1. LEARN EVERYTHING
2. LEARN CONFIG ONLY
3. LEARN LIBRARIES ONLY

- a) **Learn Everything** – the pump receives ALL custom configuration settings, including Standard and E-Plates Libraries. This takes approximately one minute, depending on the size of the libraries.
 - b) **Learn Config Only** – The pump receives ONLY the custom configuration settings. This takes approximately two seconds.
 - c) **Learn Libraries Only** – The pump receives only the library settings. This takes approximately one minute.
4. At the confirmation screen, you can
- a) Press **Yes** to verify your choice.
 - b) Press **No** to cancel and return to the previous screen.
 - c) Press **BACK** () () to cancel and return to the previous screen.



- 5. The pump is now ready to receive settings from the teaching pump. When complete, turn off the *learning* pump.
- 6. Repeat this process for each learning pump.

Troubleshooting the “Learn Error – Remote Not in Teach Mode” error message

If you start a learning session and there is no pump setup, ready, and aligned for *teaching* its configuration, the *learning* pump displays the following message:

“LEARN ERROR – REMOTE NOT IN TEACH MODE”

You can clear this message by pressing the **Exit** button and then setup a pump for teaching its configuration settings.

But if you do have a pump setup for teaching (using the steps given in this chapter) it may mean you have a problem with either of the pumps. This may be one of the following:

Type of Problem	Remedy
Alignment	Alignment The two pumps may not be <i>back-to-back</i> . Make them so.
Alignment	You may not have <i>properly aligned</i> the infrared data transfer ports. Try readjusting their alignment. If you have the optional Smiths Medical Cloning Block, try using it here.
Incorrect Teaching Setup	The <i>teaching</i> pump may be incorrectly set up. Cancel its teaching setup and try again.
Incorrect Learning Setup	The <i>learning</i> pump may be incorrectly set up. Cancel its learning setup and try again.
Damaged Pump	One or the other of the pumps may be damaged or malfunctioning. You can determine which if you: <ul style="list-style-type: none"> • Select and set up another pump for <i>Learning</i> and try again. If this succeeds, the <i>first</i> learning pump is malfunctioning. Have it inspected by a trained biomedical technician. • Select and set up another pump for <i>Teaching</i> and try again. If this succeeds, the <i>first</i> teaching pump is malfunctioning. Have it inspected by a biomedical technician.

medfusion™

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