Medtronic
MINIMED

PARADIGM®
512

Paradigm® 512

Model MMT-512

User Guide

℞ Only

Medtronic
MiniMed

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**PLEASE READ
THIS ENTIRE USER GUIDE
BEFORE YOU TRY
TO OPERATE YOUR PUMP.**

Table of contents

Chapter 12 Pump specifications 119

Practice lessons and examples

Bolus examples

Meal bolus

Correction bolus

Max bolus

Basal examples

Basal programming

Max basal

Suspend/Resume examples

Bolus Wizard examples

Square Wave bolus examples

Dual Wave bolus examples

Easy bolus examples

Basal patterns examples

Temp Basal examples

Block examples

Glossary

A

Accept - Pressing the **ACT** button to approve the selection or setting.

Active Insulin -Bolus insulin that has been delivered to your body, but has not yet been used.

Alarm -Audible or vibrating (silent) notice that indicates the pump is in Attention mode and immediate attention is required. Alarms are prefixed in the alarm history with the letter A.

Alarm clock- Feature you can set to go off at specified times of the day.

ALARM HISTORY- Screen that displays the last twelve alarms/errors that have occurred on your pump.

Alert-Audible or vibrating (silent) indicator that notifies you the pump needs attention soon or that you should be reminded of something. Insulin delivery continues as programmed.

Attention mode - Operating mode that stops all current insulin delivery. This mode indicates an alarm or condition exists that requires immediate attention.

B

Backlight - Pump screen light. Turns on whenever the down 🔅 button is pressed from the HOME screen, or during an alarm (except LOW BATT).

Basal Rate - The pump setting that provides a continuous infusion of insulin to keep the blood glucose stable between meals and during the night. Basal insulin mimics pancreatic insulin delivery --which meets all the body's non-food related insulin needs.

BASAL REVIEW - Screen that shows a record of your daily basal insulin delivery for the past 14 days.

BG - Blood Glucose

BG reminder - Feature that you can set to remind you to check your blood glucose after a bolus.

BG target - normal blood glucose level

BG unit - blood glucose unit of measure (mg/dl or mmol/L)

Block -Feature that restricts access to all programming except suspend, selftest and the delivery of a bolus with the remote control.

Bolus - A dose of insulin given to cover an expected rise in blood glucose (such as the rise after a meal) or to lower a high blood glucose down to target range.

BOLUS HISTORY - This screen displays the last twenty-four (24) boluses delivered by your pump.

Bolus Wizard - Feature that calculates the bolus amount based on personal information of the pump user.

C

Carb ratio- (Carbohydrate ratio) Used when counting carbohydrates in grams. The amount of carbohydrates covered by one unit of insulin. (Also see exch ratio.)

Carb units -The food entry when using the Bolus Wizard. Entered as (carbohydrate) grams or exchanges.

CH - Carbohydrate

Correction bolus - The amount of insulin needed to return a high blood glucose level back down to target range.

Correction bolus factor - How much 1.0 unit of insulin will lower your blood glucose. This factor is used to calculate a correction bolus amount when your blood sugar is high.

(BG level) − (BG target) = X.

X ÷ (corr bolus factor) = corr bolus amount

D

Daily totals - Shows the total insulin delivered (basal and bolus) in the last 24-hours.
Maximum records: 14 days

DKA - Diabetic Ketoacidosis

Dual Wave bolus - Combination of a Normal bolus that is delivered immediately, then followed by a Square Wave bolus. The Square Wave portion is delivered evenly over a period of time.

Duration - Amount of time it takes to administer a bolus or basal delivery. Also, length of time for an action or condition.

E

Easy bolus - Method of delivery for a Normal bolus that using the Easy Bolus button .

Exch ratio - (Exchange ratio)
Used when counting carbohydrates as exchanges. The amount of insulin required to cover one (1) carbohydrate exchange. (Also see carb ratio.)

Express bolus - Method of delivery for any bolus type using the express bolus button .

F

Fixed prime - Fills the cannula with insulin. This is done after you insert the infusion set into your body and remove the introducer needle.

Food bolus - A dose of insulin given to cover the expected rise in blood glucose that occurs after eating.

G

Gastroparesis -A condition of the digestive system that slows down the emptying of food from the stomach.

H

HbA1c - Glycosylated hemoglobin

HDL - high-density lipoprotein
A complex of lipids and proteins in approximately equal amounts that functions as a transporter of cholesterol in the blood.

I

Idle - The pump is at the HOME screen.

Ins sensitivity - The amount that your blood glucose (BG) level is reduced by one unit of insulin. (Bolus Wizard data)

Insulin type -Type of insulin used: U100 fast acting or U100 regular.

L

LDL - low-density lipoprotein
A complex of lipids and proteins, with greater amounts of lipid than protein, that transports cholesterol in the blood.

Link -To turn on and setup the meter option that allows the pump to receive BG readings from the Paradigm Link meter.

Low resv warning - Programmable warning that notifies you with an alert when either a specified number of units remain in the reservoir or a specified amount of time remains before the reservoir will be empty.

M

Manual bolus - Selectable item available in the BOLUS MENU when Bolus Wizard is active. One method of programming a bolus without Bolus Wizard. (see "Set bolus")

Manual prime - Fills the infusion set tubing with insulin before you insert the set into your body. (This function is available after a rewind)

Max bolus - The maximum amount of bolus insulin that the pump will deliver at one time. (set by the user)

Max basal insulin - The maximum amount of basal insulin that the pump will deliver at one time. (set by the user)

Meter - The Paradigm Link Blood Glucose Monitor Powered by BD Logic Technology (Paradigm Link meter). Your pump can be programmed to receive your BG readings from this meter.

Meter option - Feature that allows the pump to receive BG readings from the Paradigm Link meter.

N

Normal mode - Regular operating mode. No special features are active, no alert or alarm conditions exist. Insulin delivery is normal during this mode.

Normal bolus - An immediate delivery of a specified unit amount of insulin.

Now - The "Normal" portion of a Dual Wave bolus. The now portion delivers immediately and is then followed by the Square portion.

P

Pattern feature - Extended pump feature that allows you to program optional basals (Pattern A, Pattern B) that support activities that are not a part of your day-to-day routine, but are usual in your lifestyle. Such activities could be a sport that you do once a week or a change in your sleep pattern over the weekend.

Pattern, standard - Your normal basal that supports your usual day-to-day activity. When the Patterns feature is off, the pump uses your standard (basal) pattern.

Press - To push and release a button.

Prime - (see fixed prime or manual prime)

R

Resume - Restarts basal delivery after the pump is suspended.

Rewind - The pump drive moves back to its starting position to prepare the pump for a new reservoir.

RF - Radio frequency

S

Scroll - Press the up or down arrow buttons to move through the screen text.

Select - Pressing the up or down arrow buttons to highlight a desired screen item.

Set bolus - Selectable item available in the BOLUS MENU when Bolus Wizard is inactive. One method of programming a bolus without Bolus Wizard. (see "Manual bolus")

Special mode - Operating mode that indicates one or more special functions is active or a condition exists that requires attention.

Square Wave bolus - Immediate bolus delivered evenly over a specified time period (30 minutes to 8 hours).

Square Wave portion - (Sq) The second part of a Dual Wave bolus. The Square Wave portion delivers evenly over a period of time after the NOW portion delivers.

Status screen - Displays the current operations of the pump, including active functions, the most recent basal and bolus deliveries, reservoir information, and battery condition.

Step - Measurement of insulin that you set and use for Easy Bolus delivery.

Suspend - Function that stops all insulin delivery. Any current bolus and/or prime deliveries are canceled. The basal delivery is paused until restarted.

T

Temp - Temporary

Temp basal - (Tmp basal) Temporary one-time basal insulin with a specified amount and duration. Used to support insulin needs for special activities or conditions that are not part of the normal daily routine.

U

uL - Units per Liter

Your personal information

You may need the following information from your healthcare professional before going to your pump start appointment. If you are unsure, contact your healthcare professional or pump trainer for instructions.

NOTE - This information is not for the Bolus Wizard. Refer to chapter 5 for Bolus Wizard settings.

Basal rate

Basal insulin is required to maintain your target glucose values when you are not eating. Your pump can be programmed with up to three (3) basal patterns (standard, pattern A, pattern B) to accommodate your varying insulin needs on different days (example: weekday versus weekend day). Each pattern can have up to 48 basal rates. When you first start pump therapy, you may only have to program one or two basal rates. Get your basal rate settings from your healthcare professional.

Standard

Basal rate number	Start time	Basal rate (units per hour)
#1	midnight	
#2		
#3		
(additional basal rates)		
#4		
#5		
#6		
#7		
#8		

Pattern A

Basal rate number	Start time	Basal rate (units per hour)
#1	midnight	
#2		
#3		
(additional basal rates)		
#4		
#5		
#6		
#7		
#8		

Pattern B

Basal rate number	Start time	Basal rate (units per hour)
#1	midnight	
#2		
#3		
(additional basal rates)		
#4		
#5		
#6		
#7		
#8		

Insulin type

Your pump is sent from the factory with the insulin type set to U100 fast acting. The insulin type can also be set to U100 regular acting.

My insulin type is:	U100 fast acting
	U100 regular acting

Carb ratios (meal bolus info)

Your carb ratios are used to calculate your meal boluses.

If you count grams: this ratio is the number of carb grams covered by one (1) unit of insulin.

If you count exchanges: this ratio is the number of insulin units you need to cover one carb exchange.

When	(grams/u or u/exch)
breakfast	
lunch	
dinner	
snacks	

BG targets

BG targets are the levels that your BG (blood glucose) should be and are required for pump therapy. Keeping your BG within target range is important for living well with diabetes. Your healthcare professional should help you determine these targets.

When	BG Target (mg/dL or mmol/L)
before meals:	
2 hours after meals:	
bedtime:	
before driving:	

Insulin sensitivity

Your insulin sensitivity value indicates how much your blood glucose is reduced by 1 unit of insulin. Your insulin sensitivity values are used to calculate your correction boluses for high BG.

1 unit of insulin will lower my BG:

_____ mg/dL or _____ mmol/L

Introduction

Thank you for choosing Medtronic MiniMed as your partner in helping you gain better control of your diabetes. Whether you are beginning pump therapy for the first time or upgrading from a previous model, we believe that the combination of state-of-the-art technology and the simple, menu-driven programming of the pump will provide many benefits.

Purpose

This user guide is designed to help you to understand pump therapy and the operation of your pump. We strongly recommend that you work closely with your healthcare professional for a safe and complete pump start.

Your pump is for insulin therapy to help you maintain a stable blood glucose target throughout the day. Based on your settings, the pump delivers your custom basal automatically and continuously 24-hours a day. It also provides bolus deliveries to support your immediate insulin needs for food intake and/or high blood glucose. The Bolus Wizard feature can calculate your bolus amount for you based on your personal settings.

Accessories

➡ **Meter:** Your pump can be used with the optional Paradigm Link Blood Glucose Monitor powered by BD Logic Technology. You can program your pump to automatically receive your BG reading from this meter.

➡ **Remote control:** The optional Paradigm remote control can be used with the pump to deliver boluses and suspend the pump from a distant location.

How to wear your pump

There are a different ways to wear your pump. Medtronic MiniMed has accessories that can hide, protect, and add to the convenience of wearing a pump. Refer to the accessories catalog or the website (www.minimed.com) for .

➡ **Holster:** to wear the pump on your belt.

➡ **Pump clip:** to wear the pump underneath your clothing.

➡ **Activity guard:** If you are active in sports, or you are a child, use the guard to protect the pump from disconnecting.

How to use this guide

For step-by-step instructions, refer to the applicable sections in this guide. Refer to the Glossary for definitions of terms and functions. The terms and symbols used in the step-by-step instructions are in the table below.

Term / symbol	Meaning
"Press"	to push and release the button
"Hold"	to push and keep pressure on the button
"Select"	to press ⌂ / ⌂ to highlight a screen item you want to select
"Exit the menus"	Press **ESC** until the HOME screen appears
Pump Buttons	always bold and uppercase; for example, **ESC**, **ACT**
Screen and menu names	always uppercase; for example, MAIN MENU, REWIND screen
Menu selections	always bold; for example, **12-Hour Setup**, **On**, **Off**
flashing (blinking) screen item	you can change the value for that item with the ⌂ / ⌂ buttons
NOTE– and **TIP** –	additional helpful information for the preceding text
CAUTION:	warns of a potential hazard which, if not avoided, may result in minor or moderate injury to the equipment
WARNING:	notifies you of a potential hazard which, if not avoided, could result in death or serious injury. It may also describe potential serious adverse reactions and safety hazards
"Go to the...screen."	when a step instructs you to "Go to" a screen, the path to that screen is shown. For example: Go to the ALARM MENU. **Main > Utilities > Alarm** 1. From the MAIN MENU, select **Utilities** and press **ACT**. 2. In the UTILITIES MENU, select **Alarm** and press **ACT**. 3. The ALARM MENU appears.

Before you begin...

Availability

The pump and accompanying products are available from Medtronic MiniMed and authorized distributors.

Assistance

Medtronic MiniMed provides a 24-hour Product Help Line for assistance. The Help Line is staffed with technicians who are trained in the set-up and operation of the pump and are able to answer pump-related questions. When calling the Help Line or your local Medtronic MiniMed office, please have your pump and serial number available. The phone number for the 24-hour Product Help Line is also on the back of your pump.

Department	Telephone number
24-hour Product Help Line (calls within the United States)	800.646.4633 (800.MiniMed)
24-hour Product Help Line (calls outside the United States)	818.576.5555
Web site	www.minimed.com

Emergency kit

Keep an emergency kit with you at all times to make sure that you always have necessary supplies. Inform a family member, co-worker, and/or friend where this emergency kit is kept. Please refer to chapter 10, "User safety" for more information on pump safety. Your emergency kit should include these items:

- Fast-acting glucose tablets
- Blood glucose monitoring supplies
- Urine ketone monitoring supplies
- Extra Paradigm infusion set and Paradigm reservoir
- Insulin syringe and short-acting insulin (with dosage instructions from your healthcare professional)
- Paradigm Quick Reference Card
- Dressing and adhesive
- Glucagon Emergency Kit
- Extra AAA Alkaline batteries (Energizer brand is recommended)

Reservoir and infusion sets

The Medtronic MiniMed Paradigm infusion system includes the pump, reservoirs and infusion sets. The pump is intended for use with a Paradigm reservoir. Medtronic MiniMed provides a variety of Paradigm infusion sets to fit your needs. Installation instructions for Paradigm reservoir and infusion sets are provided in chapter 4.

> **WARNING:** **For your protection the pump has undergone extensive testing to confirm appropriate operation when used with Paradigm reservoirs and Paradigm infusion sets manufactured or distributed by Medtronic MiniMed. We recommend using Medtronic MiniMed infusion sets and reservoirs as we cannot guarantee appropriate operation if the pump is used with reservoirs or infusion sets offered by third-parties and therefore we are not responsible for any injury or malfunctioning of the pump that may occur in association with such use.**

To order supplies call
800-646-4633 (1-800-MiniMed)
818-576-5555 (outside U.S.)
www.minimed.com

Practice, practice, practice...

Before you begin pump therapy, it is important that you become familiar with your pump.

Do

➡ Read Book 1, "Introduction to Pump Therapy"
➡ Watch the instructional video
➡ Read this book
➡ Complete the practice exercises in this book (Refer to the table of contents for a list of practice exercises.)
➡ Explore and navigate the pump menus
➡ Practice programming a bolus
➡ Practice programming a basal rate
➡ Practice using the Medtronic MiniMed Pump school online at http://pumpschool.minimed.com

Do NOT

➡ DO NOT install a reservoir into the pump while you are practicing
➡ DO NOT, under any circumstances, begin insulin therapy without guidance from your healthcare professional

Your pump

> **CAUTION:** Never use sharp objects to press the buttons on your Paradigm pump as this can damage the buttons or compromise the watertight seal of the pump. Some examples of sharp objects that may damage your keypad are fingernail files, pens or pencils, paperclips, knives, scissors, and keys.

Take a look at your pump. The reservoir window allows you to view the insulin in the reservoir. The reservoir with the tubing connector attached, is inserted into the reservoir compartment of the pump.
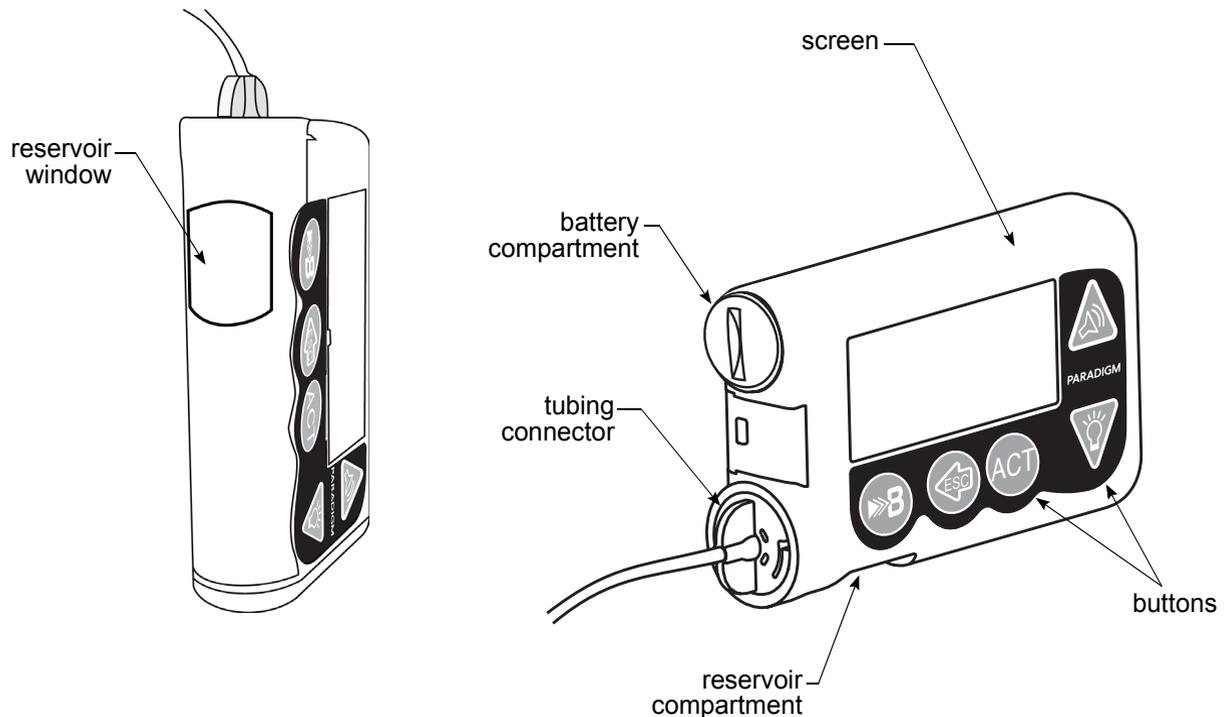
reservoir window

screen

battery compartment

tubing connector

reservoir compartment

buttons

Install battery

Medtronic MiniMed designed the pump to only accept a NEW battery. As a safety measure, if you install a battery that does not have full power, the "failed batt test" alarm will sound. The pump uses one AAA alkaline battery.

1. Use the edge of a quarter to remove the battery cap. Turn the cap in a counter-clockwise direction.

2. Put the battery in the pump with the negative end [(-) symbol] going in first. Check the label on the back of the pump to make sure the battery is inserted correctly.

    NOTE - Do not use batteries that have been in cold storage (i.e., in the refrigerator or your car in the winter).

3. Place the battery cap on the pump so that the slot is aligned in the orientation shown here:

Align the cap slot horizontally with the pump.

4. Turn the battery cap clockwise 4 half-turns so the slot is aligned horizontally with the pump as shown here: Do NOT apply force when you turn the cap.

one half-turn
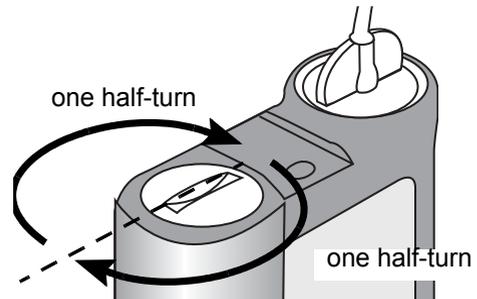
one half-turn

CAUTION: Do NOT over-tighten the battery cap.
          You should not turn the cap more than four
          (4) half-turns. If you over-tighten the cap
          you may not be able to remove it, and you
          can damage your pump.

5. While the pump turns on, it will show various screens until the HOME screen appears.

MiniMed	⊙ ⊙ ⊙ MiniMed ⊙ ⊙ ⊙	MiniMed	MiniMed
7		**Ver 1.2A**	
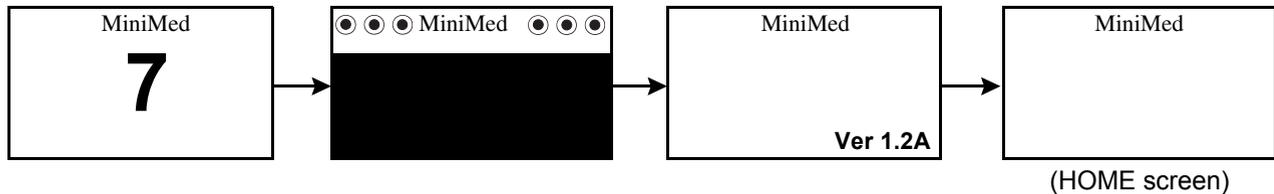
(HOME screen)

If the HOME screen does not appear, do these steps:

    a. Check that the battery is inserted correctly. If the battery has been installed backwards, remove the battery and install a NEW battery.

    b. If your pump still does not turn on or you get a FAILED BATT TEST alarm, remove and replace the battery with a new one.

    c. If the pump is still not on, call the Medtronic MiniMed 24-hour Product Help Line.

6. Check to make sure the time and date are correct. If this is the first battery installed, or if more than 5 minutes have passed since you removed the battery, you must program the time and date. Refer to the section, "Setting the time and date" in chapter 3 for programming instructions.

> *NOTE* - *If you do not program and verify the time and date, the CHECK SETTINGS alarm will occur as a reminder to check your time and date.*

7. Press **ESC** to view the STATUS screen, making sure no alarms are active. If an alarm is active, follow the instructions on the screen.

Pump buttons

The buttons on the pump are used to navigate through the menus and screens, and to program the features of the pump.

UP button

(From the HOME screen, this is the EASY BOLUS button.)

DOWN button

ACT button

EXPRESS BOLUS button

ESC button
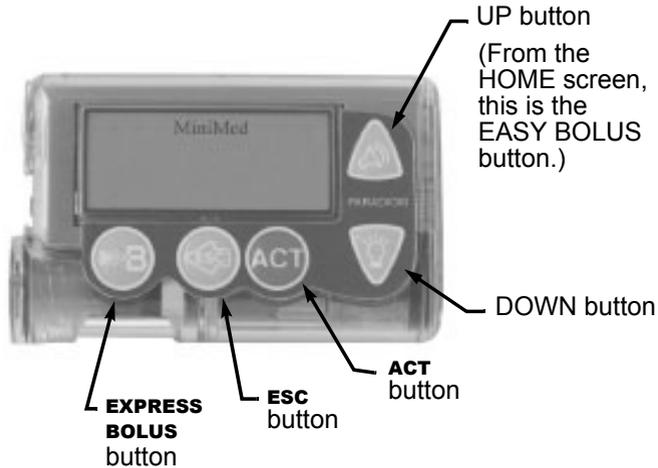
From the HOME screen...

(Easy Bolus button)
Shortcut to set and deliver an Easy Bolus.

Turns the backlight on/off.

ACT Opens the MAIN MENU.

(express bolus button)
Short-cut to the BOLUS MENU to setup any bolus type.

Opens the STATUS screen.

From the menus and programming screens...

Increases / decreases value of a flashing item.

Scrolls up and down the items in a list.

ACT Accepts a selected menu item or activates a selected setting.

Returns the screen to the previous screen.
Backs out of an unintentional menu selection if the **ACT** button has not been pressed yet.

The pump screen

The screen shows five lines of text at one time. The first is the operating mode. The second is the current open menu or function. The last three lines show either information or text that you can select for the current function.

NOTE - *The screen text in the examples used in this guide might not exactly match the text on your pump screen. Please follow your pump screen instructions. If you have any questions, call the Medtronic MiniMed 24-hour Product Help Line.*

Is my pump on?

When the pump is on, the word "MiniMed" always appears across the top of the screen. If "MiniMed" does not appear, the pump is not operating.

MiniMed

indicates
the pump is
operating
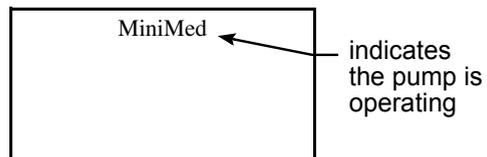
Scroll bar

If there is more text than the screen can show, a scroll bar appears in the right side of the screen. Press to view any additional text.

MiniMed

scroll bar
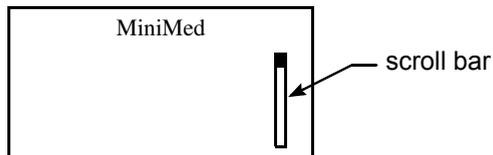
Screen backlight

When you press from the HOME screen, the light on the screen turns on or off. During programming, the light will stay on while you are pressing any of the pump buttons. It will turn off automatically 30 seconds after the last button is pressed.

To conserve your battery, the backlight will turn off automatically while the pump is vibrating. After the vibration is finished, the light will turn back on.

Beep/vibrate

Your pump will beep or vibrate to indicate activity. Refer to the section, "Setting your alert type" in chapter 8 for setup instructions.

HOME screen

The HOME screen serves as the starting point to access the programming screens. When no buttons are pressed for about 30 seconds, the pump returns to this screen.

When you press **ACT** from the HOME screen, the MAIN MENU will appear.

in the HOME screen, the area below "MiniMed" is blank.

| MiniMed | ACT → | MiniMed
MAIN MENU
Bolus
Suspend
Basal |
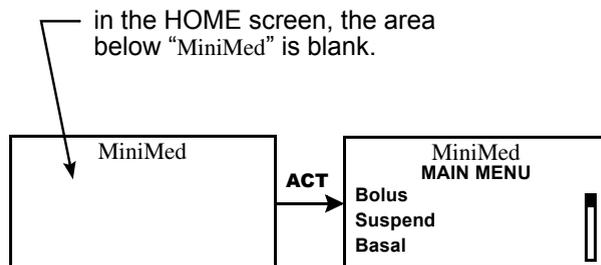
Operating modes

The screen lets you know when a special feature is active or if there is a condition that needs your attention. The active features and pump status will determine the operating mode. The screens for the three modes are shown below.

Normal – mode for standard pump operations for normal basal and bolus delivery. No special features are active (i.e., basal patterns, temp basal, etc.). No alarms and no alerts exist.

MiniMed

Normal Mode
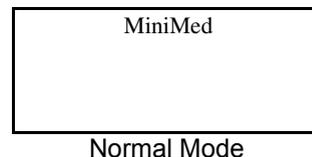
Special - indicates a special feature is active or an alert condition(s) exists. Special mode does not restrict any of the pump functions. When the pump is in Special mode, open circles appear across the top of the screen and it will beep/vibrate periodically to remind you of the condition. The conditions and features that will put the pump in Special mode are:

O O O MiniMed O O O

Special Mode

➡ Low Reservoir condition

➡ Low Battery condition

➡ Block feature is on

➡ Dual or Square Wave bolus delivery

➡ Basal pattern A or B is active

➡ Temporary basal delivery

Attention - indicates insulin delivery has stopped. Either an alarm is active or an alarm condition exists that needs immediate attention for insulin delivery to resume. Solid circles appear across the top of the screen and the pump will beep periodically until the condition is cleared. The screen will show text describing the condition that put the pump in Attention mode. For example, if the reservoir is empty, "Empty Reservoir" will appear on the screen.

◉ ◉ ◉ MiniMed ◉ ◉ ◉
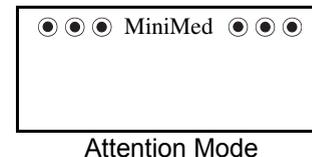
Attention Mode

When the pump is in Attention mode, it will beep/vibrate periodically to remind you of the condition. The beep/vibrate frequency varies depending on the condition that caused the alarm. Refer to the section, "Alarm conditions" in chapter 9 for the conditions that will trigger the Attention mode.

When the pump is in "Attention mode," all insulin deliveries are stopped.

Menus

The MAIN MENU is the highest level menu. There are submenus, functions, status and programming screens in the lower menu levels. The menus are described in the following paragraphs. A diagram of the menu structure is at the back of this user guide.

TIP - If a screen item is flashing (blinking), during programming, press ▽ / △ to change the value.

MAIN MENU - Highest menu level in the menu system. When you press **ACT** from the HOME screen, the MAIN MENU will appear.

BOLUS MENU - Contains the settings and function for bolus deliveries. The ⊛ button allows direct access to the BOLUS MENU without having to navigate through the menus.

SUSPEND - Stops all current insulin deliveries (basal, bolus and fixed prime). Refer to section, "Stopping your pump" in chapter 3 for more information.

BASAL MENU - Contains the functions to setup and deliver your basal. Refer to the section, "Basal" in chapter 3 for more information.

PRIME MENU - Contains the functions required to change your reservoir and fill the infusion set with insulin. Refer to the section, "Changing your infusion set" in chapter 4 for more information.

UTILITIES MENU - Contains features for your safety and convenience. Refer to chapter 8, "Utilities" for more information.

STATUS screen

The STATUS screen shows information about what your pump is doing. The information that shows on the STATUS screen depends on the current activities and conditions of your pump. The screen includes information about:

- ➡ recent insulin deliveries (basal and bolus)
- ➡ reservoir status
- ➡ time and date
- ➡ special features that are turned on
- ➡ battery status
- ➡ insulin type

Refer to chapter 12, "Specifications" for a complete list of the information that is available is in the STATUS screen.

- ➡ To open the STATUS screen.................................... Press **ESC** until the STATUS screen appears.
- ➡ To view more text on the STATUS screen........ Press 💡 / 🔔 to scroll and view all of the information.
- ➡ To exit the STATUS screen .... Press **ESC** until the STATUS screen disappears.

*NOTE - Only check your pump status (press **ESC**) when you are not programming your pump. If you press **ESC** during programming, you will cancel the settings you are trying to enter.*
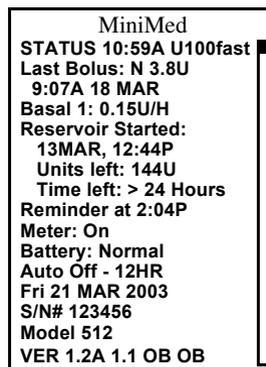
```
         MiniMed
STATUS 10:59A U100fast ▪
Last Bolus: N 3.8U
  9:07A 18 MAR
Basal 1: 0.15U/H
Reservoir Started:
  13MAR, 12:44P
  Units left: 144U
  Time left: > 24 Hours
Reminder at 2:04P
Meter: On
Battery: Normal
Auto Off - 12HR
Fri 21 MAR 2003
S/N# 123456
Model 512
VER 1.2A 1.1 OB OB
```

Sample
STATUS screen

Alert conditions

Your pump has a sophisticated network of safety checks and systems. If it detects an unusual condition that requires your immediate attention, it will beep or vibrate periodically to alert you. The pump will go into Special mode (open circles will display), and the backlight will illuminate. Additionally, the alert message will appear on the screen.

➤ **Why are alerts important?**

Your pump monitors activities and will alert you if a Special mode is active. Some alerts are a normal part of pump therapy, such as an active temporary basal. There are alerts that indicate a condition that is outside normal pump activity. For example, your pump notifies you with an alert when you need to replace the reservoir (LOW RESERVOIR) or replace your pump battery (LOW BATTERY).

What to do....

When your pump beeps or vibrates notifying you that an alert condition exists:

1. Read and follow the instructions on the screen. Press **ESC**, **ACT** to silence an alert.

2. Check the status screen to determine what caused the alert.

3. If the condition is due to a low battery, replace the battery.

4. If the condition is due to a low reservoir, monitor the reservoir volume frequently and change the reservoir when appropriate. Make sure you have a new reservoir, infusion set and vial of insulin with you.

Low reservoir alert

You can program the pump to sound an alert when either a specified number of units remains or a specified amount of time remains before the reservoir will be empty.

Low battery alert

If you get this alert, DO NOT go to sleep without replacing the battery. The backlight and the remote and Paradigm Link meter functions are disabled during a LOW BATTERY condition. If the alert type is set to "vibrate," the pump will change to the audio alert "beep-medium." Clear this alert before you replace your battery.

Alerts for special features

Some features put the pump in Special mode, letting you know that an extended feature is active. When the feature is no longer active, the pump will return to Normal mode. Your pump will alert you (with open circles) if any of these extended features are active:

```
┌─────────────────────┐
│ ○○○ MiniMed ○○○      │
│                     │
│                     │
└─────────────────────┘
```
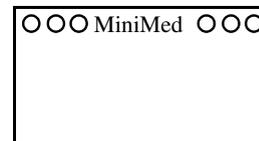
- ➡ Dual Wave or Square Wave bolus delivery
- ➡ Pattern A or B is active
- ➡ Temp basal delivery
- ➡ Block feature is on

If you remove your pump...

Pump settings

You may have an occasion when you need or want to remove your pump. If you have to remove and store your pump, it is recommended that you store it with the battery in place. Keep a record of your current basal rates. To preserve battery life, reset the basal rates to 0 (zero), turn off the RF options (meter, remote), and set Auto-off to dashes or zeroes.

NOTE - *Your pump keeps a record of the basal and bolus insulin it delivers. Setting your basal to 0.0 while you are disconnected ensures the insulin delivery records in your pump are accurate.*

Insulin

Remember, your body still needs insulin while your pump is removed.

You can remove your pump for up to one (1) hour without taking insulin. If you remove your pump for more than an hour, you will have to use another way to take your insulin, such as injections of short-acting insulin, or reconnecting your pump to take boluses. Take the injection or bolus approximately every four (4) hours. Calculate the amount of insulin to take based on the total of your basal insulin in four (4) hours. Include the amount you need for meal and correction boluses. If you will have your pump off for several days, you will need to return to a multiple injection regimen. It is important that you consult with your healthcare professional to determine an alternate method of receiving your insulin.

Setting the time and date

Setting the correct time and date in your pump is necessary for accurate basal insulin delivery and allows you to keep an accurate record of your insulin delivery and other pump functions. You can select a 12-hour or 24-hour clock. You must reset the time and date if you receive a CHECK SETTINGS alarm or you clear your pump (Clear Pump function).

1. Go to the TIME/DATE SETUP screen.

   Main > Utilities > Time/Date

2. Select **12-Hour Setup** or **24-Hour Setup** and press **ACT**.

3. Press **ACT** again to change the settings.

4. Change each of the settings as follows:

Hour	Minutes	Year	Month	Day
MiniMed **SET HOUR** **12:00A**	MiniMed **SET MINUTES** **9:00A**	MiniMed **SET YEAR** **2003**	MiniMed **SET MONTH** **01**	MiniMed **SET DAY** **01**
Change the hour. Press **ACT**. For 12-hour setups, press ▽ / △ until the correct **A** (am) or **P** (pm) appears.	Change the minutes. Press **ACT**.	Change the year. Press **ACT**.	Change the month. Press **ACT**.	Change the day. Press **ACT**.

5. The TIME SET AT screen will show the settings that you programmed. Press **ACT** and exit the menus.

Your time/date settings are complete.

```
        MiniMed
   TIME SET AT
       8:33 AM
                  26FEB2003
```

> **After a "clear pump" function only:**
> The TIME DATE CORRECT? screen will appear after you set the DAY. Select **Yes** to confirm the settings and press **ACT**. Your time/date settings are complete. You must now rewind your pump as described in the section, "Rewinding your pump" in chapter 4.

BG reminder

When you deliver a bolus you may want to check your BG afterwards. The BG reminder is an optional feature that beeps or vibrates to remind you to check your blood glucose after a bolus. Your pump is set at the factory with this feature turned off. If the BG reminder is on, during bolus programming your pump will ask for the amount of time you want to be reminded after your bolus delivers. This time can be from 30 minutes to 5 hours, or NONE. If you do not want to use the BG Reminder at all, set the option to **off**.

1. Go to the BG REMINDER SETUP screen.

   Main > Bolus > BG Reminder

```
        MiniMed
   BG REMINDER SETUP
   Off
   On
```

2. Select **On** and press **ACT**. The BG reminder is now enabled. Exit the menus.

Now, the next time you program a bolus, your pump will ask you for the amount of time after your bolus when you want to be reminded to check your BG.

```
        MiniMed
   BG REMINDER
       2:00
```
(flashing)

*NOTE - If you press **ESC** when the BG Reminder screen appears, your pump will begin delivering the bolus without setting a reminder. If you program another bolus with a BG reminder before a previously scheduled BG reminder goes off, the previous BG reminder will be canceled.*

```
        MiniMed
   12:40P CHECK
            BG
   This is a reminder
   to test your BG
   ESC, ACT to clear
```
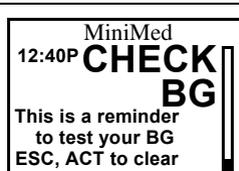
When the BG reminder goes off, your pump will beep or vibrate and the message "CHECK BG" will appear on the screen. Your pump will beep or vibrate periodically until it is cleared (**ESC**, **ACT**).

```
        MiniMed
   STATUS 2:53P U100fast
   BG Reminder in 0:18h
   Battery: Normal
   Tues 08 APR 2003
```
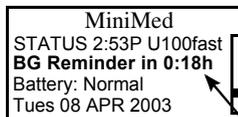
When you set a BG reminder after a bolus, the STATUS screen will show the amount of time remaining before the reminder will go off.
Here, the STATUS screen indicates BG reminder will go off in 18 minutes.

Bolus

There are three bolus types: Normal, Square Wave, and Dual Wave. This section gives instructions for a Normal bolus using the express bolus button and navigating through the menus. (For information about Square Wave and Dual Wave boluses, refer to chapter 6, "Optimizing pump therapy.")

The Normal bolus delivers an immediate food or correction bolus. It can be delivered at any time except during another Normal bolus. During a Normal bolus, most pump features are disabled until after all the bolus has been delivered. The suspend function and the STATUS screen, however, are always available.

Normal bolus

Normal bolus can be used to cover the carbohydrate in a meal or snack and/or to correct a blood glucose that is higher than the target that was chosen for you.

The following instructions are for a Normal bolus without the Bolus Wizard.

from the menu, or	using the EXPRESS BOLUS button
1. Go to the BOLUS MENU. **Main > Bolus** Select **Set Bolus** and press **ACT**. Go to step **2**. *Screen:* MiniMed **BOLUS MENU** — Set Bolus, Bolus History, Bolus Wizard Setup, Max Bolus, Dual/Square Bolus, Easy Bolus, BG Reminder	Press ⏩B on your pump. Go to step **2**.

2. **If the SET BOLUS screen appears:** (Dual/Square Wave bolus is off) Go to step **3**.	*Screen:* MiniMed SET BOLUS **0.0U**	**If the BOLUS TYPE screen appears:** (Dual/Square Wave bolus is on) Select **Normal Bolus** and press **ACT**. Go to step **3**.	*Screen:* MiniMed **BOLUS TYPE** — Normal, Square Wave Bolus, Dual Wave Bolus
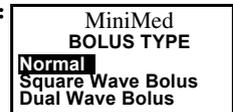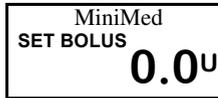
3. Enter your bolus amount and press **ACT**.

Screen: MiniMed SET BOLUS* **0.0U**
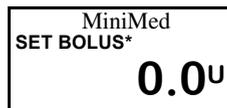
* "SET NORMAL BOLUS" will show if Dual/Square Wave is on.

→ 💡/🔔 → *Screen:* MiniMed SET BOLUS* **2.5U**

ACT

4. Press **ACT** to accept and deliver the bolus. The Normal bolus will start. As the bolus delivers, the amount shown on the screen will increase until the entire bolus has been delivered.

Screen: MiniMed BOLUS DELIVERY 11:53A NORMAL **0.1U** → *Screen:* MiniMed BOLUS DELIVERY 11:53A NORMAL **2.5U**

NOTE - The pump will beep/vibrate at the start of the bolus. When the bolus is finished, the pump will beep/vibrate again and the HOME screen will appear.

MiniMed

Example #1
Normal meal bolus using the exchange system

Normal bolus can be used to cover the carbohydrate in a meal or snack and to correct a blood glucose that is higher than the target that was chosen for you.

Fred has been taught that he needs to take 1 unit of insulin for every carbohydrate exchange that he eats (every milk, every starch or every fruit). For lunch today he will eat:

Turkey sandwich with two slices of bread	**2** starches
1 small apple	**1** fruit
1 cup of non-fat milk	**1** milk
Total carbohydrate exchanges =	**4**

Fred's lunch has a total of 4 carbohydrate exchanges so he will take a meal bolus of 4 units for his lunch.

Bolus practice:

Going through the menus, program a 2.0 unit Normal bolus now.

Check here if you were able to program it. ☐

Using the express bolus button (⏩B), program a 2.0 unit Normal bolus now.

Check here if you were able to program it. ☐

Normal meal bolus practice using exchanges:
Choose a meal you might eat and fill in the blanks.

Food: _____   exchange: _____

_____   exchange: _____

_____   exchange: _____

total exchanges: _____

You will take _____ units of insulin for each exchange. Your total bolus is _____ for this meal.

Example #2:
Normal meal bolus using carbohydrate counting

Lydia has been taught that she needs to take 1 unit of insulin for every 10 grams of carbohydrate. This is her insulin to carbohydrate ratio. For dinner she will have:

4 oz. broiled chicken	**0** grams
2/3 cup of rice	**30** grams
½ cup cooked broccoli	**5** grams
1 oz. Dinner roll	**15** grams
1 tsp Margarine	**0** grams
total grams of carbohydrates =	**50** grams

Lydia's dinner totals 50 grams of carbohydrate. Her insulin to carbohydrate ratio is 1 unit: 10 grams. She will take a meal bolus of 5 units for her dinner. She determined this by dividing 50 (total grams of carbohydrate) by 10 (insulin to carbohydrate ratio).

Normal meal bolus practice using carbohydrate counting:
Choose a meal you might eat and fill in the blanks.

Food: _____   grams of carbohydrate: _____

_____   grams of carbohydrate: _____

_____   grams of carbohydrate: _____

total grams of carbohydrate: _____

Your insulin to carbohydrate ratio: 1 unit of insulin for _____ grams carbohydrate.

Divide your total carbohydrates by your insulin to carbohydrate ratio and take ____ units of insulin for your meal.

Example #3:
Meal bolus, correction bolus and insulin sensitivity

3a.

Jason is ready to eat his breakfast. He has calculated that he will need 4.0 units for his food.

He tests his blood glucose and finds that it is 200 mg/dl (11 mmol/L). Jason knows that his blood glucose level is above his pre-meal blood glucose target and will need additional insulin before he eats.

Jason's healthcare professional has determined the following for him:

pre-meal target BG: 110 mg/dL (6.1 mmol/L)
*Insulin sensitivity: 30 mg/dL (1.7 mmol/L)

3b.

Jason determines that he will need a correction bolus of 3.0 units insulin to lower his elevated blood glucose. The 3.0 correction bolus will lower his current BG of 200 mg/dL (11 mmol/L) to his pre-meal target of 110 mg/dL (6.1 mmol/L).

elevated blood glucose: 200 - 110 = 90 mg/dL (11 - 6.1 = **5 mmol/L**)
correction bolus: 90 / 30 (insulin sensitivity) = **3.0 units**

(He will add this 3.0 correction bolus to the 4.0 units of insulin that he will need for his meal bolus.
Jason will take a total bolus of 7.0 units.)

---

* Insulin sensitivity should equal the amount (in mg/dL or mmol/L) that blood glucose will be lowered after taking 1 unit of insulin. To determine insulin sensitivity, divide 1500 by **T**otal **D**aily **D**ose (**TDD****) of Insulin . The answer is your "Correction Factor" (1500 Rule). As always, consult with your healthcare professional for guidance.

** TDD = Total amount of basal and bolus insulin delivered in a 24-hour day.

Practice: Meal bolus

You have determined your meal bolus as: _____ units.

Your pre-meal target blood glucose range is: _____ to _____ (average is _____).

Your current blood glucose level is: _____ .

Your correction factor is: 1 unit of insulin will drop your BG _____ .

You will take _____ unit(s) of insulin to correct your high BG level.

Your total bolus (meal bolus plus correct bolus is _____ .

Review your bolus deliveries

You can view a list of your bolus deliveries in the BOLUS HISTORY screen. This screen shows a list of the dates, times, units, and types for your last 24 boluses. This feature is helpful for record keeping or to check if you bolused for your last meal.

If a bolus was stopped before delivery was complete, the BOLUS HISTORY screen will show only the amount actually delivered. Refer to the next section, "Bolus details" for instructions about viewing bolus details.

Do the following steps to view the BOLUS HISTORY screen:

1. Go to the BOLUS HISTORY screen and scroll through the bolus deliveries.

    Main > Bolus > Bolus History

    If you used Bolus Wizard to deliver any of these boluses, the screen shows the carbohydrate/food (CH) and BG values that Bolus Wizard used to calculate the boluses.

2. Refer to the instructions in the next section, "Bolus details" to see the details for any of these boluses.

(without Bolus Wizard)

```
       MiniMed
  BOLUS HISTORY
  Last 12:48P 0.7N
  05SEP  01:05P  0.2N
  05SEP  06:30P  4.8S
```

date   time   amount/type

N = Normal
S = Square Wave
D = Dual Wave

(with Bolus Wizard)

```
       MiniMed
  BOLUS HISTORY
  Last 12:48P 0.7N
    CH: 13  BG: 150
  05SEP  01:05P  0.2N
```

carb value   BG value