

Thermo Scientific Versette™ ControlMate® Software

Brief User Manual

Rev. 1.0, Cat. No. N14917



Copyright

© 2013 Thermo Fisher Scientific Inc. All rights reserved. InstallShield is a trademark of Flexera Software LLC. Microsoft and Windows are trademarks of Microsoft Corporation in the United States and other countries. JavaScript is a trademark of Oracle Corporation. All (other) trademarks are the property of Thermo Fisher Scientific Inc. and its subsidiaries.

Reproduction of the accompanying user documentation in whole or in part is prohibited.

Patents

Versette has national and international patents pending.

Disclaimer

Thermo Fisher Scientific reserves the right to change its products and services at any time to incorporate technological developments. This manual is subject to change without prior notice as part of continuous product development. Although this manual has been prepared with every precaution to ensure accuracy, Thermo Fisher Scientific assumes no liability for any errors or omissions, nor for any damages resulting from the application or use of this information. This manual supersedes all previous editions.

No liability for consequential damages

Thermo Fisher Scientific shall not be liable for any indirect or consequential damages whatsoever arising out of the use or inability to use this product.

Power failure

The system requires uninterrupted power supply in order to operate correctly. Thermo Fisher Scientific has no responsibility whatsoever for system malfunctions arising from power failures.

Warranty

The Thermo Scientific Versette products are fully guaranteed against defective parts and materials, including defects caused by poor workmanship for a period of one year from the date of delivery.

Thermo Fisher Scientific will repair or replace defective parts or materials during the term of warranty at no extra charge for materials and labor provided that the products were used and maintained in accordance with instructions from Thermo Fisher Scientific. The warranty is invalid if products have been misused or abused.

For the warranty to be effective, the product must have been purchased either directly from Thermo Fisher Scientific or from an authorized Thermo Fisher Scientific distributor. The guarantee is not transferable to a third party without prior written approval from Thermo Fisher Scientific.

This guarantee is subject to the following exclusions:

- Any defects caused by normal wear and tear.
- Defects caused by fire, lightning, flood, earthquake, explosion, sabotage, war, riot or any other occurrence of the character listed above.
- Refurbished products that are subject to different warranty conditions.

THIS WARRANTY IS IN LIEU OF ALL OTHER EXPRESSED OR IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. The seller is not liable for any loss or damage arising out of or in connection with the use of the product or other indirect damages.

This translation corresponds to the document *Thermo Scientific Versette ControlMate 1.2.0 User Manual*, Cat. No. D09888, Rev. 1.1.

Contents

Introduction to the Versette™ ControlMate® Software	4
Intended use	4
Principle of operation	4
Installation/Calibration	4
Computer minimum requirements:.....	4
STEP 1: ControlMate Software installation process	4
STEP 2: Connect the Versette to a computer running ControlMate Software	5
STEP 3: Verify Versette system setup.....	6
STEP 4: Calibrate the Versette position coordinates	6
Getting Started	8
Labware	8
Create pipetting programs.....	8
Basic steps.....	9
Sample sequence creation.....	10
Saving a sequence.....	10
Running a sequence	10
Command summary.....	11

Introduction to the Versette™ ControlMate® Software

This Brief User Manual provides a brief introduction to the installation and startup of the Thermo Scientific™ ControlMate™ Software for Versette and creating and running programs on the Thermo Scientific™ Versette™ system.

The user manuals for the Versette system and ControlMate Software are on the Thermo Scientific™ Versette™ installation CD. Read the user manuals in their entirety before operating the instrument.

Intended use

The Thermo Scientific™ Versette™ is intended for professional research use by trained personnel. The instrument is intended for automated microplate and tube pipetting. Use for diagnostic testing is excluded. It is recommended that Good Laboratory Practice (GLP) is followed to guarantee reliable analyses.

Principle of operation

The Versette system is an automated microplate and tube pipetting system for fluid manipulation at all stages and rates of production. The system features advanced 96- and 384-channel user interchangeable pipetting heads can be used for plate stamping, plate reformatting, serial dilution, assay setup and development, and other applications.

Because the ControlMate software is tightly integrated with the Thermo Scientific Versette system, you can control all Versette™ functions from the software, such as changing tips and pipette heads, or fine-tuning plate movements to handle delicate pipetting operations.

Installation/Calibration

Computer minimum requirements:

- Computer running Microsoft™ Windows™ XP SP3 or Windows™ 7 (32- and 64-bit)
- Screen resolution set to at least 1024 x 768
- CD-ROM, removable drive, or network drive for access to installation software

STEP 1: ControlMate Software installation process

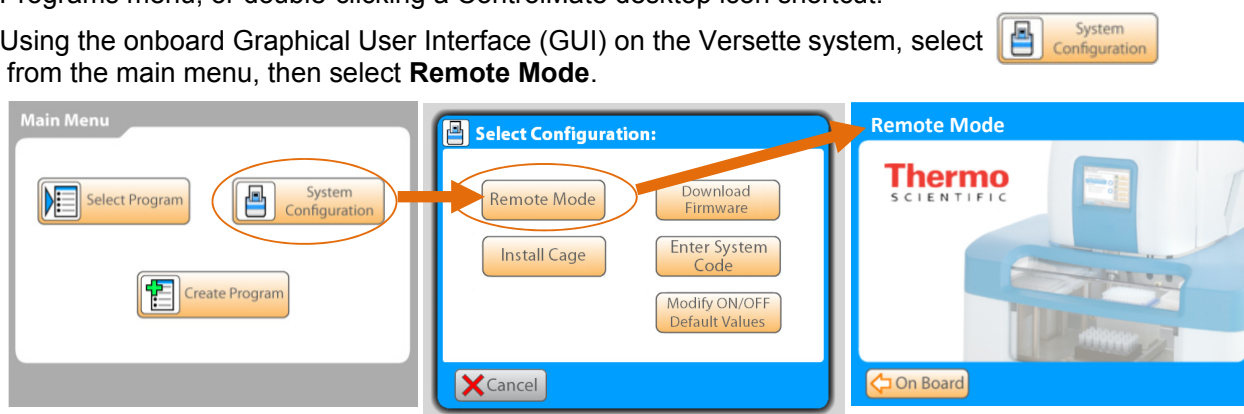
ControlMate Software can be used from a CD, a flash drive, or installed from a common directory or server.

1. Locate and double-click on the *setup.exe* file to launch the installation program.
2. At the InstallShield™ Wizard, click “Next.”
3. Read the License Agreement, select “I accept the terms in the license agreement” to agree and continue to install the software, then click “Next”.
4. Wait for the ControlMate files to copy to your installation directory, then select “Finish” when displayed, to exit the wizard.
5. Refer to the *ControlMate User Manual* (Cat. No. 110762) for user instructions.

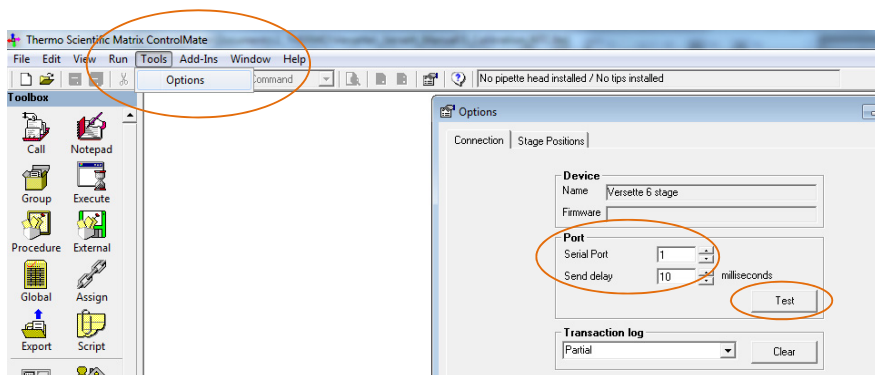
STEP 2: Connect the Versette to a computer running ControlMate Software

Refer to the *ControlMate User Manual* for details on any of the following steps.

1. Use the Windows® Control Panel to set the computer to work with ControlMate:
 - Set Region to “English” (ControlMate uses English conventions for all numerical entries).
 - Disable hibernation mode.
 - Disable sleep mode.
2. Connect the computer to the Versette with an RS-232 cable:
Do not use an RS-232 cable longer than 3 m when connecting the computer to the system.
 - Serial connector details: RS-232C, 115,200 bps, 8 data bits, 1 stop bit, and parity: none
 - If no RS-232 connection is available on the computer, a commercially available USB/Serial adapter may be used.
3. Start ControlMate by clicking “Start” in the Windows Taskbar and selecting ControlMate from the Programs menu, or double-clicking a ControlMate desktop icon shortcut.
4. Using the onboard Graphical User Interface (GUI) on the Versette system, select from the main menu, then select **Remote Mode**.

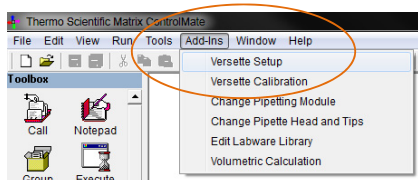


5. Using the ControlMate software:
 - a. Click on the **Tools** menu and select **Options**.
 - b. Click the “**Test**” button. Verify that the Device Connection is OK.
 - c. If necessary, change the Serial Port and re-test. The system defaults to Serial Port 1. If necessary, use the arrow keys to select the Serial Port (RS-232 or RS-232 Virtual Serial Communication port) for your computer connection, then click the “Test” button. Verify that the Device Connection is OK.

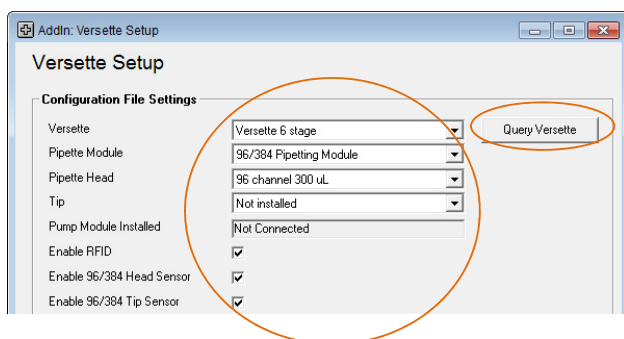


STEP 3: Verify Versette system setup

1. From the Add-ins drop-down menu, select “Versette Setup”.



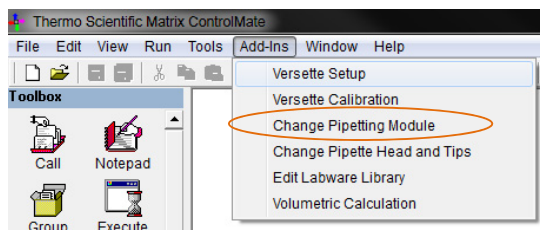
2. Click the “**Query Versette**” button to confirm the Versette and ControlMate are properly communicating. Drop-down fields will automatically prefill with the appropriate information. When finished, click “**OK**”. Refer to the ControlMate User Manual for details.



STEP 4: Calibrate the Versette position coordinates

The Versette's coordinate system should be calibrated upon installation and re-checked whenever the system is moved.

1. Install the NTC Pipetting Module
 - a. From the Add-Ins drop-down menu, select “**Change Pipetting Module**”



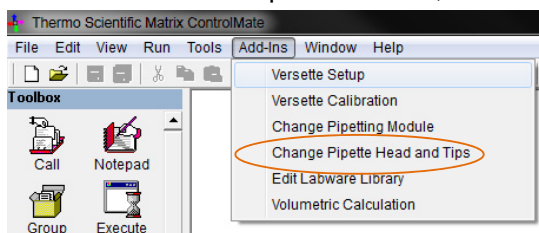
- b. Follow the screen prompts to install an NTC pipetting module.
- c. When prompted, open the pipette module door and move the release bar DOWN as shown:



- d. Continue to follow screen prompts. When system displays "Change complete", close the window by clicking the “X” in the upper right-corner.

2. Install the Teach Tool.

- a. From the Add-Ins drop-down menu, select **“Change Pipetting Head and Tips”**



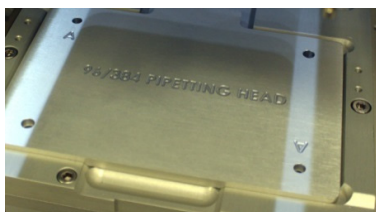
- b. Follow the screen prompts on the Versette system to install an NTC pipetting module and teach tool.



Press firmly
in until the
pipette
head clicks
in place



- c. Place the Calibration Plate flat in position on Stage 2 with the **“96/384 PIPETTING HEAD”** side facing up.



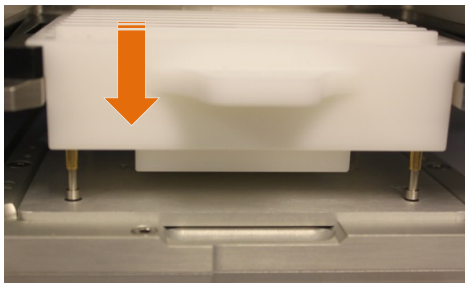
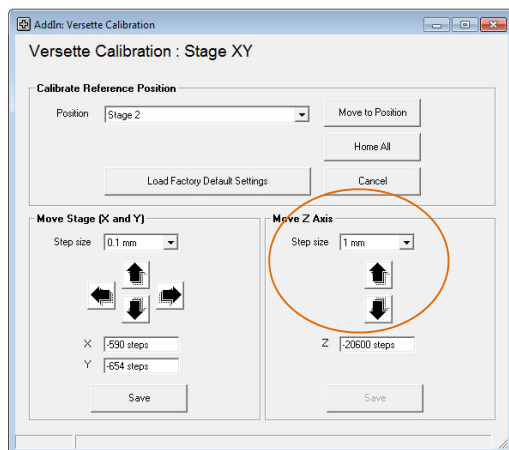
3. Calibrate the stage XY coordinates.

- a. From the Add-Ins drop-down menu, select **“Versette Calibration”**.
b. Select the 96/384 Pipetting Module then click **“Calibrate Stage XY”**.
c. Read and comply with any instructions.
d. Select Stage 2 from the drop-down menu (default), then click **“Move to Position”**.



- e. After Stage 2 has moved in position under the teach tool, use **“Move Z Axis”** to lower the teach tool to approximately 1 mm above the Calibration Plate:
- Select the appropriate Step size (0.1 mm, 1 mm, 10 mm, etc.)
 - Click the Down arrow to move the pipetting module closer to the stage position

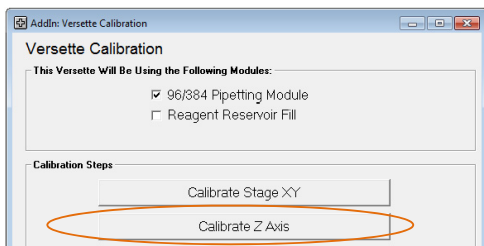
Use care when moving the pipetting module to avoid hitting the stage. Select the smallest reasonable Step size.



- f. Check the alignment location. The teach tool posts should be positioned so that the posts will line up correctly to go into the plate holes.
- g. Click "Save" to save the calibration coordinates, read the message, then click "OK". Wait approximately 15-30 seconds or more for the system to save the changes.

4. Calibrate the z axis.

- a. Select "Calibrate Z-axis".



- b. Follow the instructions and click "continue"
- c. Select Stage 2 (default) and click "Move to position"
- d. Select the proper step size and move down, using arrows until teach tool touches the calibration plate.
- e. Height is correct when you are able to slide a piece of paper underneath the pin.
- f. Click "save" and wait 15 to 30 seconds for the system to save the changes.

Getting Started

Labware

The ControlMate software comes pre-loaded with an electronic 'library' of pre-loaded labware dimensions for various microplates and tubes. This allows instant use of a variety of labware. The "Edit Labware Library" function allows a user to modify, add, or delete labware entries. Refer to the Versette ControlMate User Manual for details to enter or edit labware items, if required for your application.

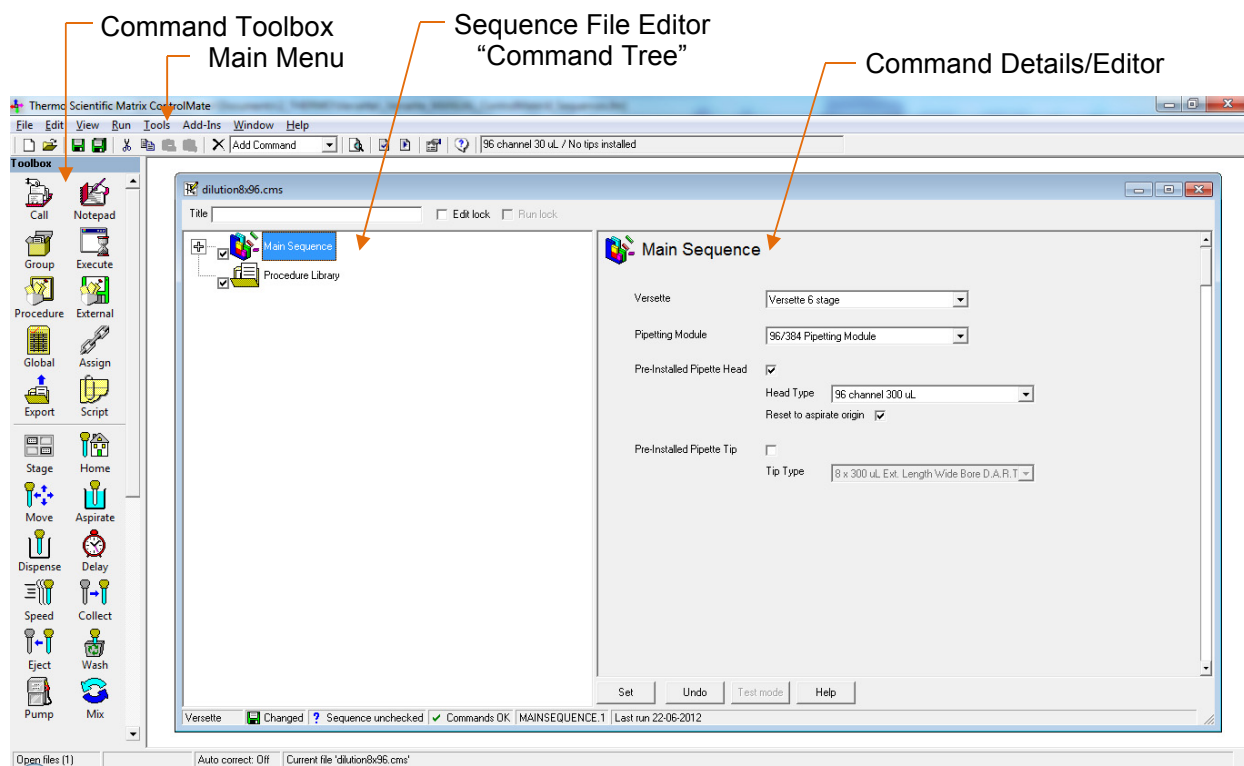
Create pipetting programs

A pipetting program is a sequence of actions that accomplishes a pipetting task. The pipetting program is called a sequence file. Separate sequence files can be created for various processes including serial dilutions, plate-to-plate transfers, and simple dispensing operations. There are

typically several alternative methods to create sequences, including the use of icons, menu items, and keyboard shortcuts. Refer to the “Sample Pipetting Sequences” in the *Versette ControlMate User Manual* for examples of various complete sequences and ‘tutorial-steps’ explaining how to create the sample sequences.

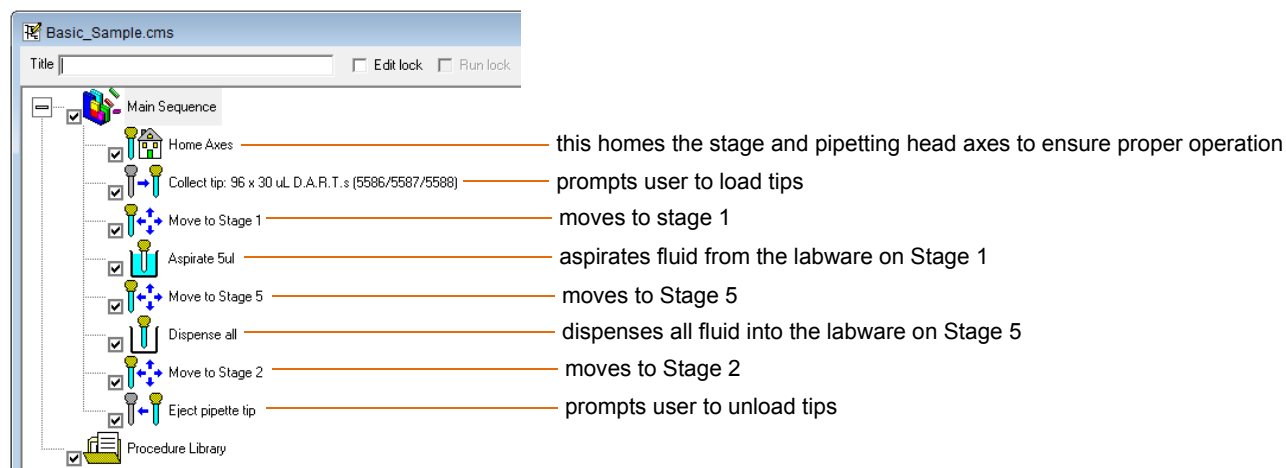
Basic steps

1. Select “File”, then select “Create New Sequence”.
2. Click on an icon to add that icon to the Command Tree.
3. Set details for each command (enter values for volume, speeds, etc.).

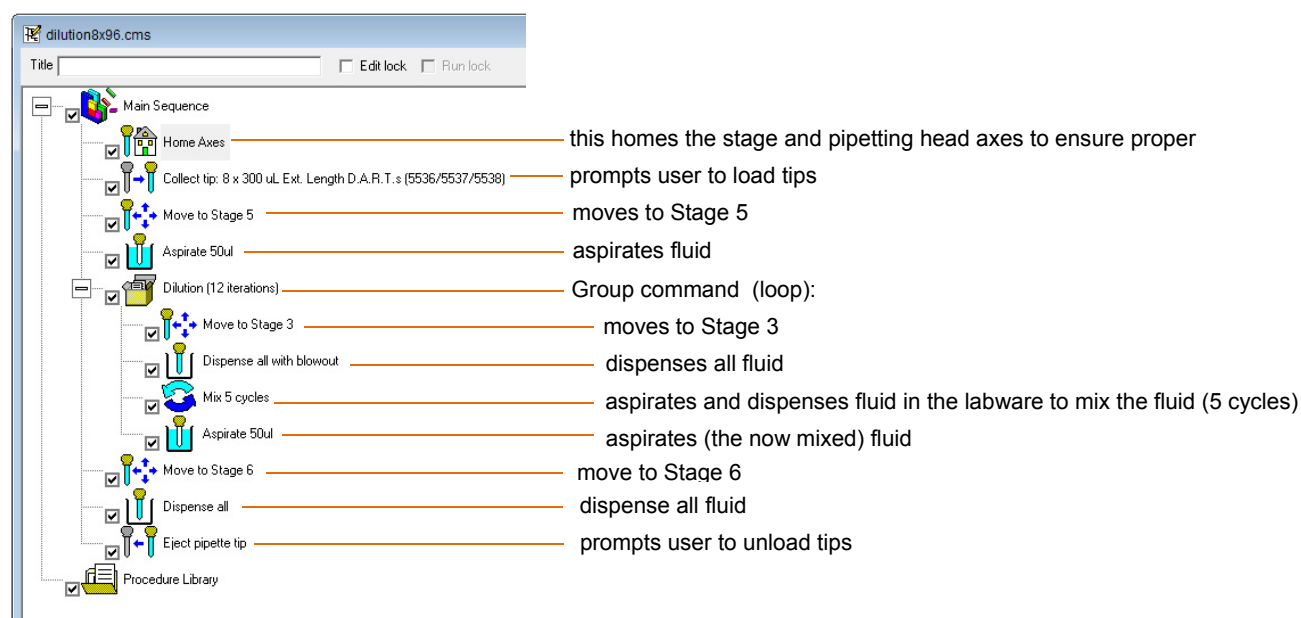


Sample sequence creation

Most sequences are very easy to create using basic commands. A sequence typically consists of moving to a fluid source location on a stage, aspirating the fluid, then moving to another location to dispense the fluid. The sample sequence below shows the basic use of these common commands:



More complex sequences can be created to perform specific tasks, including serial dilution. In the example below, a “Group” command is used to create a ‘loop’ that repeats 12 times. Each time the loop is repeated, the stage is moved to allow fluid to be aspirated and dispensed from a different column in the labware on stage 3.



Saving a sequence

From the main menu, select “File”, “Save As”, then enter a name for the displayed sequence file. Once saved a sequence can be run or opened at a later date for use.

Running a sequence

From the main menu, select “Run”, then “Start” to run a sequence.

Note: The ControlMate software performs continuous basic checking/validation of the sequence during creation. You can also select “Run”, then “Validate” to perform a validation check of the sequence. ControlMate will display any errors with details for required corrections.

Command summary

Commands are summarized in the following table. Refer to the *Versette ControlMate User Manual* for complete details.

Icon	Command	Purpose/Usage
	Home Axes	Resets all stage and head motors to their home positions. This is typically performed upon system startup or following the installation of a pipetting head.
	Speed Control	Adjusts speed (aspiration or dispensing speed), horizontal and vertical stage speeds, etc.
	Move	Move a stage or pipette head.
	Collect Pipette Tips	Pause system and prompt user to load tips.
	Eject Pipette Tips	Pause system and prompt user to unload tips.
	Aspirate	Aspirate a measured volume.
	Dispense	Dispense a specific volume.
	Delay	Pause the program
	Mix	Aspirates and dispenses a measured volume in specified cycles to mix content of the well in a microplate.
	Pump	Controls pump speed and settings.
	Wash Tips	Washes inside and outside of pipette tips. Requires pump, tip wash station and/or automated wash reservoir.
	Stage Map	Typically used to specify the type/height of labware used on stage locations, as required to prevent a pipette head collision.
	Call Procedure	Calls a 'procedure' (sub-set of instructions within a protocol/sequence). Allows easy re-use of repeated sequence steps. This command is detailed with multiple examples in the <i>Versette ControlMate User Manual</i> .
	Notepad	Creates a note in the sequence file. Useful for documenting labware used on specific stage positions, steps in the sequence, and for reminders during the procedure.
	Group Commands	Groups together commands for a common purpose. For example, the commands used to perform a common mix procedure can be grouped together.
	Execute External Application	Launches an external application. For example, launch the Windows Paint program to display a graphic on the screen to alert the user when a step is completed, or prompt the user to take an action.

Icon	Command	Purpose/Usage
	Procedure	A procedure is a series of commands that are 'grouped' and included in a program listing. The main program can make a special call to a sub-procedure to execute the group of commands. The procedure could be a standard pipetting sequence that is routinely re-used in a program. Instead of copying and pasting multiple copies of the various steps, a "call procedure" step can be inserted to run the 'procedure. This can be inserted as many times as needed throughout the sequence. Refer to the "Call Procedure" command.
	Execute External Procedure	Execute a sequence that has been stored external to the current program sequence. An external sequence could be a complete serial dilute program, for example, or a wash sequence, or any sequence of commands that can be re-used and called by another program.
	Global Value	Global Values allow simple input and re-use throughout a sequence of a numeric, text, or other value, in multiple locations. Use of global values is a two-step process: 1. Define a Global Value 2. Assign a Global Value (set a value for the Global Value) For example, if a global value of 20 µl is set for dispense volume, and this global value is referenced a number of times throughout the protocol, each time the dispense volume is run, the value of 20 µl will be used. This can allow a quick change of a complex protocol: by changing the global value assignment to say, 30 µl, all subsequent runs of the protocol will use the new value.
	Assign Global Value	
	Export Global Value	This advanced command can be used to export information to external text-based files, for example, to generate reports.
	Script File Execution	This advanced command allows the 'calling' and execution of external scripting language files, for example, VBScript, JavaScript™, etc.