Thermo Scientific Versette™

Brief User Manual

Rev. 1.0, Cat. No. N14916

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Patents

Versette has national and international patents pending.

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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.

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

Contents

Introduction to the Versette Automated Liquid Handler 4
Intended use 4
Principle of operation 4
Accessory options 4
Warnings 4
Installation 6
Required tools/equipment 6
Installation steps 6
Step 1: Position the system 6
Step 2: Install the stage unit 7
Step 3: Install the safety shield 8
Step 4: Connect system power 8
Step 5: Optional equipment setup 8
Operation 9
Step 1: Perform an operational check 9
Step 2: Install ControlMate Software 9
Computer minimum requirements: 9
ControlMate Software installation process 9
Step 3: Connect the Versette to a computer running ControlMate Software 9
Step 4: Calibrate the Versette position coordinates 10
Step 5: System operation 10
Technical Specifications 12
General specifications 12
Safety specifications 12
In conformity with the requirements 12

Introduction to the Versette Automated Liquid Handler

This Brief User Manual provides a brief introduction to the installation and startup of the Thermo Scientific™ Versette™ system and the Thermo Scientific™ ControlMate™ Software for Versette. The instrument can be used through the touchscreen for simple procedures, or through ControlMate Software for Versette.

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.

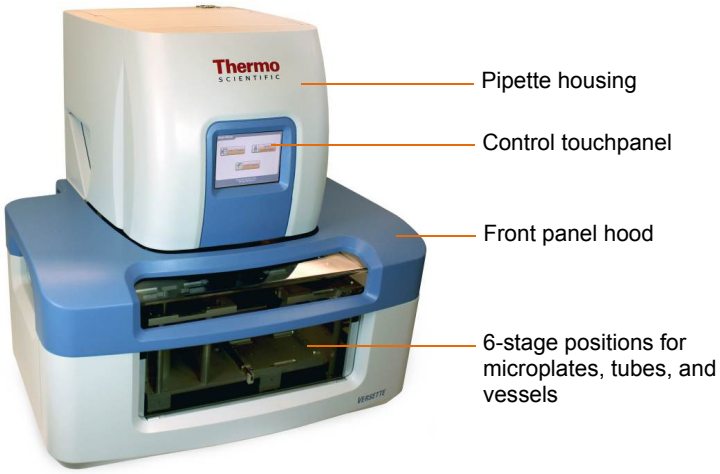


Figure 1. Versette system

Accessory options

For details and ordering information on accessories, including rapid-connect pipetting heads, Disposable Tips (D.A.R.T tips), reagent reservoir, serial dilute magazines, etc,. refer to the *Versette User Manual* (Cat. No. D09888).

Warnings

- This equipment is to be used only as offered, for the purposes described in this manual and the *Versette User Manual*, in accordance with standard industry safety practices and common safety usage. This equipment is not intended for any other usage other than that described. Use of this equipment in any other application or manner, without the direct written consent of

Thermo Scientific may constitute an unsafe practice, and will void all warranty on the part of the manufacturer.

- Do not modify the equipment, the safety shields, the components, nor any accessory, nor use, store, ship, or otherwise handle or cause to be handled this equipment in any manner other than that which is expressly offered for sale. Inappropriate use of this equipment, and unauthorized modifications of the equipment and any action of use of the equipment, storage of the equipment, shipping, or other handling of the equipment, in a manner not expressly authorized by Thermo Scientific will void any and all warranties and liabilities of the manufacturer, whether expressed or implied.
- Ensure that the power plug is connected to a power receptacle that provides voltage and current specified for the device. Use of incompatible line power can cause shock and fire hazard.
- Never use a two-prong adapter or connect the device into a two-prong receptacle. Use of a two-prong receptacle disables the electrical grounding and creates a severe shock hazard. Always plug the device directly into a three-prong receptacle with a functional ground.
- Do not use a power cord that is frayed or cut. Do not kink or strain the power cord. Use of a damaged power cord can cause shock and fire hazard.
- Never plug, unplug, or otherwise touch the power cord when your hands are wet. Contact with the cord can cause severe shock hazard.
- If you notice smoke or unusual odor or noise coming from the instrument, turn it off immediately, then unplug the power cord. Do not use the instrument until it has been serviced and inspected by Thermo Fisher Scientific or an authorized service representative.
- Always turn off the power switch and unplug the power cord when servicing the device. Contact with internal components or other components connected to the line power can cause severe shock hazard. Perform only service procedures that are described in the manual or authorized by Thermo Fisher Scientific service personnel.
- Do not allow tools, objects or liquids to enter the instrument through ventilation slots or other openings. Contact with electrical or other internal components can cause a severe shock, fire hazard, or instrument malfunction. If a hazardous condition occurs, disconnect the instrument from the line power immediately.
- Keep hands away from moving parts (e.g., tips magazine mechanism, moving stages, and any peristaltic pump). Personal injury may result. Warning symbols on the device indicate areas of potential personal injury.
- Always ensure that the local supply voltage in the laboratory conforms to that specified on the rating label on the instrument’s power-connector.
- Use protective gloves and eyewear and always wash your hands thoroughly after handling test fluids and/or touching potentially soiled areas/components.
- Observe normal laboratory procedures for handling potentially dangerous samples.
- Wear proper protection clothing, such as protective gloves, eyewear, and laboratory coats and/or other personal protection equipment, according to good laboratory practice and your facility requirements.
- Ensure that the working area is properly ventilated.

Installation

Required tools/equipment

- Precision level (bull's eye level or similar level recommended)
- 4 mm, 3 mm, 2.5 mm, and 2 mm hex (ogonal) wrenches
- Phillips screwdrivers

Installation steps

Refer to the *Versette User Manual* for installation details.

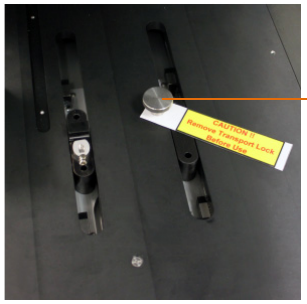
Step 1: Position the system

1. Move the packed instrument to its site of operation.
2. To prevent condensation, the instrument should be left in its protective wrapping until the ambient temperature has been reached.
3. Unpack the Versette system and accessories carefully to prevent damage. Leave at least one foam end piece in place during installation to prevent the system stages from sliding back and forth during the installation process.

   Warning! The base system (without pipetting module, pipetting heads, and stage assembly) weighs approximately 36 kg [80 lbs.] and should be lifted with care. Remove the instrument from the package using a two-person lift.

Leave the foam in place to prevent sliding of the stages during installation.

4. Position the system on a stable, vibration-free work platform, away from magnetic fields. Refer to the "Site requirements" in the *Versette User Manual* for details. Use a precision level to ensure the installation work surface is level.
5. Remove the transport lock from the stage.

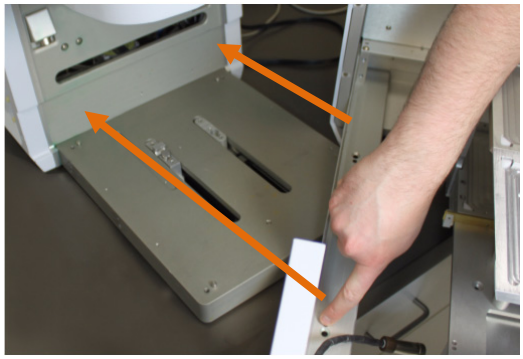


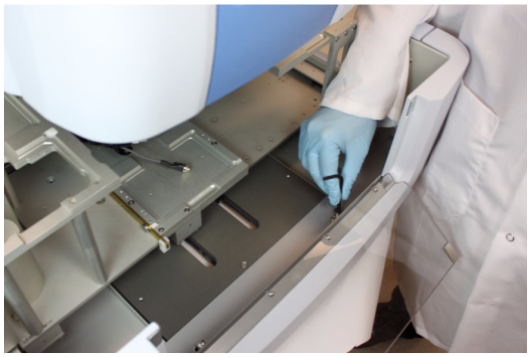
Remove transport lock

Step 2: Install the stage unit

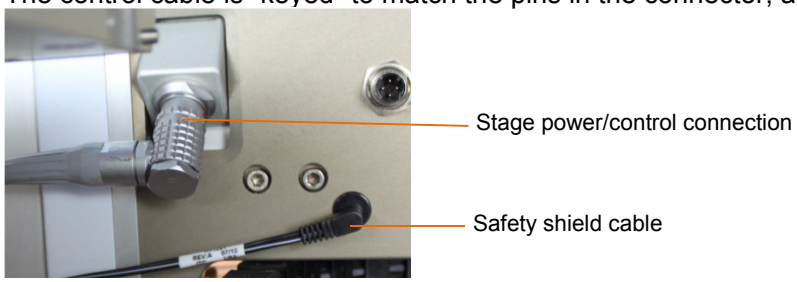
1. Manually move the stage locking pin to the rear of the base platform.

2. Carefully place the stage assembly onto the base platform and align to the four corner pins as shown. Use a 4 mm hex wrench to secure the stage assembly onto the base platform with M6 x 12 button head screws.





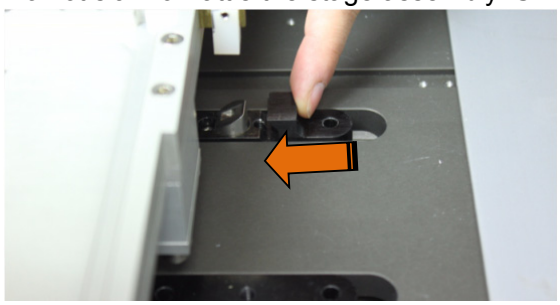
3. Attach the safety shield cable and the stage control cable to the system connections, as shown. The control cable is “keyed” to match the pins in the connector, and must be pushed into place.

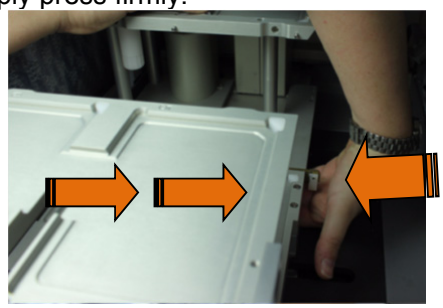


4. Engage the stage into the stage locking pin:
   With one hand, reach over the stages and push the locking pin forwards towards yourself as you gently push the stage assembly towards the rear of the system.

   Be sure to slide the locking pin forward and hold firmly while pushing the stages to the rear. The stage assembly should now engage the base pin and belt and slide with firm pressure, in and out.

   Do not slam or rattle the stage assembly. Simply press firmly.

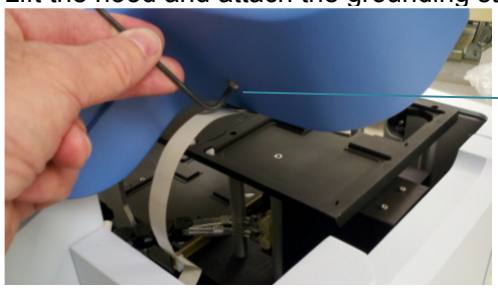




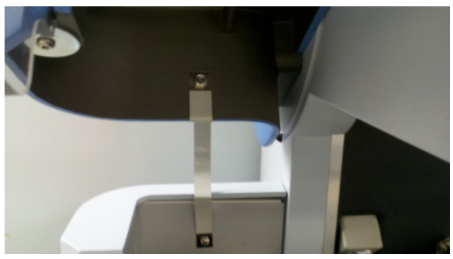
Step 3: Install the safety shield

1. Slide the blue safety shield assembly onto the system and attach with four supplied M5 x 10 mm shoulder screws using a 3 mm hex wrench.

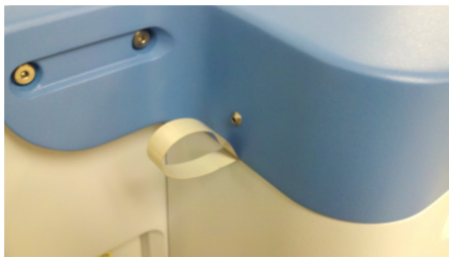
2. Lift the hood and attach the grounding strap from the stage to hood, as shown:



Loosen the screw on outside, then attach grounding strap to the inside with a screw, lockwasher, and nut.



Inside view when properly installed



Outside view when properly installed

Step 4: Connect system power

1. Connect supplied power cable to the system and to a correctly installed line power outlet which has a protective conductor, also called earth or ground.

Warning! Ensure that the mains switch is in the OFF (**O**) position. Never operate the instrument from a power outlet that has no ground connection. Never use a power supply cable other than the Thermo Scientific power supply cable designed for your region.

Step 5: Optional equipment setup

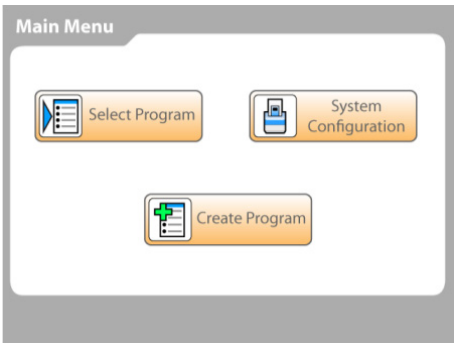
1. If using a wash station and/or external fluid connections, refer to the *Versette User Manual* for installation details.

Operation

Step 1: Perform an operational check

Complete the following procedure to confirm the correct functioning of the system prior to normal use.

1. Verify that the safety shields are in place and closed.
2. Verify that the power cable is connected to an appropriate power supply.
3. Switch the instrument on using the power switch. The stages will move to the home positions and the dispense mechanism lifts to the up position. Wait for the touchscreen to initialize and display the main menu.



Step 2: Install ControlMate Software

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

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.

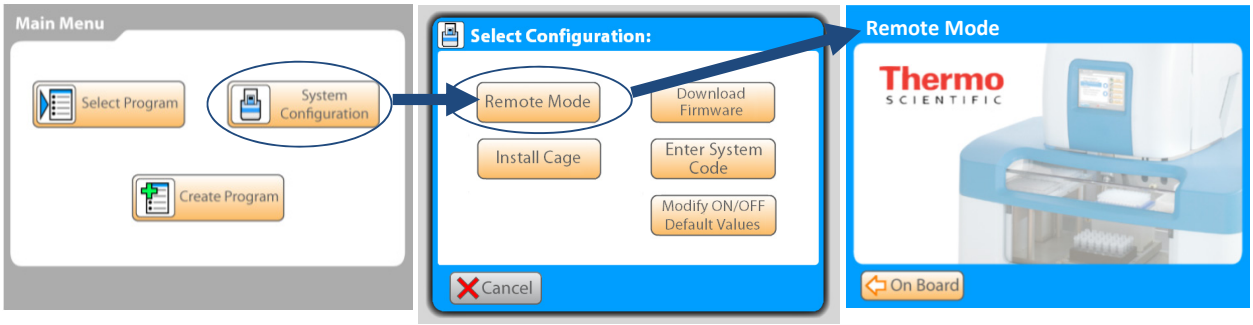
Step 3: Connect the Versette to a computer running ControlMate Software

Refer to the *Versette ControlMate 1.2.0 User Manual* for details on any of the following steps.

1. Use 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.
6. From the Add-ins drop-down menu, select "Versette Setup".
7. Click the "Query Versette" button. The drop-down fields will automatically prefill with the appropriate information. When finished, click "OK".

Step 4: Calibrate the Versette position coordinates

1. In ControlMate, select "Add-ins", "Versette Calibration", then follow the step-by-step instructions to calibrate the system coordinates. Refer to the *Versette User Manual* for details.

Step 5: System operation

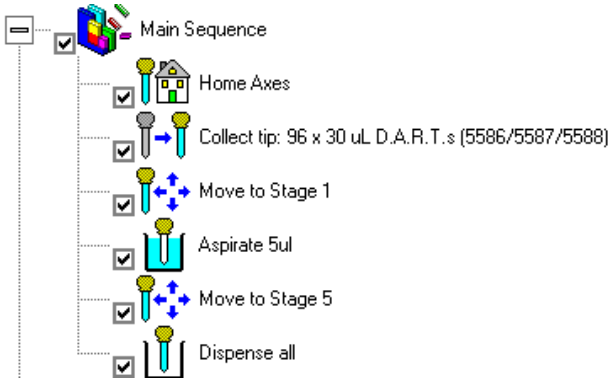
The Versette system executes a series of commands (called a *program* or *protocol*) to aspirate fluid from labware, and dispense this fluid into labware located on one of multiple stages in the system.

A simplified operation process is listed below:

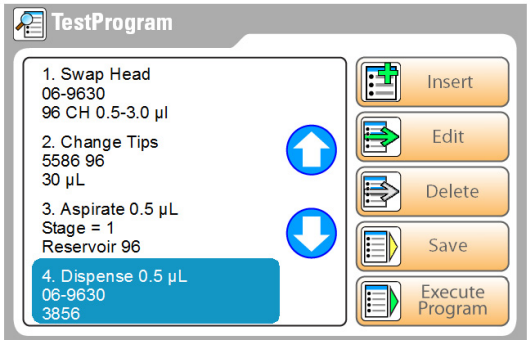
1. Create a program to run a series of aspiration, movement, and dispense commands. This can be done through the onboard touchpanel or with the use of ControlMate Software for Versette.
2. Install the desired pipetting head.
3. Connect a fluid source, or install fluid, as appropriate.
4. Install labware into the system.
5. Run the program.

As the Versette is a flexible system, actual operation will vary to meet the specific needs of the end user. Refer to the *Versette User Manual* for details.

A simple ControlMate protocol tree is shown below. In this example, the system would home all positional axes, collect tips, move to a stage and aspirate fluid, move to another stage and dispense the fluid.



A simple TouchScreen sample protocol is shown below. In this example, the system would prompt the user to swap the dispense head and tips, then move to stage 1 and aspirate fluid from a reservoir, then move to another stage and dispense the fluid:



Technical Specifications

Thermo Fisher Scientific reserves the right to change any specifications without prior notice as part of our continuous product development program.

General specifications

Table 1. General specifications

General specifications	
Operating conditions (indoor use)	+4°C to +40°C; maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C Indoor use only
Power requirements	AC 100~240 V, 50/60 Hz., 2 A draw

Safety specifications

In conformity with the requirements

Table 2. Safety specifications

The safety specifications are also met under the following environmental conditions in addition to or in excess of those stated in the operating conditions:	
Altitude	Up to 2000 m
Temperature	+4°C to +40°C
Humidity	Maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C
Supply voltage fluctuations	±10% from nominal
Installation category (overvoltage category)	II according to IEC 60664-1
Pollution degree	2 according to IEC 60664-1

Note! 1) The installation category (overvoltage category) defines the level of transient overvoltage which the instrument is designed to withstand safely. It depends on the nature of the electricity supply and its overvoltage protection means. For example, in CAT II which is the category used for instruments in installations supplied from a supply comparable to public mains, such as hospital and research laboratories and most industrial laboratories, the expected transient overvoltage is 2500 V for a 230 V supply and 1500 V for a 120 V supply.

Note! 2) The pollution degree describes the amount of conductive pollution present in the operating environment. Pollution degree 2 assumes that normally only nonconductive pollution, such as dust, occurs with the exception of occasional conductivity caused by condensation.