

Instruction manual

VWR® Microplate Washer, for 96 Well Plates

Global cat no.: VWRI210-000171



For Research Use Only

CE

UK
CA

Legal address of Manufacturer

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Warning



Please read this manual carefully and operate the instrument safely according to the guidelines.



The instrument is a normal indoor instrument which conforms to class I of the GB 4793.1 standard.



This instrument is designed for use in a laboratory environment. The device must be operated by skilled laboratory personnel with appropriate training.



To prevent injury or voiding the warranty, the operator should not attempt to repair the instrument without explicit guidance from VWR. If service is required, please contact VWR service.

Safety Information

Avoiding Electrical Shock

Please follow the guidelines below and read this manual in its entirety to ensure safe operation of the unit.



Before powering on, confirm that the voltage used meets the electrical requirements of the instrument as stated on the rating plate. If the electric cord is damaged, replace it with the same type of cord. Hold the socket firmly before pulling the plug from an outlet. Do not pull the electric cord.



The instrument should be installed in an environment of standard room temperature, low dust, low humidity, and away from direct sunlight, electromagnetic interference, and heat sources.



Always power off the instrument when you are finished using it. Unplug the power cord and cover the instrument with a cloth or plastic sheet to prevent excessive dust from entering the housing.



Pull the connector plug from the instrument immediately and contact the VWR in the event of:

- Liquid entering the housing.
- Abnormal operation: such as any abnormal sound or smell.
- The instrument is dropped or there is damage to the housing.
- Any malfunction.

Package Contents

Description	Quantity
VWR Microplate Washer for 96 Well Plates	1
Power Cord (UK and EU plug)	1
Dust Cover	1
Wash/Waste/Rinse	4
Operation Manual	1
Performance Test Report	1
USB Drive	1

Installation

Installation Steps:

1. Open the package, remove the four bottles, wash heads, power supply and the instrument and place in onto a sturdy, flat and level desk or lab bench.



Attention: Remove the shipping safety lock before operating.

2. Unscrew the allen screw on the wash head rack using the included Allen key.
3. Connect the silicone tubes tot he wash head (Figure 3).

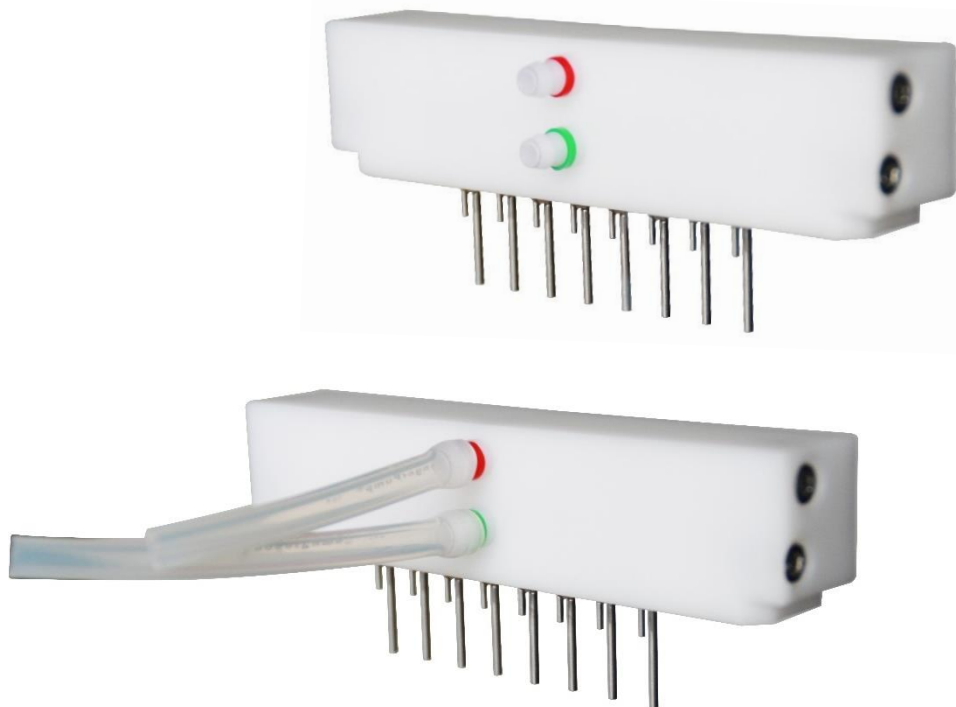


Figure 1: Connecting tubing to wash head

4. Insert the wash head into the rack and connect the silicone tubing tot he instrument as in Figure 2 (1x8 and 1x12 wash heads are installed in the same manner).
5. To connect wash bottles to the instrument, connect bottle tubing and level detection lines according tot he charts below:



Figure 2: Connecting tubing to the instrument

Silicone Tube from:	Instrument Connection Port	Color
Bottle W non-pressure output tube	Non- pressure	Yellow
Bottle A fluid output	Washing A	Black
Bottle B fluid output	Washing B	Blue
Bottle R fluid Output	Rinse R	Purple
Bottle W fluid input	Waste	Red

Level detection line:	Instrument Connection Port
Bottle A fluid level warning	Alert A
Bottle B fluid level warning	Alert B
Bottle R fluid level warning	Alert D
Bottle W fluid level warning	Alert W

Required Installation Environment

Environmental Temperature: 5°C ~ 45°C

Relative Humidity: ≤ 70%

Input Voltage: 100-240VAC, 50-60Hz, 2A

Intended use

This instrument is intended for washing 96-well plates in preparation for an ELISA reading.
For research use only. Not intended for any animal or human therapeutic or diagnostic use.

Product Specifications

Model	VWR Microplate Reader
Wash heads	8 channel or 12 channel
Wash modes	1 point, 2 point, or 3 point aspiration
Compatible Microplates	96 wells, standard SBS dimensions
Compatible Well bottoms	Flat, U, V, C bottom
Residual liquid volume	≤1uL(each well)
Dispensing Volume Range	50uL~2000uL
Wash cycles	1~99
Programs	100
Rinse function time range	00:00~03:59 (mm: ss)
Soak and shaking time range	00:00~99:00 (mm: ss)
Wash bottle level warning	Yes, sensors included in wash and rinse bottles
Dimensions (W x D x H) / Weight	345 x 460 x 200 mm / 11.5 kg

Description of Components

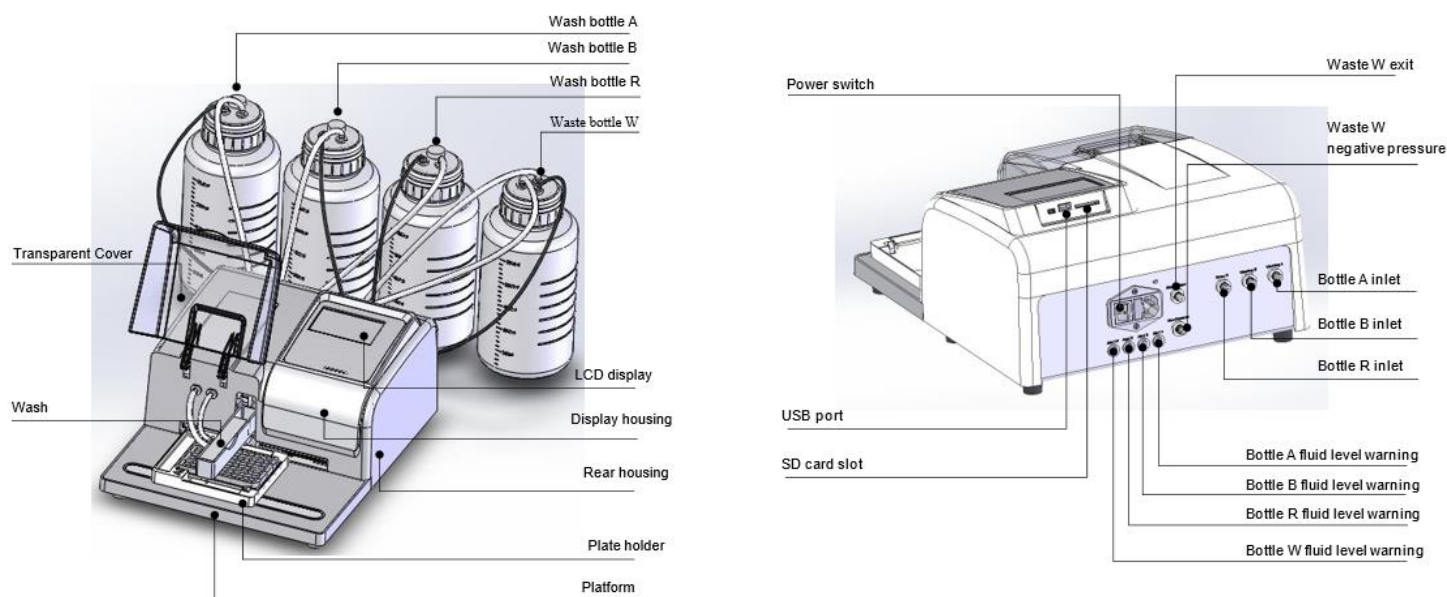


Figure 3: Front/Rear View

Operation

Startup and Software

Startup Self-Test

When the power is first turned on, the system will perform a quick self-test. Do not turn off the power or insert or remove a flash drive during the self-test.

Do not touch the wash head, wash head rack or plate holder when running.

An alert sound and warning will be displayed if the Waste Bottle W is full or if A, B or R are empty, or any of the sensors are not properly connected.

In the event of this type of start-up warning, check the liquid levels and sensor connections. Then push OK or F4 to cancel the warning.

Main Interface



Browse with the direction keys. Push and hold any key for the cursor to move faster in the direction you choose (Figure 5).

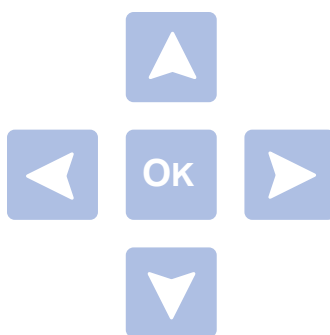


Figure 5: Navigation Keys

F1, F2, F3, F4 are shortcut keys, used for executing commands (Figure 6).



Figure 6: Shortcut Keys

Push the start/Pause button in the main menu, it will start to run the program; push again, it will pause the program Figure 7.

Push Rinse button in the “Wash” interface to rinse or prime the tubing. Pressing a second time will pause the priming. Press F4 key to cancel (Figure 7).

The stop button is used to stop a program during operation (Figure 7).



Figure 7: Start/Pause, Rinse and Stop Keys

Main Menu

The bold numbers and letters on the keypad correspond to the columns of wells on the ELISA plate when selecting the columns to be washed. Numbers 1-12 are used for the 1x8 head, letters A to H when using the 1x12 head). The lower cap letters are used when naming protocols (Figure 8).



Figure 8: Start/Pause, Rinse and Stop Keys



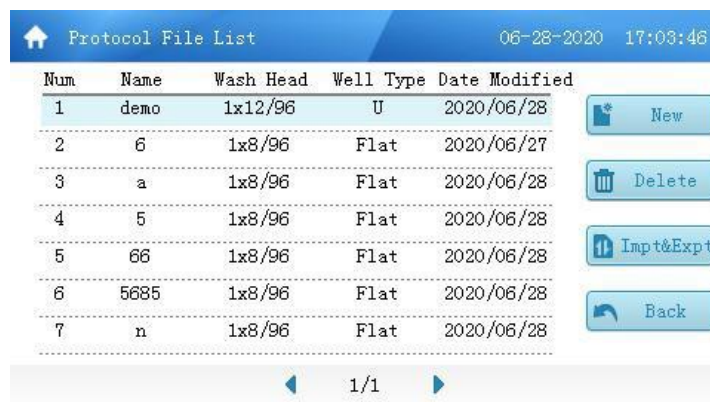
Figure 8: Main Interface Screen

Protocols

Choose the protocols icon (Figure 8) by pressing the UP, DOWN, LEFT, RIGHT buttons to highlight the icon, and then push OK to confirm. The Protocol File List will open.

Protocol File List

Use the UP, DOWN, and OK buttons to highlight an existing saved protocol, and press OK to select it. Or use the function keys F1 to F4 to select New, Delete, Import/Export, or Back (Figure 9). See page 22 for running a wash program.



Num	Name	Wash Head	Well Type	Date Modified
1	demo	1x12/96	U	2020/06/28
2	6	1x8/96	Flat	2020/06/27
3	a	1x8/96	Flat	2020/06/28
4	5	1x8/96	Flat	2020/06/28
5	66	1x8/96	Flat	2020/06/28
6	5685	1x8/96	Flat	2020/06/28
7	n	1x8/96	Flat	2020/06/28

Figure 9: Protocol File List

Settings

Click on Settings (Figure 8) to open a settings menu (Figure 10). Setting options include purge volume setting, sensor setting, injection index, beeper switch setting, and purge at power on.



Purge Volume (mL)	50	Modify
Liquid Level Sensors		
Injection Index	1.00	Save
Beeper Switch	Off	
Purge at Power On	Multiple	Back

Figure 10: Settings Menu

Purge Volume setting: Choose “Purge Volume” in the menu, then press “OK”. This allows setting of the volume of the solution which will be purged through the tubing during the start of a protocol run. Volume can be adjusted from 5ml to 100ml by 5 ml increments. The default purge volume is 50ml.

Note: When a protocol is selected that uses a different wash bottle than used in the previously run protocol, the purge function will run before the washing steps. This purge function will replace the liquid in the dispensing tubes and wash heads with the appropriate buffer for the current wash protocol. When a wash protocol is repeated, the purge function does not run, because the tubing and wash heads will already contain the appropriate solution.

Liquid Sensor: This allows turning on or off the sensors A, B, and R.



Note: Sensor W for Waste Liquid Level cannot be set to off.

Injection Index: This is for calibrating the set dispensing volume. The range of the Injection Index is 0-2.00, and can be adjusted in increments ± 0.01 . The default value is 1.00.

Beeper switch: The audible beep for indicating an alarm or warning can be turned on or off.

Purge at Power On: When the first wash protocol is run *after* the instrument is powered on, the purge function will run to remove bubbles and prime the dispensing tubes and wash heads. This can be set for “Single” or “Multiple”.

“Single” setting: Only the single wash solution that is selected in the protocol will purge through the tubes and wash head prior to washing.

“Multiple” setting: All of the active wash solutions (Solutions A, B, R, when liquid level sensors are enabled) will purge through the dispensing tubing and wash heads.

Maintenance

Wash To select maintenance, click on maintenance icon within main instrument interface (Figure 8). This menu includes the Rinse setting, 1x8 channel calibration and 11x12 channel calibration (Figure 11).

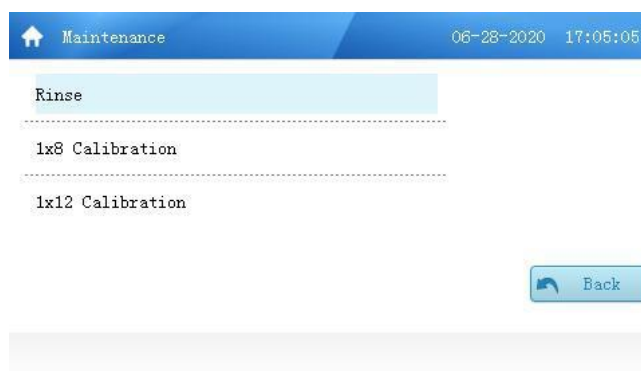


Figure 11: Maintenance Menu

Rinse: The rinse function can be used for priming the dispensing tubes (removing air bubbles) and also for rinsing out the dispensing tubes and wash head.

Note: Recommended that wash solution bottle R is filled with distilled water, and this is used for rinsing after using the microplate washer. It is recommended to use the rinse function before powering off the instrument if it will not be used for a while.

Select which tubing line is to be rinsed, and rinse time (Figure 12).

- Select tubing line from bottle A, B or R
- Set the rinse time: 00:01-03:59 (mm:ss), the default time is 2:00.

Figure 12: Rinse Menu

The rinse function can be activated by pressing the “Rinse” button.



1X8 Calibration and 1x12 Calibration:



- It is recommended to calibrate the position of the wash head before use, although it has been calibrated in the factory with standard micro plates.
- Vertical and horizontal positioning can be adjusted in increments of 0.1mm
- Choose 1x8 or 1x12 channel wash head, depending on which is used, press OK to enter into the calibration interface.

Attention! Confirm that the proper wash head is selected before calibration (Figure 13).

Figure 13: 1x8 Calibration

Left deviation (Figure 14): Left deviation means the distance between the starting position of the dispensing needle to the center of the left row of wells of the micro plate. Choose the left deviation function in the calibration menu, then push OK button. The plate will move so that the wash head needles are aligned above the left row of wells. Use the UP or DOWN arrow buttons to move the needles left or right, respectively, to position the needles directly above the center of the wells. Push OK

button to confirm and save the setting.

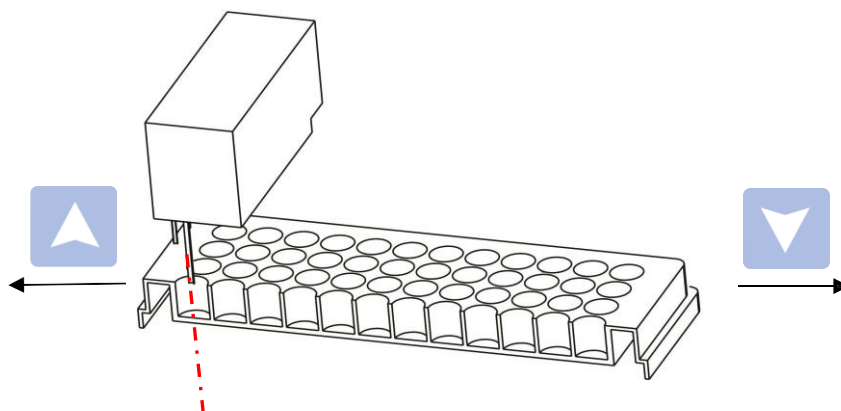


Figure 14: Left Deviation

Right deviation (Figure 15): Right deviation means the distance from the starting position of the needles to the center of the right row of wells. Adjust the position using the up and down arrows so the needles are centered above the right most row of the microplate.

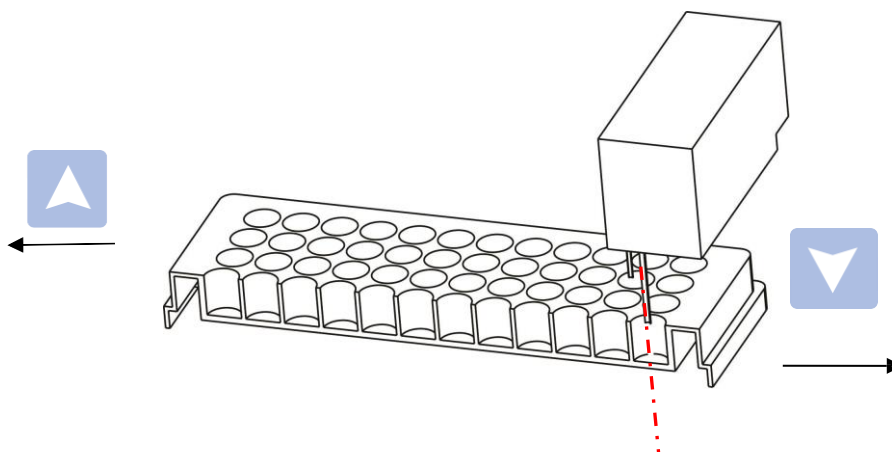


Figure 15: Right Deviation

Top deviation (Figure 16): allows adjusting the distance between the wash head bottom to the photoelectric switch. Choose the top deviation function in the calibration menu, then push OK button to enter. Push UP and DOWN to adjust the distance. The distance between the needle bottom and the top of the micro plate should be approximately 2-3mm.

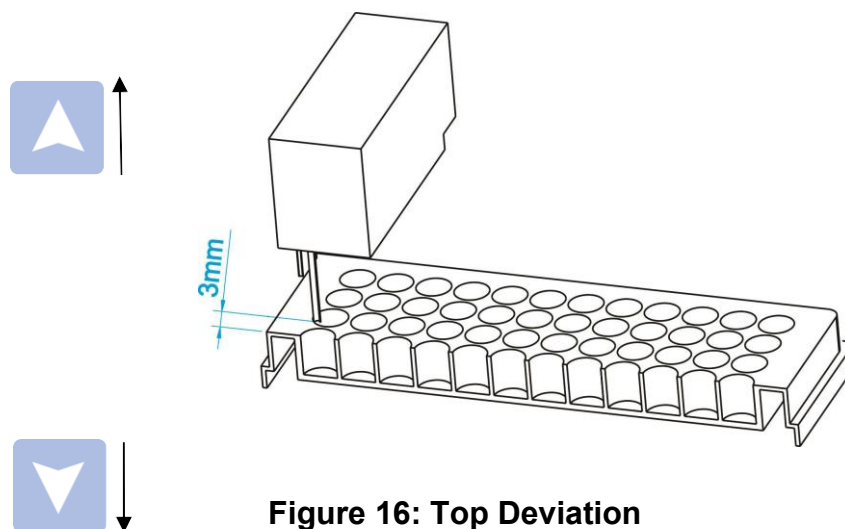


Figure 16: Top Deviation

Bottom deviation (Figure 17): is the distance between the wash head bottom to the photoelectric switch. Choose the top deviation function in the calibration menu, then push OK button to enter. Push UP and DOWN to adjust the distance. The distance between the needle bottom to the bottom of the microplate well should be about 0.5-1mm

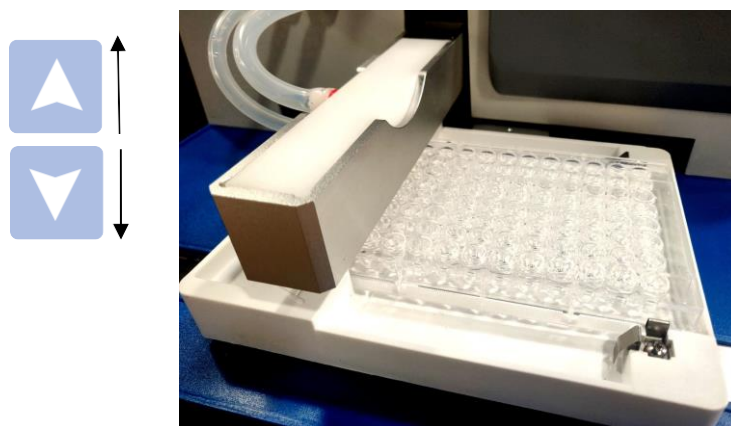


Figure 17: Bottom Deviation

System

The System Menu includes date & time settings, language setting, reset and system upgrade (figure 18).

Available languages: English and Chinese.



Figure 18: System Interface

Reset: All settings will be restore factory settings if press “Reset”,except calibration interface,Time&Date,and languages setting (Figure 19).



Figure 19: Re-setting back to factory settings

System Upgrade:

MCU Upgrade: for hardware updating by USB flash drive.

Soft Upgrade: for software updating by USB flash drive.

Picture Upgrade : the start up image and home page image can be changed by USB flash drive.

Preparing Wash and Waste Bottles

Filling, washing, and connecting bottles

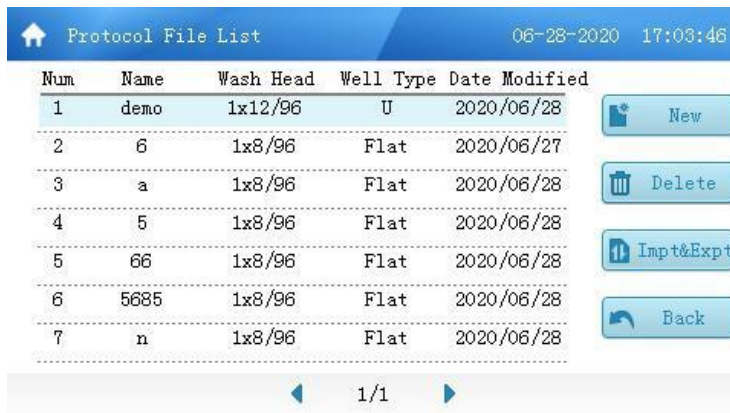
- Unscrew the bottle caps, fill or empty the bottles with appropriate solutions as required.
- Screw the caps firmly onto each bottle, and securely connect the tubing to the bottles and appropriate ports on the instrument.
- Use the Rinse function as needed to purge the tubing and remove bubbles before running a program.
- Make sure there is enough solution in the bottles A, B, R, and there is space in the W (Waste)

bottle, before running the program.

- Note: The system will detect the fluid level automatically. Check the fluid level warning icons during a run to determine if any bottles need to be filled or emptied.

Creating a new wash protocol

Starting from the Protocol File List interface (Figure 20), press the function button F1 to choose “New” to create a new wash protocol (Figure 21). It is also possible to open an existing protocol from the list and then modify it as needed (Figure 21)



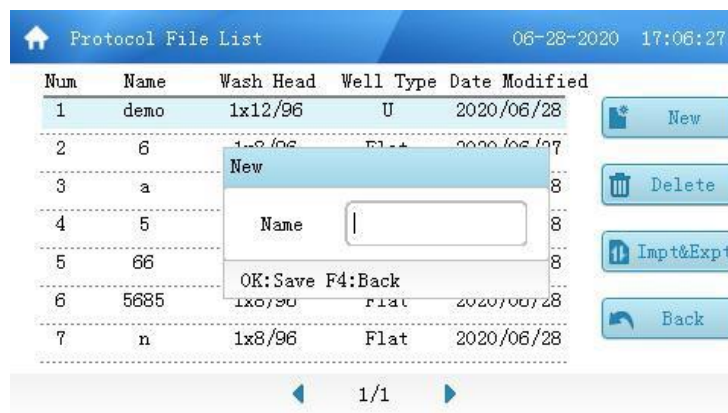
Protocol File List 06-28-2020 17:03:46

Num	Name	Wash Head	Well Type	Date Modified
1	demo	1x12/96	U	2020/06/28
2	6	1x8/96	Flat	2020/06/27
3	a	1x8/96	Flat	2020/06/28
4	5	1x8/96	Flat	2020/06/28
5	66	1x8/96	Flat	2020/06/28
6	5685	1x8/96	Flat	2020/06/28
7	n	1x8/96	Flat	2020/06/28

Buttons: New, Delete, Impt&Expt, Back

1/1

Figure 20: Protocol File List



Protocol File List 06-28-2020 17:06:27

Num	Name	Wash Head	Well Type	Date Modified
1	demo	1x12/96	U	2020/06/28
2	6	1x8/96	Flat	2020/06/27
3	a	1x8/96	Flat	2020/06/28
4	5	1x8/96	Flat	2020/06/28
5	66	1x8/96	Flat	2020/06/28
6	5685	1x8/96	Flat	2020/06/28
7	n	1x8/96	Flat	2020/06/28

Buttons: New, Delete, Impt&Expt, Back

1/1

New

Name

OK: Save F4: Back

Figure 21: Create a New Protocol



Protocol 06-28-2020 17:06:39

Name demo

Well Type U

Wash Head 1x12/96

Steps R/300ul/soak 0:00/Shake Off

Columns A B C D E F G H

Buttons: File List, Save, Save as, Back

Figure 22: Modify a Protocol

Enter a name for the new wash protocol using the number/letter keyboard, then press OK to save it.

The Protocol Programming Interface will be displayed, and using the UP, DOWN, and OK buttons, the program can be customized (Figure 22).

Well Type: can be set per the shape of the well bottoms on the microplate to be used (Figure 23).

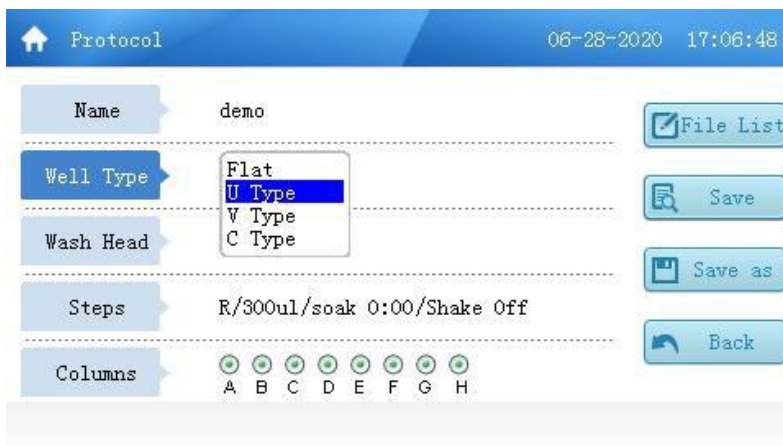


Figure 23: Well Type

Wash Head: Choose the wash head that is installed (1x8 or 1x12 channel) (Figure 24).



Figure 24: Wash Head

Steps: Selecting the “Steps” button will open the Step Programming interface (Figure 25).

Steps

06-28-2020 17:07:16

Wash Liquid	R	Wash Mode	Full Plate	☒ Modify
Wash Volume (uL)	300	Suction Time (s)	2.0	
Wash Cycles	99	Aspiration points	Two	
Soak Time	0:00			
Shaking	Off			Back

Figure 25: Steps

Step Programming Interface:

- **Wash Liquid:** Choose the wash liquid from bottle A, B, or R, the default is B.
- **Wash Volume (μL):** Set the wash solution volume to be dispensed per well, from 50μl to 2000μl, in increments of step by 50μl. The default is 300ul.
- **Wash Cycles:** Select the number of times the plate will be washed, from 1 to 99. The default is 2.
- **Soak Time:** Set the interval time between each wash step. The default is 0, the maximum is 99 minutes. Set in increments of 1 second.
- **Shaking:** This can be set to Off, Slow, Medium or Fast. The default is OFF. The shaking speed can only be set when the soak time > 0.

Shaking speed	amplitude	speed
slow	8mm	1Hz
medium	8mm	5Hz
fast	8mm	10Hz



Note: Set the shaking speed considering the volume and viscosity of the liquid in the wells, take care that the solution will not splash out of the wells during shaking.

- **Wash Mode:** Set the wash mode for Full Plate or Column. The default is Full Plate.
 - **Full Plate:** In Full Plate mode, liquid will be dispensed into all selected columns across the plate, there will be a pause for the soak/shake, then liquid will be aspirated from all selected columns.
 - **Column:** In Column mode, selected columns will be washed individually. Liquid will be dispensed and then aspirated from each selected column, and repeated on that selected column if multiple wash cycles are set, then the washing will advance to the next column.
- **Suction Time:** Set from 0s to 10s, in 0.1s increments. The default is 2s. If the Suction Time is set

to 0, the plate wells will be left full of wash solution (there will be no aspiration of the liquid at the end of the run).

- **Aspiration Points:** This can be set for 1 position, 2 positions or 3 positions to maximize the aspiration of liquid in the wells. The default mode is based on the well type selected.
- One position: There is one aspiration position in the center of the well.
- Two positions: There are two positions, left and right on the well bottom.
- Three positions: There are three positions, left middle and right.

Well type	Aspiration Point Settings		
	One Position	Two Positions	Three Positions
Flat type	Optional	Default	Optional
U type	Default	Not Optional	Not optional
V type	Default	Not Optional	Optional
C type	Default	Not Optional	Not optional

- **Columns:** Use the number buttons on the keyboard to choose the plate columns which need to be washed (Figure 26).
 - When using the 1X8 channel wash head use numbers 1 to 8 to select the columns for washing.
 - When using 1X12 channel wash head, use letters A to H to select the columns for washing.
 - Pressing the number or letter for a row a second time will cancel the selection.
- **Save:** Press the F3 button to **Save** the new program.`

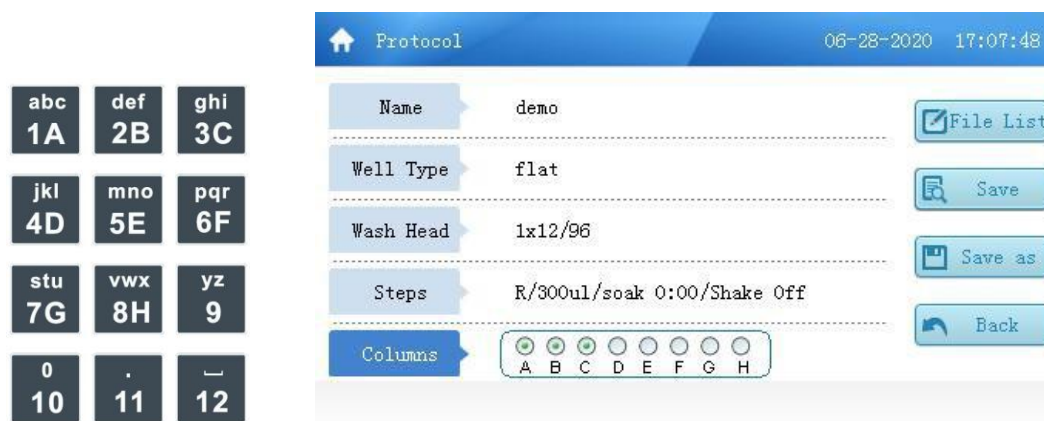


Figure 26: Protocol

Running a wash protocol

Note: Before running a wash protocol, make sure that the dispensing lines and washing heads are properly purged and free of bubbles. Use the Rinse function to purge the dispensing lines to be used.

Also make sure that the Purge Volume in the settings menu is set appropriately. Make sure that all bottles to be used have their sensors enabled, and if different protocols will be used for washing from multiple bottles, set the Purge at Power On to “multiple”.

- Select a protocol from the Protocol file list (see Chapter 5, Protocol File List) or setup a New Protocol (see Chapter 7, Creating a new wash protocol)
- Install the 96 wells plate on the plate holder, make sure the position and orientation matches the wash head setting.
- When using the 1×8 wash head, the A1 position on the plate should be to the left upper corner and when using the 1×12 wash head, the A1 position on the plate should be too the left lower corner.
- Select the rows to wash (if required to change)
- Push the Start/Pause button.

Wash head type	Plate type	Plate Orientation
1X8 channel	96 wells	Horizontal
1X12 channel	96 wells	Vertical

The Washing screen will appear and show the status of the running wash protocol (Figure 27):

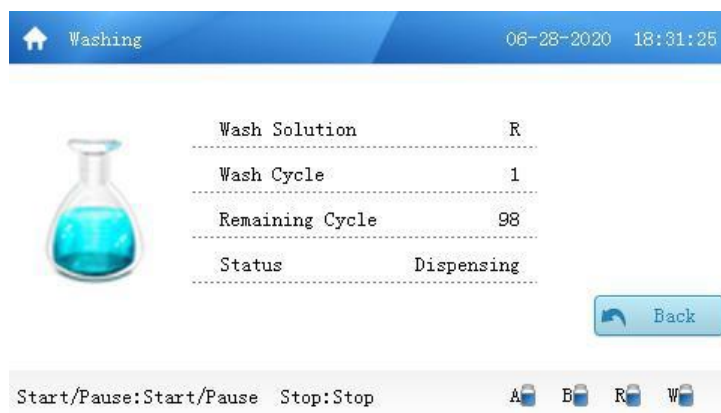


Figure 27: Washing

Cancel a run

If any errors occur during a wash run, the instrument will automatically stop, and an error warning will appear on the display.

Pressing the “Stop”

button will also stop the instrument.

Fluid level warning

During a programming run, a warning window at the bottom of the display shows fluid level status of each bottle [(A,B,R and W) Figure 28], the sensors in the bottle can detect fluid level automatically when the program is running. If the relevant icon turns red, please empty or fill the bottle as needed.



Figure 28: Fluid level warning

Fluid Detection for Bottles A, B, and R

- When bottles are full, the icon is blue
- When bottles are empty or the sensor is disconnected, the icon is red
- If the sensor is turned off in the settings menu, the icon is yellow

Fluid level detection for Waste Bottle W

- When the waste bottle becomes full, the icon is red
- When the waste bottle has space, the icon is blue

A wash protocol run can be stopped at any time by pushing F4 “Back” button, or the run can be paused by pressing the Start/Pause button.

- At the end of the wash protocol the micro plate can be removed.
- It’s recommended to rinse/purge the tubing after use.

Priming:

At the start of a new wash program run, the instrument will initiate a purge to clear out the tubing, remove air bubbles, and fill the dispensing tubing and wash heads with the buffer selected for the wash program.

The purge volume can be set in the Setting menu. The default is 50ml.

When the instrument and tubing is first connected, additional priming may be required to eliminate all of the air bubbles. This can be done using the Rinse function:

Using Rinse function to prime the tubing and wash heads

Starting from the Maintenance/Wash interface, press the Rinse button on the panel. This will initiate a priming rinse of the selected tubing (from bottle A, B, or R) and will run for the selected time. It may be necessary to run the Rinse function with all of the solutions used to fully purge the tubing.

Pressing the “Rinse” button from the Protocol interface will open the Maintenance/Wash interface. Press the “Rinse” button again to initiate the rinse.

Importing, Exporting and Deleting Programs

Import programs from a USB flash drive

- Insert the USB flash drive
- From the Program File List interface, press the F3 button (Impt&Expt). The below dialog box will be displayed (Figure 29).



Figure 29: Importing/Exporting data files from the instrument

- Push the F1 button on the panel to enter the import interface. Protocols files stored on the USB drive will be displayed.
- Select the protocol to import, and then press F1 to import (Figure 30)

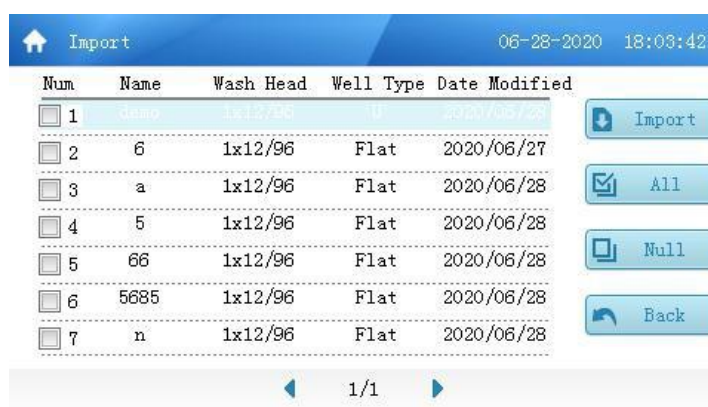


Figure 30: Importing files to USB drive

Export protocol

- Insert a USB flash drive
- From the Program File List interface, press the F3 button (Impt&Expt) on the panel and a dialog box will open stating "USB Drive Found".
- Press the F2 to enter the export interface, and the programs stored in internal memory will be displayed.

- Select the protocols to export, then press F1 to complete the export to the USB flash drive.

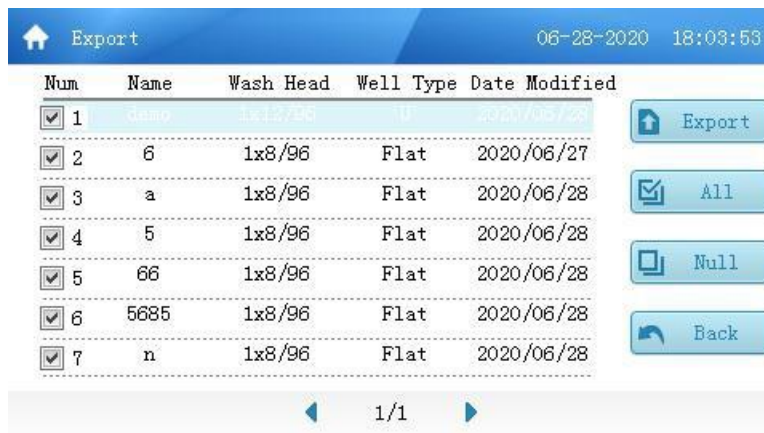


Figure 31: Exporting files to USB drive

Deleting Programs

- From the Program File List interface, highlight a protocol to delete, and press the F2 button (Delete) to delete the file. Demo protocols cannot be deleted.

Power off

Steps for Powering off the instrument:

- Remove the plate from the plate holder.
- Rinse the tubing with rinse solution (it is recommended to use bottle R for rinsing, and this bottle to be filled with distilled water). From the Protocol interface, press "Rinse", and select rinsing from bottle R.
- It is always recommended to run the rinse program when work with the instrument is finished and before powering off. This will keep the wash channels clean and prevent clogging.



Attention: If the wash head is not cleaned regularly between uses, the thin dispensing tubes on the wash heads can become clogged, and repair or replacement may be required. The included cleaning tool may also be used to clear clogged tubes.

- If the machine is not used for a long time, it is recommended to run the Rinse cycle, disconnect the tubing from the bottles and the instrument, and run the machine to clear the liquid out of the internal tubing lines.
- Turn off the power using the power switch on the rear of the instrument.
- If any buffers or infectious liquid has come in contact with the external surfaces of the instrument, it is recommended to clean and sterilize using 70% alcohol.

Warning: The wash head and surfaces of the plate holder may be contaminated once instrument has been used.

Warning: When handling the waste solution, please wear gloves, goggles and protective clothing to avoid skin contact.

Routine Cleaning

Tubing maintenance

- The Rinse function can be used to clean out the tubing.

Wash head maintenance and cleaning

- Remove the wash head and detach the silicone tubing, remove the sealing screws at the ends of the wash head, submerge the wash head to into 75% alcohol to water solution. Use the included cleaning tool to clear out any debris in the suction needles (long) and dispensing needles (short). Alcohol can be pushed through the wash head openings using a syringe. Or use a soft brush to clean the inside of the openings.

Filter cleaning

- The circular filter assembly at the bottom of each dip tube in the reagent bottles can be removed for cleaning. Disconnect the silicone tubing from the filter assembly, unscrew the top portion of the assembly, and all parts can be cleaned using alcohol.

Plate Holder

- The base of the plate holder has a drain with a liquid collection tube. Distilled water can be added into the plate holder after use, and the liquid will be drained out automatically to the waste bottle during a Rinse procedure. Take care not to allow any solid materials or debris to enter the drain hole, or the drain could be blocked.

Troubleshooting

No.	Faulty phenomenon	Possible Causes	Solution
1	Display not lit when powered on	Power connection	Check the power connection
		Fuse blown	Replace the fuse
		Switch damaged	Change the switch
		Screen damaged	Contact Service
2	Buttons not reacting	Control panel damaged	Contact Service
3	One of the rows over filling with liquid	Wash head blocked	clean the wash head with included cleaning tool
4	Plate wells over filling	Wash head blocked or pipeline aged.	replace the pipe or clean the needle
5	Noisy operation	Bearing damage	contact Service

6	Wash head needles touching the plate	Position settings for wash head not correct	calibrate the wash head in the maintenance setting
7	Liquid dispensed into the plate holder	Plate is not positioned correctly per wash head selected	Adjust the direction of the plate
		The wash head is not positioned correctly	Check the wash head, make sure the correct wash head matches the program.
8	Liquid dispensing or suction problem	Pump is broken Air pipe is not well connected Solenoid valve broken	Insert the air pipe again, screw the bottle cap tightly, or replace the cap seal.
9	No liquid suction	Pump is damaged Tubing is not well connected Air leakage from the bottles	Insert the air pipe again, screw the bottle caps tightly, or replace the cap seal.
10	Liquid splashing out of the plate	The liquid volume is set too high or shaking speed is too fast.	reduce the liquid volume or lower the shaking speed

Repair

Encountering problems

For inquiries on the repair and maintenance of the instrument, please contact your local VWR service center for assistance.

User Replaceable Accessories and Spare Parts

Description	Quantity	Cat. No.
VWR MANIFOLD 12-CHANNEL	1	VWRI210-000153
VWR MANIFOLD 8-CHANNEL	1	VWRI210-000154
VWR WASH BOTTLE ASSEMBLY	1	VWRI210-000155
VWR WASTE BOTTLE ASSEMBLY	1	VWRI210-000156

Technical service

Web Resources

Visit the VWR website at www.vwr.com for:

- Complete technical service contact information
- Access to the VWR Online Catalogue, and information about accessories and related products
- Additional product information and special offers

Contact us For information or technical assistance contact your local VWR representative or visit. www.vwr.com.

Warranty

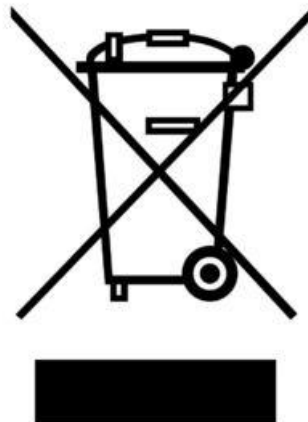
VWR warrants that this product will be free from defects in material and workmanship for a period of two (2) years from date of delivery. If a defect is present, VWR will, at its option and cost, repair, replace, or refund the purchase price of this product to the customer, provided it is returned during the warranty period. This warranty does not apply if the product has been damaged by accident, abuse, misuse, or misapplication, or from ordinary wear and tear. If the required maintenance and inspection services are not performed according to the manuals and any local regulations, such warranty turns invalid, except to the extent, the defect of the product is not due to such non-performance.

Items being returned must be insured by the customer against possible damage or loss. This warranty shall be limited to the aforementioned remedies. IT IS EXPRESSLY AGREED THAT THIS WARRANTY WILL BE IN LIEU OF ALL WARRANTIES OF FITNESS AND IN LIEU OF THE WARRANTY OF MERCHANTABILITY.

Compliance with local laws and regulations

The customer is responsible for applying for and obtaining the necessary regulatory approvals or other authorisations necessary to run or use the Product in its local environment. VWR will not be held liable for any related omission or for not obtaining the required approval or authorisation, unless any refusal is due to a defect of the product.

Equipment Disposal



This equipment is marked with the crossed out wheeled bin symbol to indicate that this equipment must not be disposed of with unsorted waste.

Instead it's your responsibility to correctly dispose of your equipment at lifecycle -end by handling it over to an authorized facility for separate collection and recycling. It's also your responsibility to decontaminate the equipment in case of biological, chemical and/or radiological contamination, so as to protect from health hazards the persons involved in the disposal and recycling of the equipment. For more information about where you can drop off your waste of equipment, please contact your local dealer from whom you originally purchased this equipment.

By doing so, you will help to conserve natural and environmental resources and you will ensure that your equipment is recycled in a manner that protects human health.

Thank you

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