MERCK

User Guide

ReadyStream® System

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Contents

Carefully read the user guide and safety instructions before using the instrument.

Please keep these documents and safety instructions for further reading.

System overview

The ReadyStream® system is designed to facilitate work in microbiological culture media preparation and dispensing. The ReadyStream® dispensing unit is low in weight and can be easily moved on the bench or in a microbiological safety cabinet.

Safety symbols and instrument labels

Label	Designation	Description
	Safety symbol	Warning, do not insert or remove the tubing, do not insert fingers whilst the pump is in motion
	Internal safety symbol	Warning, surface may be hot during operation
	Internal safety symbol	Warning, risk of electric shock during operation
	Power switch label	Label for the unit’s main power switch
	Light switch label	Label for the unit’s switch to turn on the LEDs.
	Water inlet label	Point of connection for the unit’s water supply
	Barcode reader label	Connection port for the unit’s barcode scanner
	Power supply label	Connection port for the unit’s power supply. The system power cord is the main disconnect device. It must be easily accessible at all times. To prevent damage to the power cord or plug, it is recommended to pull the plug rather than the cord when you disconnect the system from a wall outlet or a power outlet. Make sure the power cord is not a tripping hazard. Make sure that it is not gripped too tightly at the plug, the outlet or the point where it is connected to the system.
	24 DC label	Connection for 24 volts peripheral

Specifications

Category	ReadyStream® system value/range
Catalog numbers	
Media unit Dispensing unit Standard bag holder Large bag holder	RDYSTRM10 RDYSTRM20 RDYSTRM30 RDYSTRM40
Distribution volume range	90 mL to 9 999 mL
Distribution volume accuracy	±2%
Distribution temperature range in heating mode	30–42 °C
Distribution temperature accuracy in priority temperature under optimal conditions[1]	±2 °C
Ideal functioning conditions of input water for optimal performance	Water quality deionized grade water according to ISO 11133 without particles >200 µm[2] Temperature: 20 °C ±2 °C Pressure: <3 bar Flow rate: >2 liters per minute[3]
Dispensing time for 225 mL (priority to speed, no heating)	<10 sec
Dispensing time for 3375 mL (priority to speed, no heating)	<2 min
Dispensing/distribution mode	Priority to speed/priority to temperature
Distribution flow rate[4]	0.5 to 2 liters per minute
In compliance with	ISO 7218:2024 ISO 6887-1:2017+Amd 1:2024 FDA-BAM/USDA EI 61010-1 UL 61010-1 In conformity with FCC, IC, and EC as a class B equipment
Connection	24 V jack output for accessory RS232 modified output to connect scanner RJ-45 output to connect media unit and dispensing unit
Max duration of one dispensing cycle in heating mode	20 min[5]

[1] In temperature priority mode, temperature accuracy is guaranteed above 200 mL.

[2] If needed, install the provided mesh strainer on the inlet tubing, respecting the flow direction indicated by the arrow on the body. Replace the strainer mesh once a year.

[3] Ensure the deionized water production system and distribution loop can supply the connected instruments; the media preparation unit can also be connected to a container of deionized water. Please make sure the container is clean and free of particles.

[4] In temperature priority mode, the flow rate is automatically adjusted by the instrument to keep the target temperature. In some geographies, the maximum flow rate for heated media dispensing may be lower due to electrical limitations.

[5] Corresponding to 9999 mL delivered at 0.5 L/min.

System components

Description of the ReadyStream® media unit

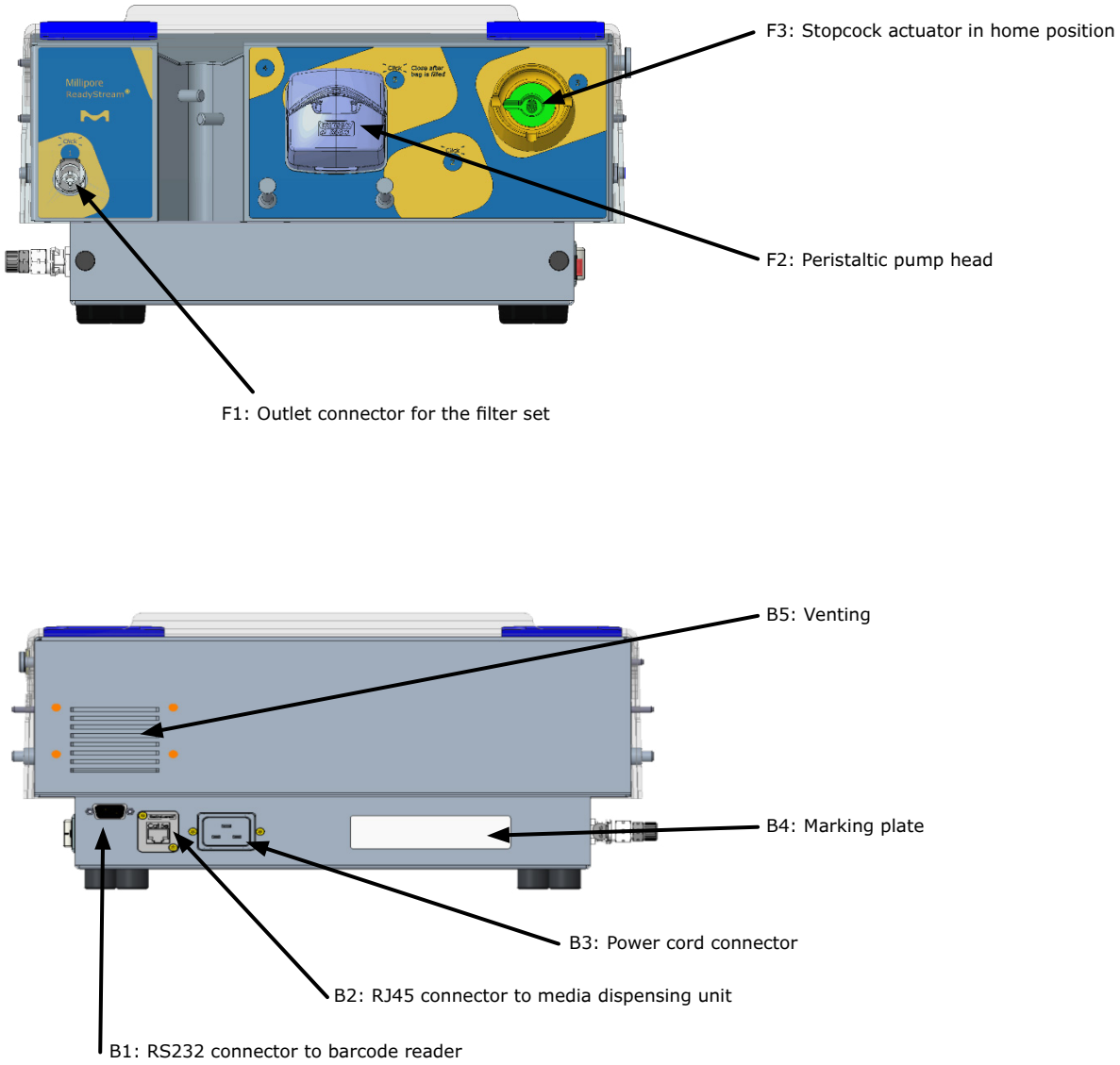


Figure 1: Front and back views of the ReadyStream® media preparation unit

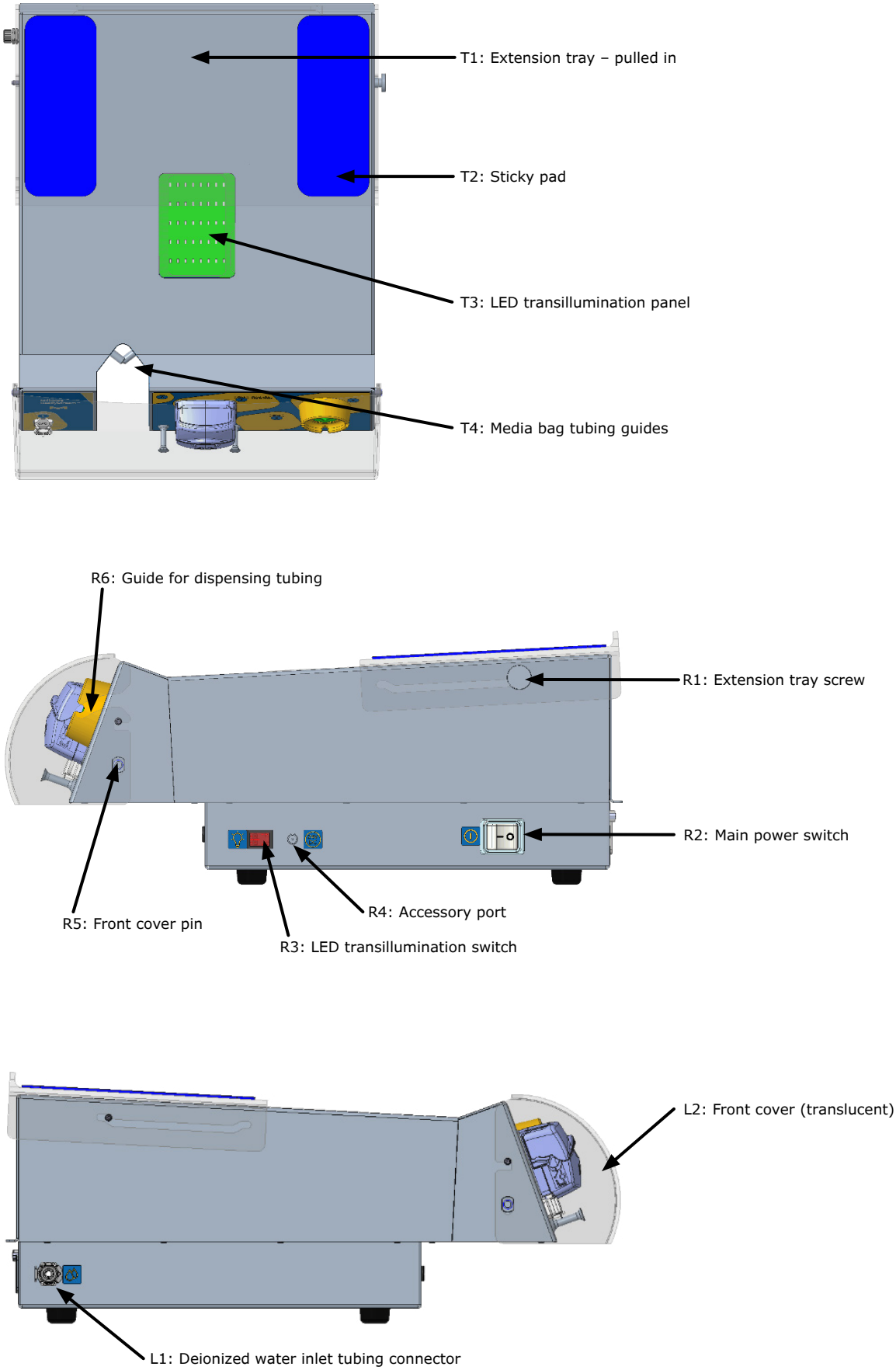


Figure 2: Upper, right and left views of the ReadyStream® media preparation unit

Description of the ReadyStream® dispensing unit

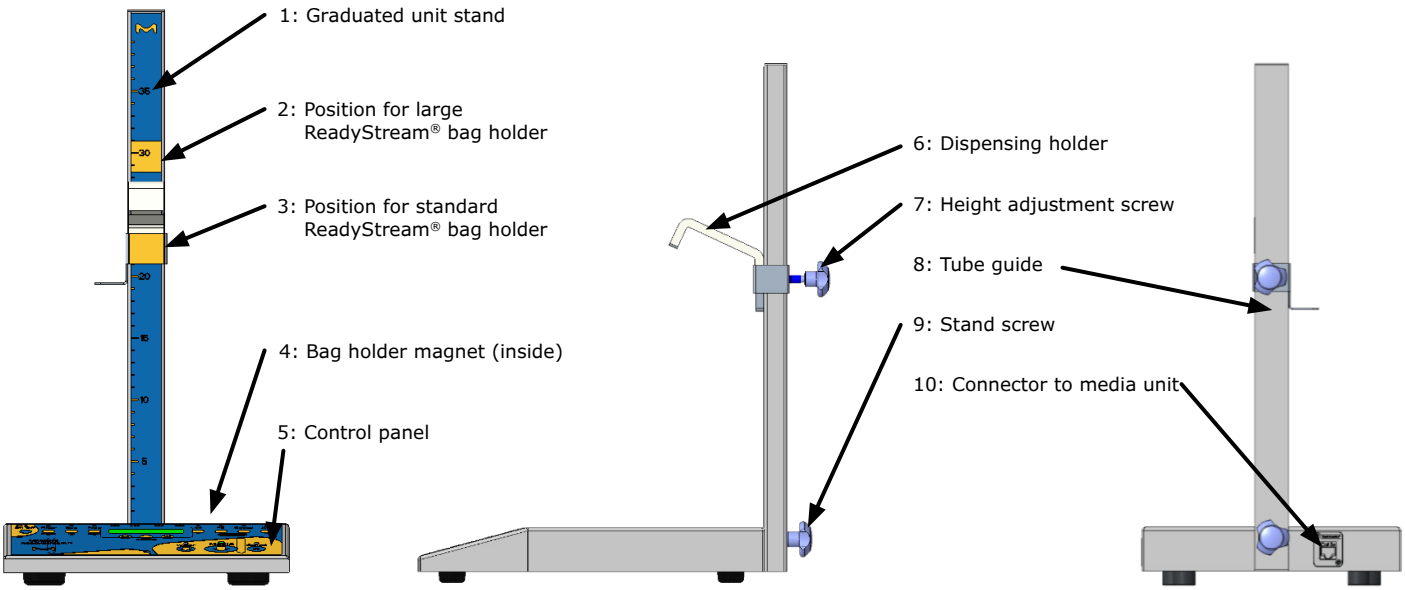


Figure 3: Views of the ReadyStream® media dispensing unit

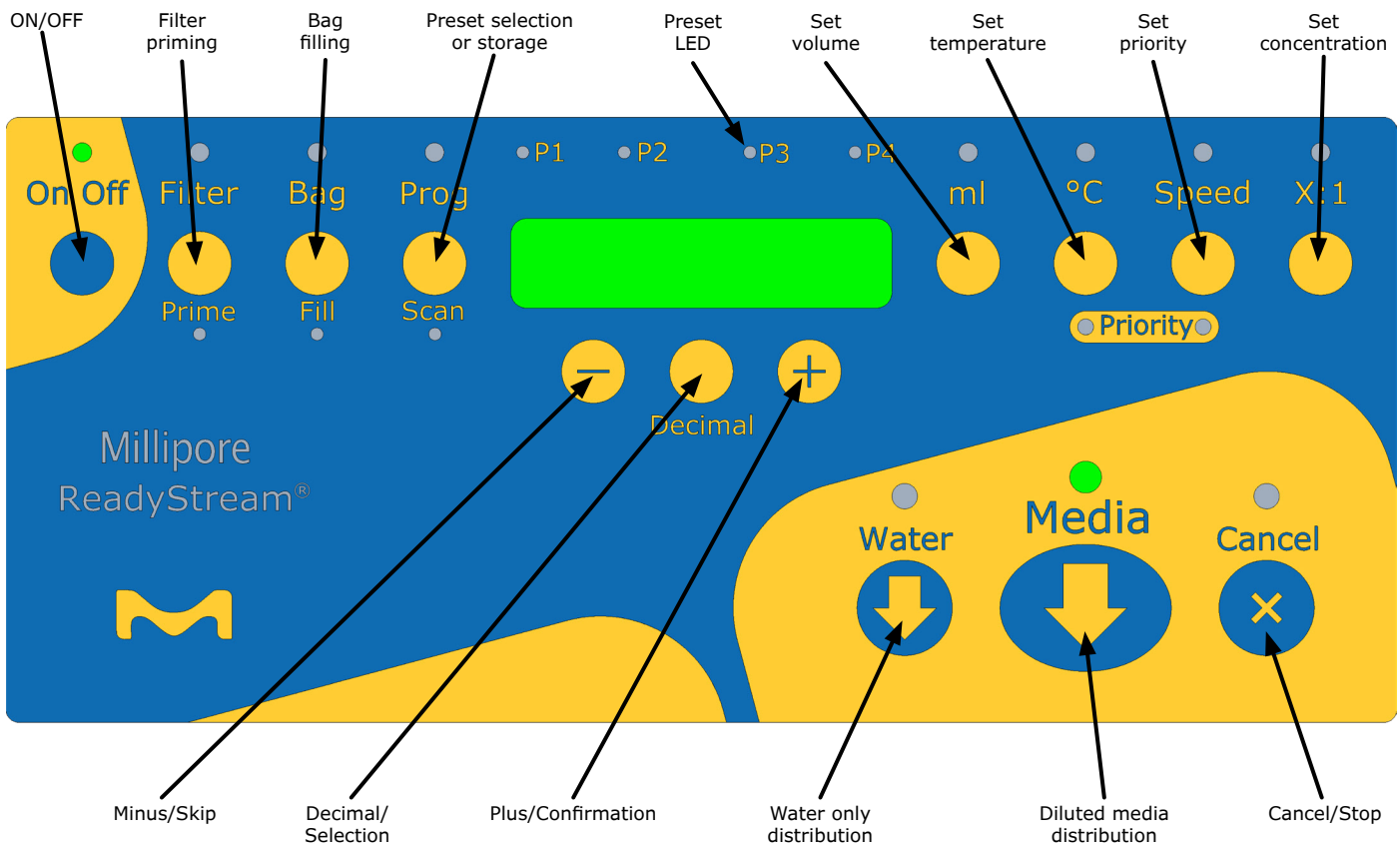
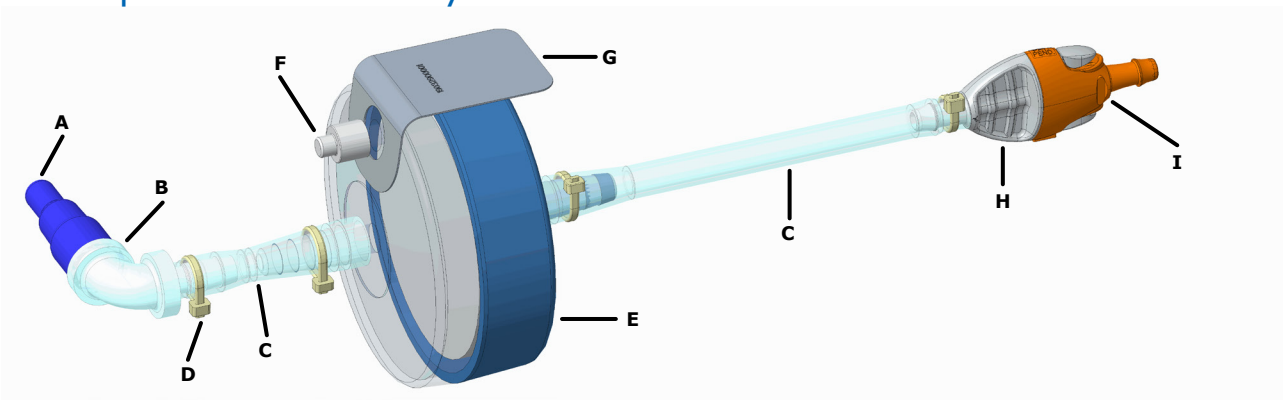


Figure 4: ReadyStream® media dispensing unit control panel

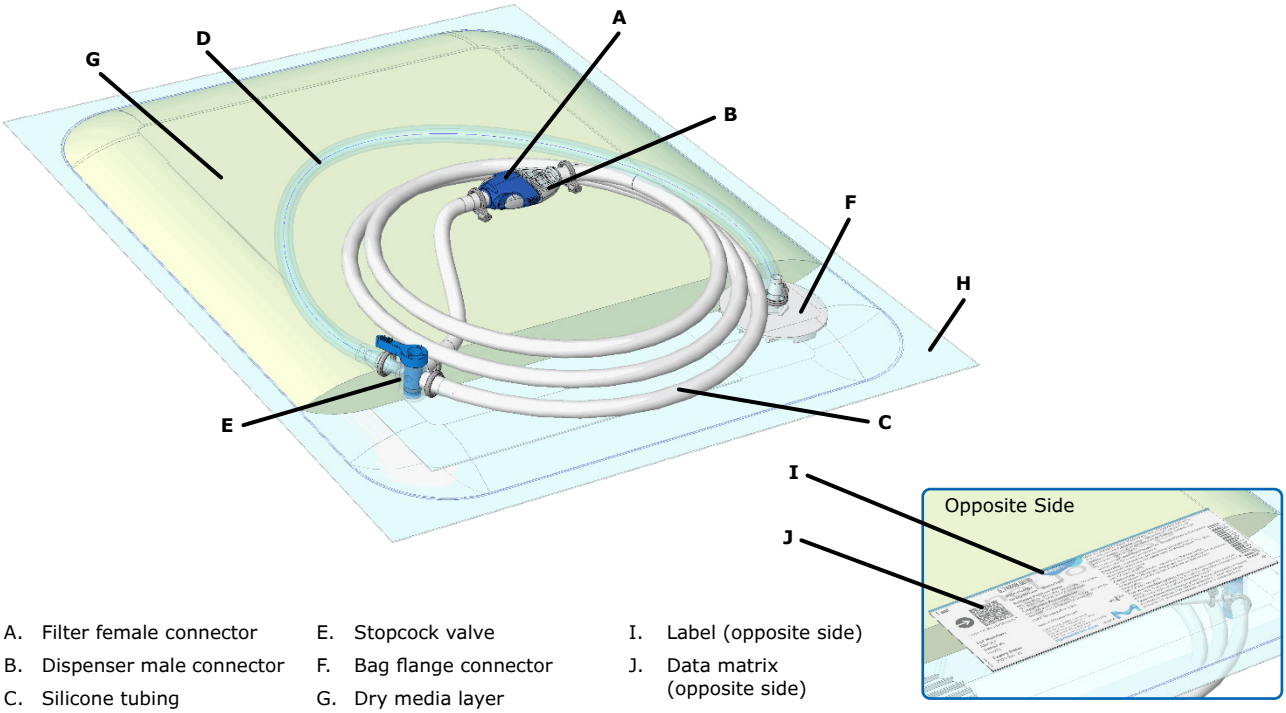
Description of the ReadyStream® filter set



A. Inlet blue cap
B. Male inlet connector
C. Silicone tubing
D. Cable ties
E. 0.22 µm membrane filter
F. Filter vent
G. Label
H. Male outlet connector
I. Outlet orange cap

Figure 5: Description of the ReadyStream® filter set

Description of the ReadyStream® media bag



A. Filter female connector
B. Dispenser male connector
C. Silicone tubing
D. Silicone tubing for peristaltic pump
E. Stopcock valve
F. Bag flange connector
G. Dry media layer
H. Pillow bag
I. Label (opposite side)
J. Data matrix (opposite side)

Figure 6: Description of the ReadyStream® media bag

Setting up the instrument and consumables

Unpacking the instrument

Remove the instrument components from all packaging without damaging the packing materials.

Save the original packaging materials for use if the instrument must be shipped for maintenance/repair at a later date.

The shipping kit contains the following items:

- One media preparation unit box with:
  – One media preparation unit assembly
  – One barcode scanner
  – One barcode scanner stand
  – One RS232 cord for barcode scanner
  – One RJ45 cable (not suitable for Ethernet)
  – One inlet water tubing
  – One tubing for water outlet
  – One USB card with the user manual and safety instructions
- One dispensing unit box with:
  – One media dispensing unit base
  – One USB card with the user manual and safety instructions
  – One stand with dispensing arm
- One standard bag holder box
- One large bag holder box
- One power cord
- One mesh strainer
- One sanitization kit

Installing the instrument

Install the media unit on a bench or on a trolley supporting a mass of 30 kg.

Install the dispensing unit close to the media unit (less than 1 m distance). It is also possible to position the dispensing unit in a laminar flow cabinet.

Connect the power cord to the back connector (Figure 1, B3) and to a wall socket. The cable must be easy to unplug in the unlikely event of an issue with the instrument.

Connect the provided RJ45 cable (Logo on the top) to the dispensing unit connector (Figure 3, 10) and to the media unit connector (Figure 1, B2).

To disconnect the RJ45 cable, press the button on the RJ45 socket.

Never connect the RJ45 connector of the media unit or the dispensing unit to a LAN, this may lead to malfunction of the network and of the instrument. The ReadyStream® cannot be connected to a network.

Connect the barcode reader to the media unit using the RS232 cable and then tighten the screws on the connector (Figure 1, B1).

Place a vessel (≥1 L) on the dispensing unit. (Figure 3, 4).

- **Always place the bag in the holder. Alternatively, position a vessel (≥1 L) instead of the bag holder to collect water dispensed during instrument set-up.**
- **Adjust the height of the dispensing arm to the bag holder size, using the screw at the back of the dispenser.**

Before the first use, go through a sanitization procedure by scanning the specific barcode and following the instructions on the screen (details in the maintenance section of this user guide on page 29).

The bag + sample + diluent must not exceed the authorized weight on the dispensing platform of 10 kg.

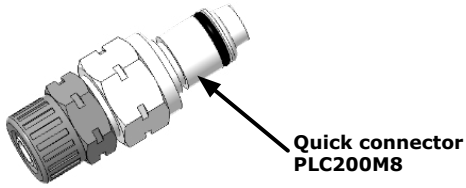
Do not apply shock or excessive pressure to the peristaltic pump and the valve actuator and ensure that there is no obstacle that might interfere with the front door.

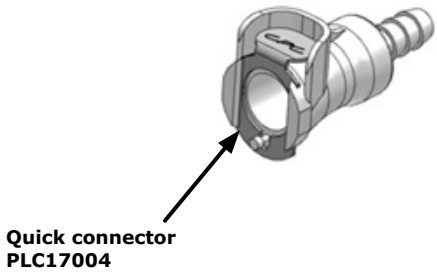
Water connection

Connect the water inlet tubing to the instrument via the connector on the left side (Figure 2, L1). Adapt the extremity of the water inlet tubing to the deionized water faucet using the required adaptors (female connector PLC17004 for the connection to the PLC200M8 connector on the inlet water tubing).

If the tubing of the water supply does not have the right size, a reducer can be used to fit the tubing to the size of the PLC17004 connector.

Alternatively, if no deionized water production system is available in the laboratory, the water inlet tubing can be connected to a deionized water container made of suitable material (e.g. PE) to meet the ReadyStream® water requirements. In this setup a pump needs to be added between tank and ReadyStream® system in order to obtain the required inlet flow rate.





- **If using a container, check the level of the remaining water to prevent the instrument from running without water.**
- **Use pressure resistant tubing only.**
- **Turn off the tap when the ReadyStream® system is not used.**
- **Damage can occur if the system runs without water.**
- **Verify that the pressure, flow rate and temperature of the deionized water loop are within the range of the operational conditions of the ReadyStream® instrument, see safety instructions. If needed add a pressure reducer valve (e.g. ZFMQ000PR).**
- **If several instruments are connected to the water loop, ensure the flow rate is sufficient to allow the ReadyStream® media unit to dispense at the required flow rate.**

Connecting the ReadyStream® instrument to the water supply is end-user's responsibility. Millipore S.A.S. expressly disclaims any liability of any nature whatsoever arising from or related to the connection of this instrument to a water supply.

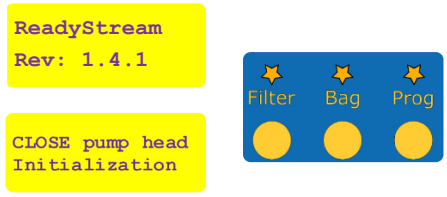
Powering the instrument ON and system initialization

Use the switch on the right side of the media preparation unit to power the instrument (Figure 2, R2).

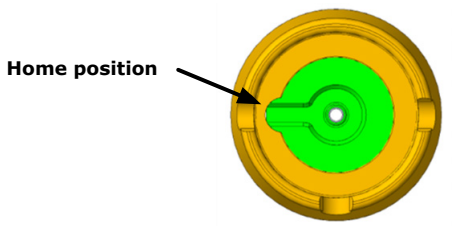
The software version is displayed (see example on the right), and all LEDs light up for 5 seconds. Then the valve actuator moves and the display shuts down.

When starting the instrument, the peristaltic pump must be closed for initialization. If not, the user will be prompted to close the pump head, and the "Filter", "Bag" and "Prog" LEDs will blink in orange.

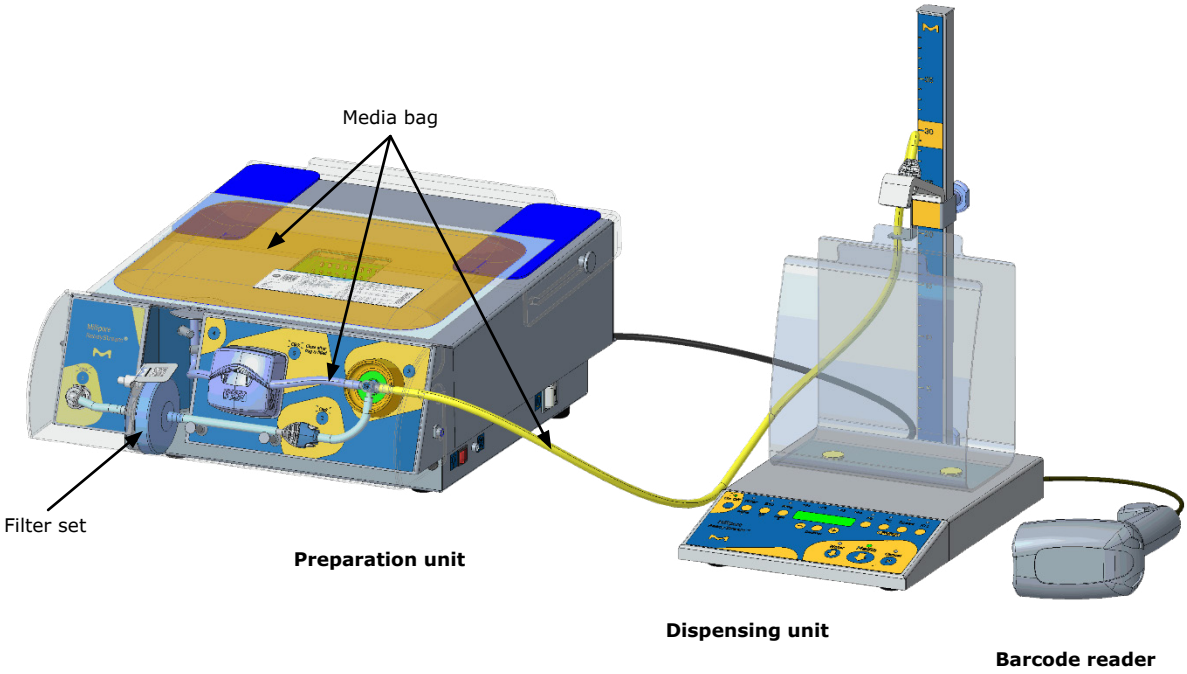
Press the ON/OFF button on the media dispensing unit to start and initialize the instrument.



- **In order to expand the battery lifetime of the media unit, leave the main power switch turned on and keep the instrument in sleep mode by using the "ON/OFF" button on the dispensing unit.**
- **During initialization do not try to open the pump head.**
- **During initialization, the stopcock actuator (Figure 1, F3) will turn to the home position. Do not touch the moving part.**



Installation of the consumables and calibration



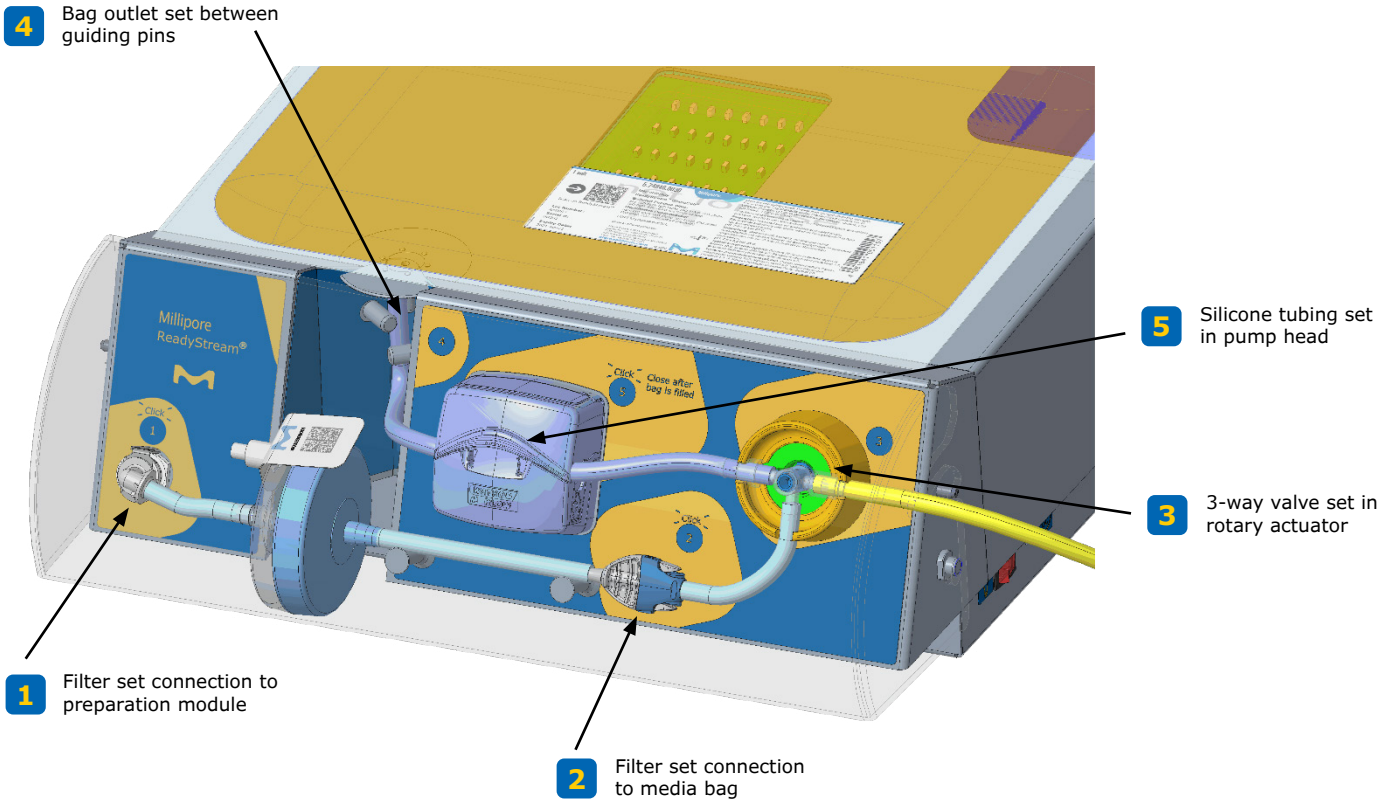
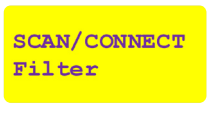
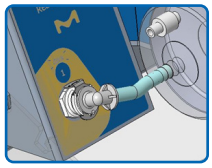


Figure 7: Step by step installation of the consumables

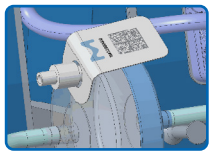
After initialization of the pump and valve actuator, the instrument requests to connect the filter. The “Filter” LED on the control panel of the dispensing unit will blink orange to indicate that an action is ongoing with the filter.



Remove the protective blue cap on the inlet extremity of the ReadyStream® filter and connect it to the outlet of the preparation unit (step 1). A “click” sound signals that the connector is correctly inserted.



- **Keep the orange cap on the outlet of the filter to prevent accidental contamination of the outlet.**
- **Make sure the O-ring on the filter connector remains in place during the connection.**
- **In case the tubing is crushed, press with your finger to re-open it.**
- **Store the blue cap properly for later use.**



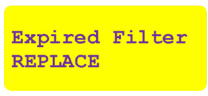
Using the barcode reader, scan the data matrix on the ReadyStream® filter set's label.

In case of a new filter, the maximal number of connections to media bags (e.g. C20), the maximum volume of water (e.g. V600 Liters), and lifetime (e.g. 30 days) are displayed. This information is stored in the instrument.

After scanning a filter already registered by the system previously, the number of remaining connections to media bags (e.g. C6 connections), the remaining volume of water (e.g. V224 Liters), and remaining lifetime (e.g. 15 days) are displayed.

- **To ensure traceability, do not use a filter set on different ReadyStream® instruments.**
- **Please ensure the media bag remaining volume and lifetime will be sufficient before to be connected to the filter.**
- **Do not reuse an expired filter set**

If the shelf life, lifetime in use, maximal volume, or number of connections of the filter is exceeded, or if a wrong item is scanned, an error message will be displayed, and the “Filter” LED will blink red for 3 seconds to indicate the error. Then the user is again prompted to scan and connect a filter.

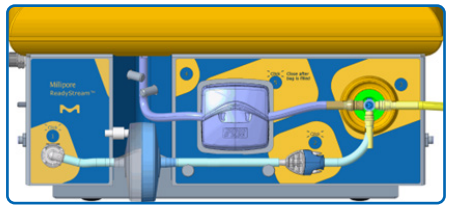


When an authorized filter is scanned, the “Filter” LED turns green and the user is then prompted to connect the media bag. The “Bag” LED blinks orange to indicate that an action is ongoing with the media bag.

- **Do not use scissors to open the outer packaging.**

Tear open the outer packaging by using the easy opening feature to take the media bag out of the aluminum bag. Then remove the adhesive tape that maintains the tubing.

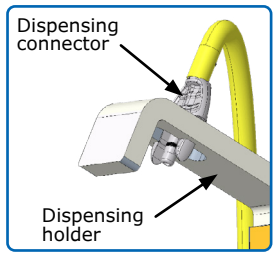
Place the media bag on the top of the ReadyStream® media preparation unit, with the product label facing upwards. When using a 100 L ReadyStream® bag, extend the plastic tray at the back on the instrument (Figure 2, T1).



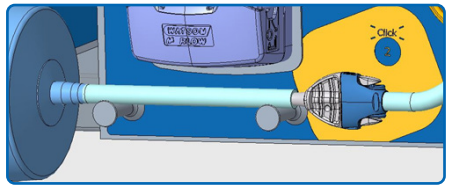
Aseptically connect the ReadyStream® media bag and the filter set.

Follow the steps on the ReadyStream® media preparation unit's front panel sticker:

- Step 1: Connect the filter to the instrument.Disconnect the gray and blue connectors of the media bag (Figure 6, A&B) and insert the gray dispensing connector into the holder of the dispensing unit.

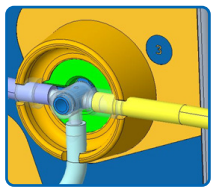


- Step 2: Remove the orange cap from the outlet of the filter set and store it in a sterile container for re-use.
  Connect the blue connector of the media bag to the gray connector of the outlet of the filter set. A "click" sound indicates that the connectors are properly in place.

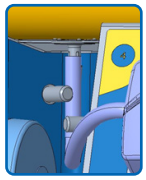


Connect under clean conditions. Do not touch the inlet and outlet of the connectors with your fingers or with contaminated material to prevent any risk of contamination.

- Step 3: Insert the media bag 3-way valve into the stopcock actuator of the media unit.



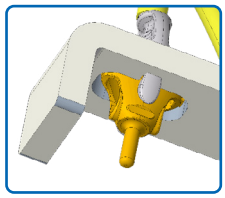
- **Fully insert the stopcock without using force.**
- **In case the tubing is crushed, press with your finger to re-open it.**



- Step 4: Position the bag flange and the tubing in the guiding pins.

- Step 5: Position the tubing through the peristaltic pump without closing the pump head. Make sure it’s in down position. If his is not the case contact technical support.

Options: Re-cap the gray dispensing connector with the orange cap on the dispensing unit. The orange cap is to be inserted perpendicularly to the gray connector at the bottom side of the dispenser arm.



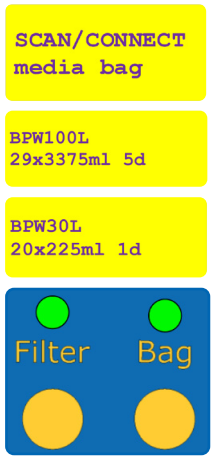
Do not run the instrument with the orange cap connected to the dispensing outlet.

When the ReadyStream® media bag is connected to the instrument, scan the label.

If a new bag is used, the media type (e.g. BPW100L), the maximum number of dispensations (e.g. 29) of a defined volume (e.g. 3375 mL), and the lifetime after reconstitution (e.g. 10 days) are displayed. This information is stored in the instrument.

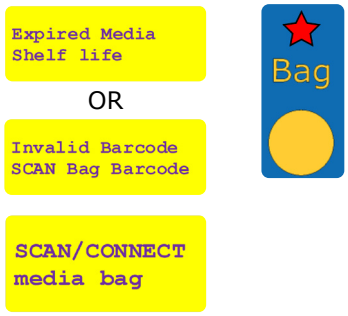
If the media bag has been previously used on the same instrument, the remaining volume of media (e.g. 20 x 225 mL), and the remaining lifetime (e.g. 1 day) are displayed.

"Filter" and "Bag" LEDs should be green at this stage.



- **During the process, pressing [CANCEL] will restart the bag setup.**
- **To ensure traceability of media consumption and remaining shelf life, do not use a media bag on different ReadyStream® instrument.**

If the shelf life of the media bag is exceeded, or the bag is empty or a wrong barcode is scanned, an error message will be displayed, and the "Bag" LED will blink red for 3 seconds and the user will be asked to scan and connect a media bag.



In case the remaining filter capacity is insufficient to fill the media bag, a message is displayed to notify the user accordingly and to request a filter change.

Priming of the filter set

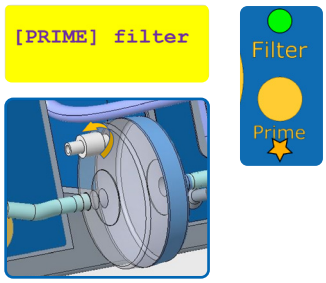
For optimal performance, any air in the inlet tubing, in the instrument, and in the filter set must be removed.

- **Ensure the media unit is connected to a water source of sufficient flow rate or, alternatively, to a large container of deionized water connected to ReadyStream® system through a pump.**
- **During priming, excess water will be dispensed through the gray dispenser on the dispensing unit. Place a bag in the bag holder or position a container (≥1 L) below the dispenser to collect the water.**

Following the media bag installation on the instrument, the user is prompted to prime the filter.

To remove air trapped in the filter, open the vent port on the filter by turning slightly (one turn counter-clockwise).

Press the [PRIME] button, indicated by the "Prime" LED blinking orange.

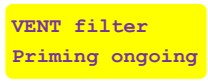


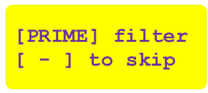
- **For more efficient priming, open the vent before pressing [PRIME]. Close the vent when the water level reaches the vent.**
- **Excess water dripping from the vent will be retained in the front door. Alternatively place a clean tissue around the vent to collect the droplets.**

While the unit is dispensing water, the “Prime” LED will blink green.

After each priming cycle, the average flow is displayed.

The priming process is completed when no air bubbles are present anymore and the water pump has reached the expected flow rate of 1450 mL/min. Then the [-] will appear on the display. Pressing the [-] button exits the priming sequence. Skip priming only when no air bubbles are expelled from the instrument to the filter, and the filter is at least 95% filled with water.



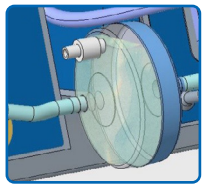


- **For efficient priming, the flow rate changes several time during the priming process.**
- **When re-using a filter, or re-connecting a filter attached to a media bag previously fitted to the instrument, perform 5 priming cycles to flush the filter and tubing with about 1 liter.**

After priming, the “Prime” LED is solid green to indicate that the instrument is ready for reconstituting the dehydrated media in the bag.

In case of emergency, press [CANCEL] to stop the priming process.

When connecting to a water loop for the first time, or when pumping from a water container, several priming steps may be required to purge all air from the inlet water tubing, the instrument, and the filter.

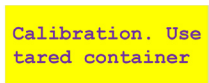


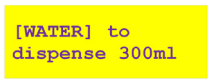
Water pump flowmeter calibration

The flowmeter calibration is automatically requested every 7 days. For earlier calibration, press the [WATER] button for 3 seconds after priming to enter the flowmeter calibration mode.

Calibration is performed at four flow rates and volumes to ensure accuracy:

Calibration step	Water volume (mL)	Flow rate (L/min)
1	300	0.5
2	300	1
3	500	1.5
4	750	2





Make sure that the container has a capacity of at least 750 mL and does not create splashes as that may impact the measured volume.

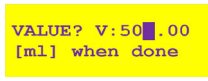
The water from calibration steps 3 and 4 will be warm.

Strictly follow instructions on the screen. Failure to do so may affect system performance.

Use a balance of sufficient resolution for precise weighing.

For each calibration step:

- Tare the container on a balance for weighing.
- Place the container under the dispenser.
- Press [WATER] to dispense the expected volume. The “Water” LED will flash green during the process.
- Weight the container with the dispensed volume when finished.
- Enter the measured volume on the dispensing unit control panel.



The “mL” LED flashes green.

The calibration value can be adjusted using the [+] or [–] buttons. Press the [DECIMAL] button to highlight the digit to modify. When properly set, modification is stored by pressing [mL].

The calibration range is ±5% of the target calibration value. If the weighed mass is below / above specification, please enter the lowest / the highest possible value into the dispensing unit. For example, if for the 300 mL calibration (calibration range 285 - 315), the weighed mass is 280 g, enter 285 and continue the calibration process.

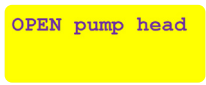
Upon completing one calibration cycle, initiate a new calibration by pressing and holding the [WATER] button for 3 seconds and enter the actual measured calibration value. Repeat this process until the mass is in the range of ±2% of the target calibration value

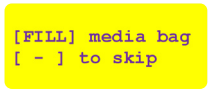
The proper execution of calibration is critical for the correct functioning and accurate dispensing of the ReadyStream® system. If you have any doubts about the calibration or if dispensing volumes are not precise, please initiate a new calibration by pressing [WATER] for 3 seconds.

Reconstitution of the media bag

The dry media bag needs to be rehydrated to convert the dry media into concentrated stock before further use. The peristaltic pump head must remain open during this filling step.

- If the pump head is closed, the “Fill” LED will blink red and the user is requested to open the pump head.
- If the pump head is open, the “Fill” LED will blink orange and the user is prompted to press [FILL] to reconstitute the media stock.



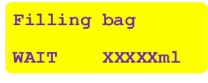


If the media bag was previously filled on another ReadyStream® instrument press [-] to skip filling. Filling a media bag twice will lead to leakage and a wrong concentration of the media bag stock.

For accurate filling of the bag, to achieve the right media concentration, a proper calibration is critical. If you have any doubts about the calibration, please initiate a new calibration by pressing [WATER] for 3 seconds.

The user is asked to confirm filling to begin by pressing [+]. The stopcock actuator will move, the water pump starts and the heaters turn on to reconstitute the media with preheated water.

While the media bag is filled, the “Fill” LED is blinking green and the remaining filling volume is displayed.



The media bag must be agitated by gently pressing all over the bag surface during the filling step. If needed, agitate the back of the bag to detach the media stuck on the film.

Never keep your finger on the valve actuator while it is moving.

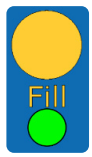
When pumping deionized water from a container, ensure enough water is available to cover the filling step (>3L for a 30L bag and >10L for a 100L bag).

Do not close the peristaltic pump head until the filling process is over. To prevent internal overpressure the system would stop dispensing, report an error and the media bag would need to be discarded.

Agitate the bag during the filling step.

In the unlikely event of an issue during media bag filling (e.g. leakage), press [CANCEL] to stop the water pump safely. The “Filter”, “Bag” and “Prog” LEDs will flash red. In such a case, filling cannot be resumed, and therefore the media bag must be discarded.

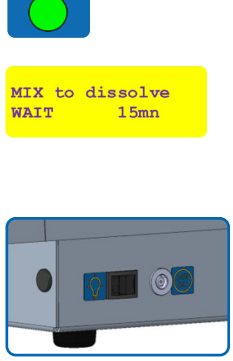
When the bag is fully filled, the “Fill” LED turns to solid green.



The “Bag” LED is blinking green and the user is prompted to agitate the granulated media with the added water.

The bag must be softly and continuously agitated a maximum of 2 min to speed up the dissolution of the granules.

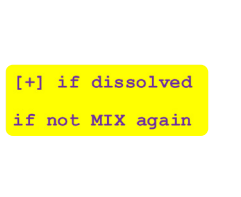
Use the side switch (Figure 2, R3) at the right side of the instrument to turn on the panel of LEDs to illuminate the media bag. Check that no clumps of media or large quantities of undissolved granules remain, otherwise continue to gently agitate the bag.



The initially turbid concentrated media will become clear during the remaining rest time indicated on the display.

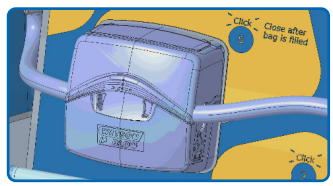
When the time has elapsed, the “Bag” LED will blink orange and the user is asked to confirm that the media is fully dissolved.

Carefully inspect the bag for undissolved media. Continue to softly agitate the bag if required until there is no granulated media left, then press [+].

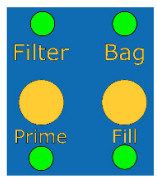


Do not confirm dissolution if any undissolved media remains, as this could lead to media of a wrong concentration being dispensed.

The peristaltic pump head has to be closed at this stage, after bag reconstitution is completed. Apply a little tension on the silicone tubing to make sure the tube is fully horizontal between the stopcock actuator and the pump before closing the head.



The “Filter”, “Prime”, “Bag”, and ”Fill” LEDs are all solid green at this stage to indicate that the filter is primed and the media bag stock is properly reconstituted.



Ensure the tubing is not pinched in the closed pump head (see page 16).

If the peristaltic pump head is not closed, the “Filter”, “Bag”, and “Prog” LEDs will all blink orange and the user is prompted to close the pump head.

Do not attempt to move the media unit with filled bag in place or connected to the deionized water loop, risk of flooding.

Calibration of the peristaltic pump

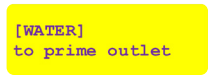
Following confirmation that the media bag stock is fully reconstituted, the instrument will automatically move on to the peristaltic pump calibration step once the pump head is closed.

To ensure precision in media dispensing, the peristaltic pump must be calibrated each time a new bag is installed on the instrument, or each time the pump head is opened.

Please note, when using a 100 L bag, after 50 L of media consumption, the system will ask to recalibrate the media pump again. This is to keep media dispensing accurate throughout the consumption of the 100 L media bag.

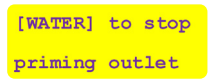
Calibration is performed by weighing a defined quantity of water dispensed by the instrument.

For precise calibration, the dispensing outlet tubing must be flushed to be free of any air bubbles. The “Water” LED will be blinking orange and the user must press [WATER] to start the water and media pumps filling the dispensing tubing with water.



Make sure to have a container/bag on the dispensing unit to collect the media being dispensed, and that the orange cap is removed.

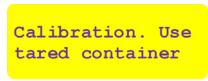
During priming, the “Water” LED will blink green.



When the tubing has been properly flushed, press [WATER] once more to stop the pump.

Make sure no air bubbles are visible in the tubing before stopping the pump.

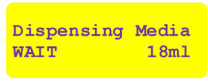
The user is then prompted to tare a container on a balance (not provided), and to position the container on the dispensing unit (container can also be a bag placed in the bag holder).



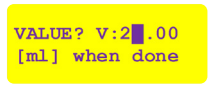
Alternating every 3 sec with

The “Media” LED will be blinking orange.

By pressing [MEDIA], the “Media” LED will blink green and a volume of about 20 mL be dispensed into the tared container.



When the “ml” LED is flashing green, the user is prompted to enter the volume dispensed (measured by weighing the container after dispensing) using the [+] and [-] buttons and the [DECIMAL] button to select the digit to be changed. Press [ml] to confirm.



The peristaltic pump will then be calibrated with this value.

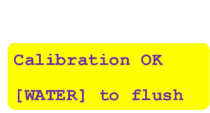
The value must be between 18 and 23. If not please check that the balance was properly tared and calibrated. If the value is still not in the range, ensure the tubing is properly placed in the pump head.

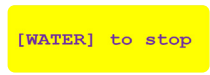
In case of an issue during a calibration step, press [CANCEL] to restart calibration or re-open the pump head.

An orange blinking “Water” LED informs you that a flushing step is required to remove the concentrated media remaining in the dispensing tubing.

Press the [WATER] button to start the flushing step.

When the “Water” LED is blinking green the user is prompted to stop the water pump.





Make sure to have a container on the dispensing unit to collect the dispensed water.

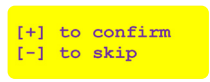
If for any reason the pump head is opened, the calibration of the peristaltic pump has to be repeated.

If the remaining media volume is insufficient for the calibration, the user is prompted to install a new bag which is initiated by pressing [BAG].

Water pump calibration status check

If flowmeter recalibration is due within 24 h, the system will propose to perform the calibration before entering the media dispensing mode. If recalibration is due within 1h, it is not possible to skip it.

Alternating with



If confirmed, the calibration is performed as per the workflow previously described (see "Water pump flowmeter calibration" section on page 18).

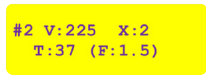
Water pump flow meter calibration can be initiated by pressing [WATER] for 3 seconds during routine usage whenever the instrument is not dispensing. This will reset the 7 day calibration timer.

If more than 100 L are dispensed per day, a manual recalibration after 500 L is recommended.

Routine usage

Definition of the dispensing parameters

The system dispenses media by mixing pre-warmed water with concentrated media from the media bag stock. Several parameters can be adjusted on the instrument depending on the culture media type and the application and are displayed on the screen when the system is ready to dispense:

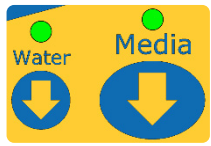


Display parameter	Description	Min. value	Max. value
#	Identifier of the selected preset	1	4
V:	Final volume to be dispensed by the system (in mL)	90 mL	9999 mL
T:	Final temperature of the dispensed volume in °C. When no heating is selected (T:0), final temperature is the temperature of the deionized water.	30 °C	42 °C
F:	Maximum flow rate of the water pump while dispensing in L/min. By default, the value is 2 L/min; it can be adjusted using a custom barcode (see section: Customizing parameters on page 24)	0.5 L/min	2 L/min
X:	Final concentration of the culture media dispensed by the instrument. By default, single strength (1 x) media is dispensed and X:1 is not displayed.	0.1 x	2 x
( )	If flow rate mode is set as the priority, the instant dispensing temperature is displayed in brackets. If temperature mode is set as the priority, instant dispensing flow rate is displayed in brackets.		

Selection of the dispensing parameters

Following peristaltic pump calibration and, if needed, water pump flowmeter calibration, the system is ready for dispensing.

The “Prog” LED will blink orange and the display will ask to scan a test data matrix or select the adequate preset program on the instrument for 5 seconds.



After the 5 seconds, the "Water" LED and the "Media" LED turn to solid green (unless pre-heating is needed), indicating that the system is ready to dispense either water or media according to the last dispensing parameters used.

There are 3 possibilities to modify the dispensing parameters:

- Use a preset program
- Scan a test data matrix
- Manually customize the parameters

Using a preset program

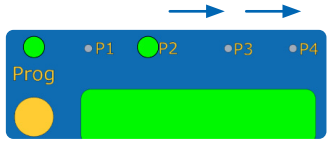
Four different preset programs are pre-installed in the instrument.

By factory setting, the default presets are:

- Preset #1: 90 mL, 1 x concentration, no heating, priority to speed (2 L/min)
- Preset #2: 100 mL, 1 x concentration, no heating, priority to speed (2 L/min)
- Preset #3: 225 mL, 1 x concentration, no heating, priority to speed (2 L/min)
- Preset #4: 3375 mL, 1 x concentration, 37 °C, priority to temperature

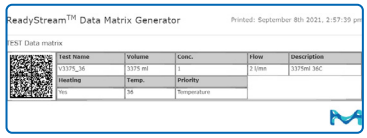
Press the [PROG] button to move from one preset to another. The LED corresponding to the selected preset will turn green and the respective parameters are displayed.

The system is ready to dispense media or water.



Scanning a test data matrix

The parameters can also be set by scanning a specific data matrix (see data sheet: ReadyStream® creating custom data matrix codes and section: Common test data matrices on page 29).

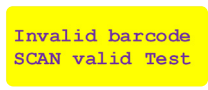


When scanning a test data matrix, the corresponding “Scan” LED turns green and the respective parameters are displayed.

The test name recorded in the data matrix and the other parameters (volume, temperature, concentration, flow rate) will be alternately displayed.

The system is ready to dispense media or water.

An error message is displayed and the “Scan” LED flashes for 3 seconds if the instrument cannot recognize the scanned barcode.

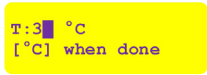


Customizing parameters

Dispensing parameters (from preset or scanned data matrix) can be modified anytime that the instrument is not dispensing.

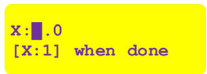
To modify the volume, temperature or concentration, the user can select the parameter to be modified by pressing either [ml], [°C] or [X:1].

The corresponding LED will be blinking in green to indicate editing mode.



On the display, the highlighted digit of the current parameter value can be adjusted using the [+] or [−] buttons.

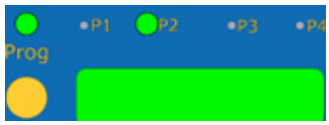
Use the [DECIMAL] button to move to another digit (from right to left).



Confirm the parameter value by pressing the respective [ml], [°C] or [X:1] button once more. The corresponding LED will go back to solid green upon exiting the editing mode.

The system is ready to dispense media or water.

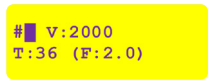
To indicate that the modified parameters no longer correspond to a preset or scanned program, the "Prog" or “Scan” LED is turned OFF.



Storing a customized program

Any customized program or scanned data matrix can be stored as a new preset. The maximum number of presets that can be stored is 4.

Set your parameters, and then enter the storage mode by pressing the [PROG] button for at least 3 seconds. The “Prog” LED will flash orange, and the preset slot can be selected using [+] and [−] buttons to scroll from P1 to P4.



Press [PROG] once more to store the current parameters into the selected preset.

Dispensing media

Position a container or the test bag in the holder on the dispensing unit. The test bag can be maintained by 2 sticky tack dots (not provided) positioned at the top of each internal face of the holder.

Before dispensing media:
– Ensure sufficient water supply.
– Remove the orange cap on the dispensing outlet if needed.
– Verify the absence of air bubbles in the dispensing tubing. If bubbles remain, dispense a volume of pure water to flush the tubing.
– Check that the filter is properly primed and the filter vent is closed
– Agitate the stock media bag to homogenize after long storage.

The height of the dispensing holder can be adjusted on the stand to accommodate for the bag holders and bag sizes. Standard positions for the standard and large bag holders are marked by yellow tags. The height may need to be adjusted to limit splashing, depending on the test bag size and position in the holder.

Press [MEDIA] to dispense media according to the displayed parameters of your sample. The system will determine the volume of concentrated media and the volume of water to be dispensed to achieve the determined final volume at the final concentration.

During the dispensing step, the “Media” LED will blink green, and the remaining quantity of final media to be dispensed as well as the current flow rate or water temperature will be displayed.

A message is displayed to indicate that dispensing is over, and that the test container can be removed.

After 5 seconds, the “Media” LED turns back to solid green and the program parameters are displayed.

The system is ready for further dispensing unless pre-heating is required (see below).

If the set dispensing volume exceeds the remaining filter capacity, alternating messages will be displayed to notify the user. The user is prompted to either adjust the dispensing volume or replace the filter.

Make sure to homogenize the test bag or container contents before incubation or further use because:
- The system will dispense first a mix of water and media, then finish with the remaining volume of water only.

- In heating mode, the system will compensate for the media bag temperature.

At the end of the day, switch off the dispensing unit by pressing the ON/OFF button. Do not turn off the main power switch at the media unit in order to conserve the battery inside the media unit.

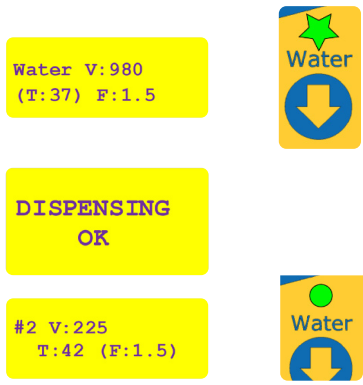
Dispensing water

It is also possible to dispense water using the same process as for media distribution. To do so press [WATER] to dispense water only according to the displayed parameters. The “Water” LED will blink green during the dispensing process, and the remaining volume of water to be dispensed and the current temperature or flow rate are displayed.

A message is displayed indicating that dispensing is over. The test container can be removed.

After 5 seconds, the “Water” LED will turn back to solid green and the program parameters are displayed.

The system is now ready for a further dispensing.

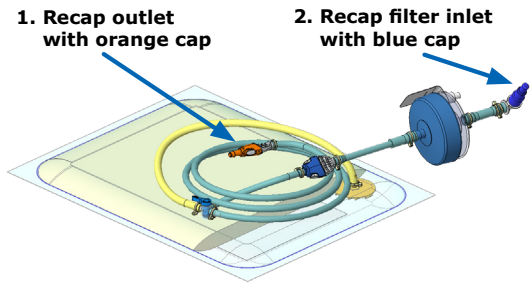


Storing bag with reconstituted media for later usage

It is possible to remove a fully reconstituted media bag with its filter set connected for later usage (e.g. when several bags are prepared in advance, or when the bag needs to be removed for cleaning the instrument).

Before disconnecting the media bag and filter from the system, flush the tubing with 1 L of water (e.g. by scanning the attached datamatrix and pressing on the [WATER] button). Shut down the equipement by pressing the ON/OFF button of the dispensing unit. The stopcock actuator will turn to home position and the 3-way valve connected to the media bag tubing can be removed from the system. Carefully recap the outlet with a clean orange cap before disconnecting the filter set from the media unit and close the filter set with the blue cap.

Datamatrix for flushing



Ensure the stopcock actuator is in home position (see page 13) before removing the tubing set from the instrument.

Recap the outlet with the orange cap before disconnecting the filter from the instrument to prevent backflow from the filter set inlet connector.

Store the media bag with the filter attached at conditions mentioned in the media bag datasheet.

After reconnection of the media bag and the filter with the system, follow the process steps previously described to setup the consumables, using the datamatrix (see above) to flush the tubing with 1L of water.

To ensure traceability, never use a filter set or a media bag on different ReadyStream® instruments.

Replacing an empty media bag

To replace an empty media bag by a new one, press the ON/OFF button of the dispensing unit.

Then disconnect the outlet's gray connector from the holder of the dispensing unit and disconnect the media bag from the filter set. The empty media bag can be removed from the ReadyStream® instrument and discarded following appropriate procedure.

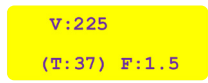
Install a new media bag and connect it to the filter set as described previously.

Priority to flow rate/priority to temperature

The ReadyStream® system can deliver culture media or water in two modes: either with a priority to temperature or with a priority to flow rate (speed).

Pressing the [SPEED] button switches between those two modes.

The active priority is indicated by an LED on the front panel, and the non-priority parameter is displayed in brackets.



When a temperature parameter is requested in flow-rate-priority mode, the system will try to come as close as possible to the set temperature. The ability to reach the temperature is linked to your country's power limitation and inlet water temperature. The ±2 °C precision is not guaranteed in this mode.

A real-time estimate of the dispensed media temperature is indicated on the display while dispensing.

When no heating is required the system will automatically be in flow rate priority mode.

Option to pre-heat in priority-to-temperature mode

In the priority-to-temperature mode, the system will request to perform a pre-heating step in case the conditions do not achieve the requested temperature (±2 °C).

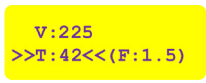
In this case the "Water" and "Media" LEDs will turn orange, and arrows will indicate an issue with the requested target temperature.

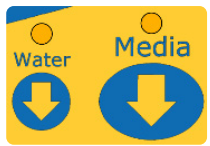
Press [+] to perform pre-heating of the filter and tubing with 300 mL of pre-heated water. Ensure a big enough container is positioned under the dispenser.

Pressing [MEDIA] or [WATER] would instead dispense media or water according to the currently displayed parameters, but without guaranteeing the final temperature.

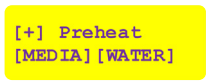
During the pre-heating step, the "Water" LED will blink orange and the display will indicate the current temperature of the water in the system and tubing and the remaining volume of pre-heated water to reach the target temperature.

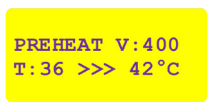
The "Media" and "Water" LEDs will turn green after successful pre-heating and the current parameters will be displayed.

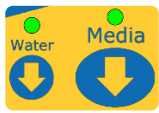




Alternating with







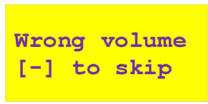
The system is now ready to dispense media or water at the target temperature.

After pre-heating, the system continuously checks if the conditions still meet the set dispensing temperature.

If the system is left some minutes without dispensing media, it may happen (depending on the conditions) that the system will request to repeat pre-heating. Perform pre-heating only when ready to dispense.

Cancelling a dispensing procedure

Pressing [CANCEL] while media or water is dispensed will stop the instrument properly. The respective “Media” LED or “Water” LED will flash in red.



Press [-] to acknowledge and clear the error.

If media dispensing was cancelled, the user is prompted to flush the tubing by pressing [WATER]. To stop flushing, press [WATER] again.

Tracking consumables usage

The ReadyStream® system can track several parameters, including the volume of water filtered by the filter set and the volume of media dispensed from the reconstituted bag, as well as the lifespan of both consumables.

The user can access this information by scanning the data matrix on the consumables’ labels during either the setup phase or during routine usage when the system is not dispensing.

Tracking media bag usage

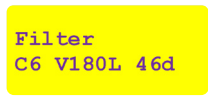
By scanning the label of the media bag currently used, the “Bag” LED will flash green and the bag information will be displayed.

The display indicates the remaining media volume and the expected number of tests that can be performed with the active test protocol, plus the remaining lifespan of the reconstituted bag (for example 29 dispensations of 225 mL each within 3 days). After 5 seconds the bag information is cleared, and the current dispensing parameters are displayed again.

When scanning the label of a media bag other than the one currently used with the instrument, the “Bag” LED will flash in red and “Other media” will be displayed on the screen. The information from this media bag will not be stored in the system.

Filter set usage tracking

By scanning the filter label, the “Filter” LED will flash green and the filter-related information will be displayed.



The display indicates the remaining number of connections to new bags, filtration volume, and lifespan.

After 5 seconds the filter information is cleared, and the current dispensing parameters are displayed again.

When scanning the label from a filter other than the one currently used with the instrument, the “Filter” LED will flash in red and “Other filter” will be displayed on the screen.

The information from this filter will not be stored in the system.

Common test data matrices

The following data matrices can be scanned to configure the instrument in routine dispensing. Follow instructions on page 24 on how to modify the parameters and on how to store them as preset on the system. Custom data matrices can also be generated as described in the application sheet “ReadyStream® creating custom data matrix codes”.

Volume (mL)	Temperature (°C)	Concentration (x)	Flow rate (L/min)	Priority mode	To scan
90	No heating	1	1	Flow rate	
100	No heating	1	1	Flow rate	
225	No heating	1	1.3	Flow rate	
225	No heating	1	1.5	Flow rate	
225	36	1	1	Temperature	
3375	No heating	1	1.7	Flow rate	
3375	36	1	1	Temperature	

Maintenance

Cleaning the surface of the instrument

The external surface of the instrument can be cleaned using a regular cleaning and decontamination agent.

We recommend avoiding to directly spray on surfaces and any active moving parts. It is preferable to use a wipe that has been pre-impregnated with the cleaning agent.

Do not use bleach or aggressive chemicals to clean the surface.

Do not autoclave the plastic parts.

When necessary clean (e.g. with water) the blue stick pads on the extension tray to prevent the bag from falling from the instrument. The pads can be removed and re-positioned on the extension tray.

The following reagents are recommended for external cleaning:

Reagent	External cleaning
Quaternary ammonium	Yes
Isopropanol	Yes
Ethanol	Yes

Sanitization of the internal fluidic path

It is recommended to perform the sanitization once per month or if the instrument has not been used for 2 weeks.

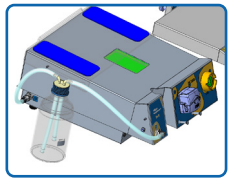
Disconnect regularly the water inlet tubing from the ReadyStream® instrument and from the deionized water faucet to avoid biofilm occurence.

Do not autoclave the water inlet tubing.

The following reagents are recommended for internal cleaning:

Reagent	Supplier
Quaternary ammonium: Benzalkonium chloride (between 0.25–0.5%) Poly(hexamethylene biguanide) hydrochloride (between 0.1–0.25%)	Contact our local technical service
Quaternary ammonium : Benzalkonium chloride (between 0.05%-0.1%), tetrasodium ethylene diamine tetraacetate (between 50-500 ppm), N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine (between 50-150 ppm)	
ROProtect C chlorine tablets Preparation of sanitizing solution: Follow the safety instructions outlined in the product safety data sheet.Dissolve the chlorine tablet in 3.5 L water (same water quality used for regular ReadyStream® operation). Wait 30 minutes for complete tablet dissolution. Product residues must be disposed of in accordance with national and regional regulations.	Order from our catalogue ZWCL01F50 (not available in US or Canada)

Isopropanol and ethanol should not be used for internal flow path cleaning.



For sanitization of the fluidic path, use the specific sanitization screw cap with tubing provided with the instrument. This screw cap can be used on any GL45 bottle of 1 L or 2 L (not provided).

Do not connect to bottle smaller than 1 L.

For the sanitization, the decontamination fluid is recirculated three times inside the instrument for a total contact time of 15 min. The instrument is then rinsed, either by reconnecting the instrument to the water source and flushing 2 times 2.5 L of water with the outlet sanitization tubing connected to the instrument outlet port, or by recirculating 10 times
0.5 L of water using the sanitization kit.

To start the sanitization process, turn ON the instrument, and scan a specific sanitization data matrix instead of the filter label, then follow the instructions on the display.

Example 1: (see complete description below)

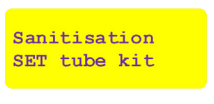
Three recirculations of 250 mL of sanitizing solution, each with a 5 minutes contact time, followed by 10 rinsing cycles, each with 1 minute contact time and using 500 mL of fresh deionized water. The water must be changed for each cycle.

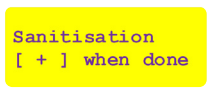
Example 2: (solution with rinsing container >2,5L)

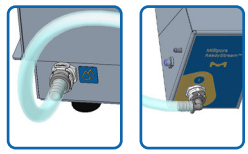
Three recirculations of 250 mL of sanitizing solution, each with a 5 minute contact time, followed by 2 rinsing cycles, each using 2500 mL of fresh deionized water.

Both “Priority” LEDs will blink green to indicate that the instrument is in the sanitization mode and will continue to blink during this process.

Disconnect any filter/media bag from the instrument, disconnect the water inlet tubing and connect the sanitization kit to the instrument, with the straight connector on the water inlet port of the instrument (Figure 2, L1), and the male elbow connector on the instrument outlet port (Figure 1, F1). Press [+] to confirm that the tubings are in place.







The user is then prompted to add the sanitizer to the GL45 bottle (not provided with the sanitization kit). Screw the sanitization kit cap on the bottle. Press [+] to confirm that the system is ready to start sanitization.

Fill the bottle with at least 500 mL of sanitizer.

The screen displays the number of sanitizer recirculation cycles and the waiting time between each. The “Water” LED flashes orange and the user is prompted to press [WATER] to start the sanitization process.

Press [WATER] to start sanitization. The “Water” LED will be flashing green and the sanitization process is conducted automatically.

After sanitization, replace the sanitizing solution with deionized water to rinse the instrument. Disconnect the sanitization kit from the instrument, rinse the bottle and tubing with fresh deionized water, reconnect to the instrument, with the straight connector on the water inlet port, and the elbow connector on the outlet port. Fill the bottle with 1 L or 2 L of fresh deionized water and press [+] to confirm.

Alternatively, the sanitization kit can be disconnected, the water tubing re-connected to the water port (Figure 2, L1), and the outlet sanitization tubing connected to instrument's outlet port (Figure 1, F1). Place the extremity of the outlet tubing with the other extremity placed in a container to collect 2.5 L of rinsing water.

The screen then displays the number of rinsing cycles and the waiting time between each. The “Water” LED will be flashing orange. Press [WATER] to start the rinsing step.

The “Water” LED flashes green as the water pump recirculates the rinsing water.

After recirculation, the display shows the remaining waiting time until the next rinsing cycle.

After each rinsing cycle, change the water for fresh deionized water and confirm by pressing [+].

Alternatively, if the instrument was reconnected to the water source, make sure enough capacity remains in the container collecting the rinsing water.

The “Water” LED will be flashing orange. Press [WATER] to perform the second rinsing cycle like the first.

During rinsing the “Water” LED will be flashing green.

Repeat the rinsing steps until no further rinsing cycle is requested by the system.

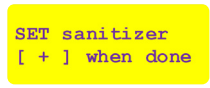
At the end of the sanitization and rinsing process, disconnect the sanitization kit from the instrument.

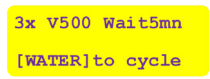
Rinse with deionized water and dry the sanitization kit, the bottle, and the outlet tubing before storage.

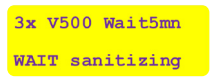
Once removed, press [+] to exit the sanitization mode. The two “Priority” LEDs will stop flashing green.

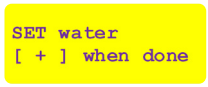
If needed, reconnect the water inlet tubing to the media unit and follow instructions on the display to set up the consumables as described in page 14.

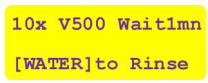
The system is now ready.

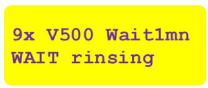


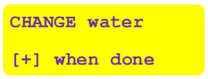


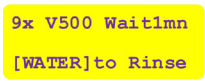


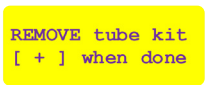












Error messages

During device operation, errors of three types may be displayed:

- Critical Error
- Error
- Warning

If a **Critical Error** is raised, the device will immediately shut down and display a message on the LCD prompting the user to press the [On/Off] button. When the user presses the [On/Off] button, the device will reboot.

Example display:

PRESSURE FAIL	|	Press [On/Off]
Error: 168	|	to reset device

If an **Error** is raised, the error message will be displayed on the LCD and the user prompted to press the [+] button to acknowledge. When the user presses the [+] button, the displayed error will be cleared and the device will continue to operate.

Example display:

TEMPERATURE FAIL	|	Press + button
Error: 146	|	to acknowledge

Error code	Issue description	User recommended action
146	TEMPERATURE FAIL Dispensed media not at the right temperature in priority-to-temperature mode.	Perform the pre-heating step. Ensure that the input water flowrate is always above 2 liters/min If the input water is out of the recommended temperature range (18–22 °C), and requested temperature is above 37 °C, first dispense a volume of water heated to a lower temperature before dispensing pre-heated media into the sample container. Make sure the flowmeter has been calibrated at least once.
167	INLET PRESSURE Inlet water source pressure out of range.	Ensure that the water source can deliver at least 2 liters/min of deionized water. Check the strainer filter and clean if applicable. Check that the input water pressure is not >6 bar.
168	PRESSURE FAIL Media unit internal pressure reaches the safety limit	Error during dispensing: Ensure that the dispensing tubing is not pinched or kinked. Check that the tubing between the filter and stopcock is not twisted. Check if the filter set is properly primed. Check that the stopcock is properly inserted in the actuator. Use a new filter set. Check water quality and add strainer filter on the instrument inlet. Error while removing inlet tubing or filter: Reconnect the tubing/filter and restart the instrument. Error when switching on the instrument: Open the vent of the filter set and restart the instrument. Attach the water inlet tube (RDYTUBE10, the one which has only one CPC connector on one side and an open end on the other) to the water inlet of the media preparation unit. Then, connect it to the filter connector of the media preparation unit to release any overpressure from the system. Finally, restart the dispensing unit.
144	BAD MEDIA DISPENSE Media quantity may be incorrect	Check sample volume. Repeat dispensing if necessary. Verify that the tubing is correctly positioned in the peristaltic pump head and that the tubing guide of the peristaltic pump is in low position.

166	RTC FAIL Battery lifetime expired	Battery needs to be replaced. Please contact Technical Service for procedure. For the short term: Turn off / on dispensing unit. Press [+] immediately after turning on dispensing unit. Adjust date and time to actual date using [+] / [-] to change and [DECIMAL] to move between fields. Leave the instrument connected to the power supply and ensure the power switch remains turned on.
177 or 181	OVER TEMPERATURE Too high heater temperature	Check if enough water remains in the container Check the water source flowrate is above 2 liters/min
185	VALVE NOT OPEN No water flow detected	Check if enough water remains in the container Check the water source flowrate is above 2 liters/min Check the priming value after the priming step
210	STOPCOCK JAMMED Stopcock valve cannot open	Check the stopcock if fully inserted before pressing the [PRIME] or [WATER] buttons

Troubleshooting

Issue	Proposed solution
Instrument keeps requesting to perform priming	When starting the instrument for the first time, when tubing is full of air, or when using a new filter, it may be needed to perform more than 5 priming cycles to remove all air bubbles and vent the filter. In case no air bubbles are observed in the filter, or the system remains in the priming mode after more than 10 priming cycles, check that the input flow rate is above 2 liters/min, or that the lid of the container is opened, and that the input tubing is not kinked. If the instrument cannot achieve a minimal flow rate of 1450 mL / min during priming, it will not be possible to use properly the instrument.
Instrument keeps requesting to perform pre-heating	In priority-to-temperature mode, the target temperature can be reached only for volumes above 200 mL. If smaller volumes of pre-heated media are necessary, please dispense a volume above 200 mL into a sterile container and then transfer the right volume of pre-heated media manually. It may also happen that the conditions do not allow an accurate temperature to be set and realized (impact of inlet water temperature, media bag temperature, target temperature, media bag concentration, target concentration). If temperature accuracy is not critical, it is possible to dispense the media (or water) by pressing the [MEDIA] button when pre-heating is requested, or to switch to priority-to-flow-rate mode.
Leak at the filter/ instrument connection	When inserting the filter connector in the instrument, make sure to align properly the filter male connector with the instrument female connector, as the O-ring may move or become damaged. Turn off the instrument, remove the filter, and make sure the black O-ring is correctly positioned in the recess of the filter connector. Change the filter if the O-ring shows some damage.
Final volume out of range	Repeat peristaltic pump calibration by opening the pump head and closing it again to force the calibration process. Make sure the tubing is properly positioned and not twisted in the pump head. Check if the tubing guide of the peristaltic pump is in low position. Repeat flowmeter calibration by pressing [WATER] for at least three seconds. Please consider that media density is not equal to 1 kg/L. Make sure to use a container and that the balance weight is in the range of the measured volumes.
During the calibration of the peristaltic pump, the pump calibration values are too high / too low	1. Make sure that the balance is properly tare and calibrated 2. For too low volumes, create a small loop in the tube to increase the calibration volume. For too high volumes, gently stretch the tube slightly to decrease the calibration volume.
Barcode not scanned	Ensure that the reader is properly connected to the instrument and the scanning light is visible when pressing the trigger
Message: Expired bag / filter although valid consumable scanned	Turn off / on dispensing unit. Press [+] immediately after turning on dispensing unit. Adjust date and time to actual date using [+] / [-] to change and [DECIMAL] to move between fields. Leave the instrument connected to the power supply and ensure the power switch remains turned on.
Dispensing outlet causes splashes out of the test container	Adjust the height of the dispensing arm properly to the flow by using the dispensing arm screw. Ensure that the base screw is correctly tightened on the dispensing stand.
Flow rate is low in priority-to-flow mode	Check the flow rate value on the data matrix generator.
100 L media bag does not fit on the instrument	Ensure the extension tray is pulled out.
Media bag does not stick to the pads	Clean the pads regularly.
Media is not dissolved after the foreseen time	Ensure sufficient soft agitation of the media bag during and after filling with pre-heated water.
Stopcock valve cannot be inserted in the actuator	Ensure actuator is in the home position (press ON/OFF to reinitialize the instrument). Check that the stopcock lever is aligned with the tubing (left tubing, when on the instrument). Do not insert the stopcock by force if the actuator is not in the home position.
Stopcock valve cannot be removed from the actuator	Press [OFF] button before removing the media bag to move the actuator into home position. Do not remove the stopcock by force if the actuator is not in the home position.
System power switch turns off	The main unit power switch has an integrated circuit breaker. In case of overconsumption, the switch will interrupt the current flow. Restart the instrument by switching it ON again. Please contact our service team if the switch turns off frequently.
When I dispense x mL of media, the weight does not match the expected amount. Why is this happening?	The media density is > 1 kg/L. Therefore the weighed amount does not equal the dispensed volume.
When turning on the dispensing unit, the system stays on the date editing screen	Adjust date and time to actual date using [+] / [-] to change and [DECIMAL] to move between fields.

Standard product warranty

The applicable warranty for the products listed in this publication can be found at **www.sigmaaldrich.com/terms** (within the “Terms and Conditions of Sale” applicable to your purchase transaction).

Technical assistance

Please check the product webpage whether an update of this user guide is available.

For more information visit **www.sigmaaldrich.com/techservice**

Technical Assistance

For more information, please visit **SigmaAldrich.com**
for up-to-date worldwide contact information

Lit No. MK_UG5961EN Ver. 4.0
11/2024