

General Safety Precautions

When using the VWR Labmax please observe the following safety precautions :

- Follow all safety regulations. Always wear eye protection, gloves and other necessary protective clothing
- Observe any safety instructions and precautions on the reagent bottles
- All users should read and follow this manual carefully
- Keep this manual easily available to all users
- The Labmax is designed for dispensing liquids only in accordance with its operating limitations
- If unsure about dispensing a specific solution, please contact VWR International at 1-800-932-5000.
- Always dispense liquids away from the operator and other persons
- Avoid splashes!
- Volatile substances must be dispensed in a fume hood
- Never carry the dispenser/bottle assembly by the dispenser
- Never carry the mounted instrument by the cylinder sleeve
- Regularly inspect the VWR Labmax and dispenser tube for leakage
- Clean the VWR Labmax regularly to maintain proper operation
- Ensure the suction and ejection cannulas are firmly in position before using the VWR Labmax
- Use extra caution when dispensing corrosive, poisonous, radioactive or hazardous chemicals

Upon receipt of the VWR Labmax Dispenser inspect the instrument for any damage that may have occurred during transit. Any damage must be reported to the carrier within 48 hours.

Optional Accessories

Warranty

VWR Scientific Products warrants the VWR Labmax you have received to be free of defects in material and workmanship for 24 months from the date of purchase. VWR's responsibility shall be limited to the repair or replacement of the VWR Labmax at VWR's option.

This warranty is valid only if the VWR Labmax is used in the manner described in this manual and for the purpose for which it is designed.

VWR International shall not be responsible for consequential damages resulting from the misuse of this equipment.

Operating Limitations

The VWR Labmax is suitable for dispensing most liquids. Extra care should be taken when dispensing dangerous or hazardous solutions.

The VWR Labmax Dispenser should not be used for dispensing the following :

- solutions of hydrofluoric acids
- solutions which contain or form solids
- solutions of substances catalyzed by platinum and iridium alloys

The VWR Labmax should be rinsed daily if used with the following :

- solutions which form crystals
- inorganic oxidizing solutions (i.e. biuret reagent)

The temperature of the VWR Labmax Dispenser and reagent should not exceed 40°C (104°F).

Assembly

Select the appropriate length of suction tubing for the size bottle being used.

Press the tubing firmly into position on the underside of the VWR Labmax cap. Screw the ejection cannula on firmly.

Attention :

Do not move the plunger before the dispenser has been completely assembled.

The VWR Labmax Dispenser will fit on a variety of bottle tops using the various supplied adapters.

The VWR Labmax Dispenser should be firmly screwed onto the threads of the bottle from which liquid is to be dispensed.

When placing the VWRbr Labmax on the bottle top hold it by the base and not by the glass cylinder.

Safe and proper operation is only possible with the ejection cannula in the condition it is originally supplied.

Never attempt to operate the VWR Labmax with a damaged or deformed cannula. Do not use any other type of tubing. Regularly inspect the tubing for leakage and immediately replace any damaged or deformed tubes.

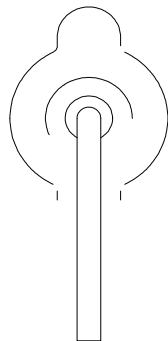
Hold the housing at the base when screwing or unscrewing the instrument rather than gripping. Never carry the dispenser on its housing! The various adapters that come with the **VWR LABMAX** will allow the dispenser to fit on many different bottles.

Dispensing

Be sure to follow all safety instructions.

Always wear eye protection and other appropriate safety equipment. Place the vessel that solution is to be dispensed into under the ejection cannula.

The ejection cannula must point away from the user and other persons at all the times.



Ejection Cannula

Prevention of sticking valves during prolonged intervals

When the VWR Labmax Dispenser is screwed onto a bottle be sure that the valves are surrounded by liquid.

When the VWR Labmax is not on a bottle, smooth running of the valves can be maintained by rinsing with distilled water and/or laboratory detergent. After rinsing draw ethanol through the Dispenser.

To ensure the accuracy of the VWR Labmax, test with 2 x distilled water on a semi-micro scale.

Remember to allow for temperature dependence (1 ml water at 20°C = 0.998g).

Sterilization

After removal of the suction tube and ejection cannula the VWR Labmax can be autoclaved at 121° C and maximum of 2 bar. Place the VWR Labmax in an upright position on a towel. Contacts with hot metal surfaces should be avoided.

IMPORTANT:

Before autoclaving, adjust the volume of the VWR Labmax to 2/10 of its total volume.

Caution:

Let the VWR Labmax cool slowly after autoclaving. Do not use the VWR Labmax until it has cooled to room temperature. Inspect all parts and tubing for leakage after sterilization.

It is also possible to sterilize the VWR Labmax chemically with ethanol or other sterilizing reagents.

Warning:

Avoid personal injury from chemicals. To protect yourself wear eye protection and other appropriate safety equipment and clothing. Please follow all safety instructions and observe operating procedures.

Safe and proper operation is only possible with the ejection cannula as originally supplied. Never use damaged or deformed cannulas. Do not use any other type of tubing. Regularly inspect the tubes for leakage and immediately replace damaged or deformed ones.

Warning:

Never press on the plunger without a collection vessel located under the ejection cannula !

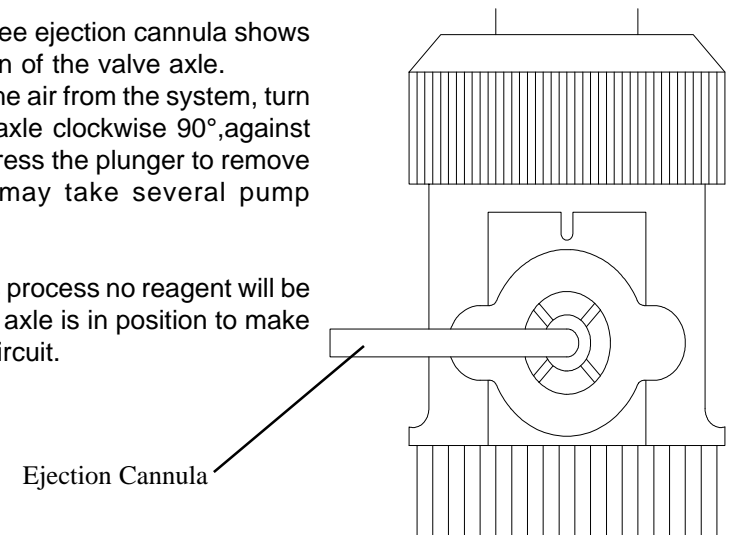
CAUTION: If the valve is damaged, reagent may drip from the ejection cannula !

To remove air

The drip-free ejection cannula shows the position of the valve axle.

To purge the air from the system, turn the valve axle clockwise 90°, against the stop. Press the plunger to remove air (This may take several pump strokes !).

During this process no reagent will be lost as the axle is in position to make a closed circuit.



Volume adjustment

The quick volume adjustment has been designed for reproducibility in dispensing.

The volume is adjusted by pressing the upper part of the volume rocker switch.

The lower part of the switch will then be disengaged from the toothed system and the volume easily adjusted.

Slide the switch up or down until the indicator on the left side is pointing to the appropriate volume on the scale.

Release the rocker switch. Turn the ejection cannula away from you and place a vessel underneath it.

The valve axle must now be turned to the dispensing position (cannula spout facing downward).

Raise the plunger slightly and press down to fill the ejection cannula with solution.

Fill it very carefully to the tip.

Raise the plunger slowly until it stops.

The Dispenser is now filled.

Gently depress the plunger to dispense the liquid into the collection vessel.

Attention :

Never force the plunger downwards. Raise and depress the plunger slowly.
Always leave the plunger down and empty after use.

Rest Position

Turn the axle valve to the left (180°) until it stops. This will close the dispensing position. Tip the dispenser/ bottle assembly to allow the solution in the ejection cannula to flow back into the bottle. Any reagent left in the Dispenser will flow back into the bottle. The cannula will not drip and the need for a cap on the ejection cannula is eliminated.

No reagent will be lost while the VWRbrand Labmax is not in use and no reagent will leak into the environment.