

SmartTips

Best Practices for Maintenance of Thermo Scientific Multidrop Dispensing Cassettes

Daily Maintenance

Clean the dispensing cassette daily after use.

1. Wash the tubes by dispensing ddH₂O through the tubings. Make sure all the tubes are washed properly.
 - Standard tube dispensing cassette: Use a minimum of 20 ml ddH₂O for washing.
 - Small tube dispensing cassette: Use a minimum of 10 ml ddH₂O for washing.
 - If cleaning with water is insufficient, use a mild laboratory detergent (for example, TWEEN®-20 or Triton™ X-100) or a cleaning solution (e.g., 1% Micro-90® Cleaning Solution by Cole-Parmer). Then, dispense with a large amount of ddH₂O.
2. Empty the tubings of the dispensing cassette. The dispensing cassette can be dried at room temperature.
3. If the instrument is not going to be used for a couple of hours, place the dispensing cassette into the rest position.
4. Otherwise, store the dispensing cassette in the original packaging or in a plastic bag.

Note: Ensure the cassette is thoroughly dry after cleaning to avoid any growth in the tubings.

Caution! When dispensing proteins, wash first with ddH₂O before ethanol to avoid precipitation.



Regular Maintenance

1. Ensure that the liquid or reagent does not contain any particles > 50 µm and that the liquid container is covered. Avoid dust or any particles > 50 µm when operating with the dispensing cassette.
2. Depending on the frequency of use, inspect the cassette at least once a month. Recalibrate the cassette if the tubing has been under tension for a prolonged period or if the cassette is getting close to its End of Life (EOL) cycle.
3. For small tube cassettes, it is recommended that the reagents be filtered to avoid clogging. All dye solutions should be filtered for dispensing. There are also reagent filters available for the small tubing cassettes.
4. Store the cassette in the original packaging or in a plastic bag.

Note: Ensure the cassette is thoroughly dry after cleaning to avoid any growth in the tubings.

Ordering Info - Small Tubing Filters

Cat. No.	Description
N12928	Reagent filter for small 8-tube cassette
N12929	Reagent filter for small long-tube cassette
N13131	Reagent filter for small 8-tube cassette, 5-pack
N13132	Reagent filter for small long-tube cassette, 5-pack

Troubleshooting

Cleaning plastic/metal tips if clogged:

1. Press the EMPTY button for a few seconds. Then press the PRIME button for a few seconds.
2. Place a liquid reservoir filled with ddH₂O under the cassette tips so that the tips are submerged in liquid, and press the EMPTY button.

Note: Be careful, the small plastic tip is very fragile.

Caution! To avoid particles from re-entering the reagent, place the tubing end weight into a separate vessel while you empty the tubing.

Cleaning the metal tips if clogged:

1. Open the cassette cover and detach the tubing from the tips, and remove the tip holder from the cassette.
2. Attach the syringe with the filter unit and press ddH₂O, ethanol, or another suitable liquid through the syringe to wash any particles out of the tubing.
3. Attach the short tubing onto the outlet of the tip, and press liquid through the syringe.
4. Verify the cleaning, insert the tubing back onto the tips, and place the tip holder back into the cassette.

Note: Syringe, filter and short tubing included in cassette packaging.

For more detailed instructions on cleaning metal tips, please refer to the *Multidrop Combi User Manual*.

General Tips/Rules

- Handle the dispensing cassette with great care so that you do not damage the tubes and dispensing tips. These factors affect the useful life of the dispensing cassette.
 - Use a dedicated cassette for different liquids being dispensed.
 - Don't let the liquid stand in the tubing for long periods; prime and dispense frequently.
- Note:** If only using DMSO, do not prime/rinse with H₂O due to DMSO being highly hygroscopic. Water absorption occurs quickly and will affect the concentration of DMSO. A dedicated cassette for DMSO dispensing is recommended.
- After autoclaving, allow the dispensing cassette to cool down at room temperature for at least two hours before use. Autoclaving conditions: 1 bar pressure at 121°C for 20 minutes.
 - Small cassettes 10x
 - Standard cassettes 50x

- Keep particles from entering the tubing, and you will reduce the likelihood of a clogged tip
- If there is clogging due to precipitation etc. it is recommended to use standard washing procedures described previously for the cassette (mild detergent, water, ethanol). However, always use ethanol as the last resort as a washing solution as it can cause precipitation when using cassettes with cells or proteins. In this case ethanol is NOT recommended.

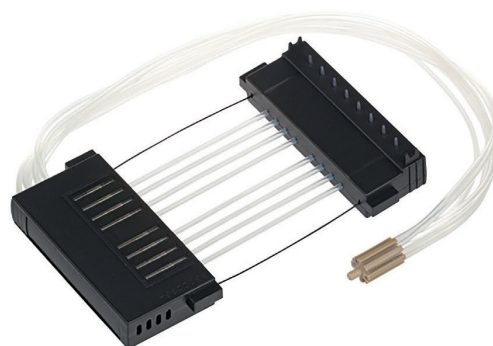
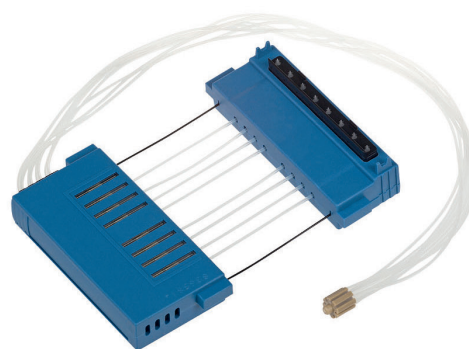
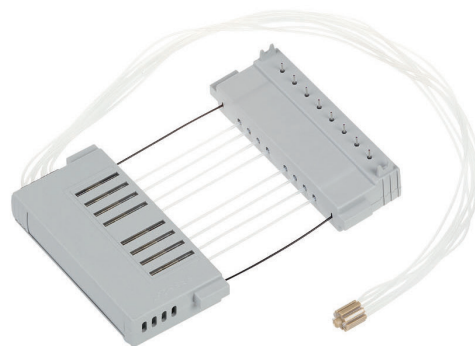
Bleach can be used if needed, but be sure to rinse well with plenty of water.

General Cleaning Tips

Liquid to be dispensed	Cleaning agent
Protein containing solutions	No ethanol
DMSO	Water or ethanol
Water-based solutions	Water
Solutions including salts	Water
Enzymes, substrates	Water
Cell culture media	Warm water

If you used a cassette for enzyme dispensing, inactivate the substrate with ethanol before using the cassette to dispense another liquid.

For the final step, prime with ethanol or isopropanol, then empty. Ethanol helps to dry—as well as sterilize—tubing. However, please note that some chemicals may dissolve in ethanol or isopropanol.



Find out more at thermofisher.com/multidrop