



MACSQuant® Instrument short instructions

Maintenance

Before using the instrument for the first time, read the MACSQuant Instrument user manual and MACSQuantify Software user manual.

⚠ WARNING

Risk of scalds and/or chemical burns of skin and eyes due to hot liquids and hypochlorite solution (bleach).

- Wear personal protective equipment (such as gloves, safety glasses, etc.) as indicated in the safety data sheet for the particular substance.

⚠ WARNUNG

Gefahr von Verbrühungen und/oder Verätzungen von Haut und Augen durch heiße Flüssigkeiten und Hypochloritlösung (Bleichmittel).

- Tragen Sie persönliche Schutzausrüstung (wie Handschuhe, Schutzbrille etc.), wie im Sicherheitsdatenblatt zum jeweiligen Material angegeben.

⚠ ADVERTENCIA

Riesgo de escaldaduras y/o quemaduras químicas en la piel y los ojos por líquidos calientes y solución de hipoclorito (lejía).

- Use equipo de protección personal (como guantes, gafas de seguridad, etc.) como se indica en la hoja de datos de seguridad de la sustancia en particular.

⚠ AVERTISSEMENT

Risque d'ébouillantage et/ou de brûlures chimiques de la peau et des yeux par des liquides chauds et de la solution d'hypochlorite (eau de Javel).

- Portez des équipements de protection individuelle (tels que des gants, lunettes de protection, etc.) suivant les indications fournies dans la fiche de données de sécurité de la substance en question.

⚠ AVVERTENZA

Rischio di scottature e/o ustioni chimiche della pelle e degli occhi a causa di liquidi caldi e soluzione di ipoclorito (candeggina).

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Introduction

All MACSQuant Instruments are equipped with automated start-up and shutdown protocols to ensure easy and reliable maintenance. When running many or sticky samples, additional washing routines are recommended to further enhance performance of the instruments. Refer to **Table 1** and **Table 2** to learn more about available washing programs and washing recommendations.

Washing programs

Washing program	Description
Rinse	Rinses the needle with MACSQuant Running Buffer. Duration 2 minutes.
Clean	Cleans the needle and flow cell with 0.25 mL 1% hypochlorite solution. Duration 10 minutes.
Flush	System backflush rinse if a blockage of the fluidic system occurs. Duration 18 minutes (MACSQuant Analyzer 10, VYB, and 16) or 1 minute (MACSQuant X).

Table 1: Washing programs available for the MACSQuant Instruments

To start a washing program, select one of the following options:

- Click the **Rinse** button in the status bar to start a needle **Rinse**.
- Right-click **Rinse** in the status bar. Select **Clean** to start a **Clean** program. Follow the instructions on the screen.
- Right-click **Rinse** in the status bar. Select **Flush** to start a **Flush** program. Follow the instructions on the screen.

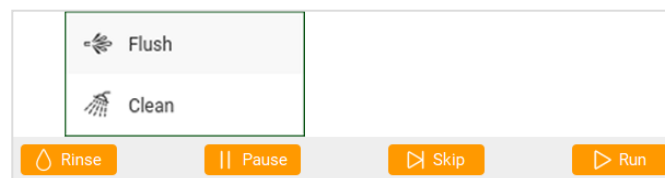


Figure 1: Rinse button in the status bar with the options **Clean** and **Flush**

Cleaning recommendations

Indication	Washing programs
after each user (optional)	Clean program
after running biohazardous samples	Clean program
after sticky material, such as bone marrow or tumor samples	Clean program followed by a Flush program
during laser warm up in acquisition mode (recommended)	Flush program followed by a Clean program
debris or high noise	Clean program, hot bleach
blockage of the fluidic system; can also be used as weekly cleaning routine	hot bleach, refer to Removing a potential blockage (hot bleach) below

Table 2: Washing recommendations for the MACSQuant Instruments

Cleaning the washing station

- 1 Switch off the instrument.
- 2 Remove the Single tube rack.
- 3 Open the cover of the washing station to the left-hand side.
- 4 Clean the washing station by wiping it with tissues and an appropriate disinfectant, for example, 70% ethanol, isopropyl alcohol, or 1% hypochlorite solution. Finally, rinse with distilled water.

Cleaning the uptake needle

Clean the uptake needle of the robotic needle arm regularly to prevent contamination or clogging.

- 1 Switch off the instrument.
- 2 Push the needle carefully out of the holder.
- 3 Wipe the surface of the needle with tissue soaked with disinfectant followed by distilled or deionized water. Use 70% ethanol, isopropyl alcohol, or 1% hypochlorite solution.
- 4 Put the needle back into the holder.

Long-term storage of the instrument

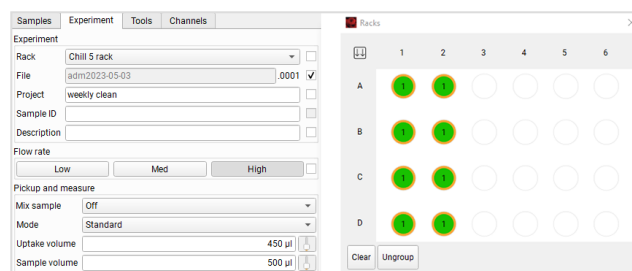
The instrument must be run every two weeks to prevent clogging. If the instrument is not in use, turn on the instrument every two weeks and switch it into acquisition mode. During the priming procedure, the fluidics are flushed. After priming, shut down the instrument manually as described in the short instruction **Getting started**.

Removing a potential blockage (hot bleach)

Clogs or blockages in the sample tube or flow cell can cause greatly reduced event rates. Optimized sample preparation can prevent clogs. Observe the instructions below to remove blockages. Contact Miltenyi Biotec Technical Support if the problem persists.

The following protocol can also be used as a weekly cleaning routine.

- 1 Go to the **Experiment** tab.
- 2 Select the Chill 5 Rack.
- 3 Select column 1 and 2 in the rack scheme. Ensure vertical processing order.
- 4 Click **Group**.
- 5 Set the flow rate to high, the uptake volume to 450 µL, and the sample volume to 500 µL. It is not necessary to open an analysis window.
- 6 Optional: Enter weekly clean in the **Project** field.



- 7 Save this as an experiment file called **weekly cleaning** in the Public folder, so that the file can be opened by any user.
- 8 Optional: Open the **weekly cleaning** experiment file.
- 9 Prepare 2 mL hot bleach solution. Mix 1 mL of 1% hypochlorite solution with 1 mL boiled distilled water.
- 10 Place four tubes containing 0.5 mL hot bleach solution into wells A1-D1 of the Chill 5 Rack.
- 11 Place four tubes containing 0.5 mL MACSQuant Running Buffer into wells A2-D2.
- 12 Place the Chill 5 Rack onto the MACS MiniSampler Plus.
- 13 Check the MACSQuant Running Buffer and waste level.
- 14 Click the **Start** button.



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