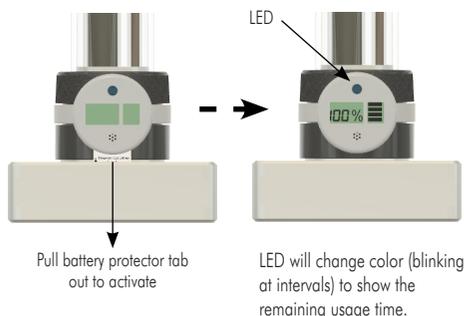


2.9 Electronic Maintenance Indicator (option)

If your filter or base plate came bundled with an electronic maintenance indicator please follow the instructions in the electronic indicator user guide on how to install and configure this indicator.



3. Maintenance

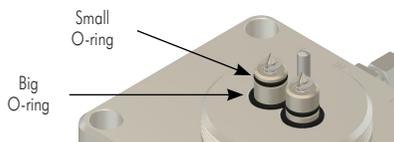
3.1 Replacement of a filter cartridge

Loosen the universal ring nut and remove the used filter cartridge from base plate. Install a new filter cartridge according to 2.3 to 2.8.

A filter cartridge needs to be exchanged annually. However, the actual lifetime may be shortened depending on the environment and frequency of use. In that case, exchange the filter cartridge when the visual indicators start changing color.

3.2 Base plate maintenance

Check both the big and small O-rings on the base plate for hair cracks when replacing the filter cartridge. The slightest leak may allow moisture, oxygen and hydrocarbons to enter the system and contaminate the gas. Exchange the O-rings if there is any hair cracks. (2 pcs of small O-rings are included with each replacement filter cartridge. Big O-rings need to be ordered separately.)



Rear end connectors at the base plate may never be exchanged by unauthorized personnel.

3.3 Electronic Indicator (option)

Detach the device and push the battery out to stop the buzzer. Reset the device by using the configuration utility while connecting the device to a computer using a micro usb cable. Exchange the battery after 12 months or when the filter is replaced.

4. Disposal



Saturated filter cartridges should not be placed in household waste bins. Please check local regulations for information about the disposal of chemical waste in your area. Never re-condition any filter cartridge.

5. Overview

Super-Clean Gas Filter cartridges are suited for the purification of non-corrosive gases with low contamination concentrations to a better as 6.0 grade (99,99990%) purity.

Super-Clean Gas Filter cartridges are connected to an appropriate genuine base plate which is installed into the gas line.

6. Specifications

Filter Type	H ₂ O (gr)	O ₂ (ml)	THC (gr)	CO ₂ (gr)	Usable for (Gas Type)
Moisture	7.2	-	-	-	C, A, He, H ₂
Oxygen	-	150	-	-	C
Hydrocarbon	-	-	12	-	C, A, H ₂
Combi (Carbon dioxide + Moisture)	3.5	-	-	6	A
Combi (Moisture + Hydrocarbons)	3.5	-	6	-	A, H ₂
Combi (Moisture + Oxygen)	3.5	75	-	-	N ₂
Triple (Moisture + Oxygen + Hydrocarbons)	1.8	75	4	-	C, He, H ₂

C = Inert Carrier Gas
 He = Helium
 H₂ = Hydrogen
 A = Air
 N₂ = Nitrogen

All filter cartridges are packed under Argon, except for the He-specific filter which is packed under Helium.

Maximum pressure: 15 bar
 (217 psi or 1500 kPa)

Maximum flow: 7 L/min.

Gas Quality at outlet: > 99.9999%

RoHS compliant

7. Safety Information

- The maximum concentration of Oxygen allowed in the gas is 0.5%. (valid only for each filter packed with O₂-adsorbent and O₂-indicator)
- Maximum Gas-System pressure should never exceed 15 bar (217 psi or 1500 kPa).
- The total system design must be considered to ensure safe, trouble-free performance. Proper installation, operation, and maintenance are the responsibilities of the system designer and user.
- Do not install a filter kit near or in a hot area (i.e. the hot-air exhaust at the rear of the GC).

8. Patent Notices

Country or Region	Patent Number
Europe	EP2734962 B1
Singapore	196669
China	ZL 201280037276.6
United States	9,715,673

9. Ordering Information

Baseplates for Super Clean® Gas filters

- 22025** Single-Position Baseplate - 1/8" Brass
- 22344** Single-Position Baseplate - 1/8" Stainless Steel
- 22026** 2-Position Baseplate - 1/8" Brass
- 22345** 2-Position Baseplate - 1/8" Stainless Steel
- 22027** 3-Position Baseplate - 1/8" Brass
- 22346** 3-Position Baseplate - 1/8" Stainless Steel

Ultra-High Capacity Filters

- 22028** Ultra-High Capacity Moisture Filter
- 22029** Ultra-High Capacity Oxygen Filter
- 22030** Ultra-High Capacity Hydrocarbon Filter

Replacement Filters

- 22020** Replacement Triple (O₂/Moisture/Hydrocarbon) Filter
- 22022** Replacement Fuel Gas (Moisture/Hydrocarbon) Filter
- 23843** Replacement CO₂, Sulfur, Moisture Filter

Filter and Baseplate Kits

- 22019** Carrier Gas Kit (Baseplate and Triple Filter) - 1/8" Brass
- 22021** Fuel Gas Kit (Baseplate and 1 Fuel Gas Filter) - 1/8" Brass
- 23844** Super Clean Gas CO₂ Filter Kit - 1/4" Brass
- 23845** Super Clean Gas CO₂ Filter Kit - 1/8" Brass
- 23846** Super Clean Gas CO₂ Filter Kit - 1/4" Stainless Steel
- 23847** Super Clean Gas CO₂ Filter Kit - 1/8" Stainless Steel

Filter Bundle Kit

- 22031** Filter Bundle Kit (1 Triple Filter and 2 Fuel Gas Filters)

Helium-Specific Super Clean® Filter & Kit

- 21983** Helium-Specific Carrier Gas Cleaning Kit
- 21982** Replacement Helium-Specific Filter

Parts

- 21833** 1/8" to 1/4" Tube-End Unions Brass (5 pk.)
- 21984** Wall Mounting Bracket for Super Clean® Baseplates
- 22023** Replacement O-rings for Cartridge Baseplates (10+10 pieces)

Questions about this or any other Restek® product? Contact us or your local Restek® representative (www.restek.com/contact-us).

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#204-08-019 Rev. date: 01/21



RE-MANU0202.5
Rev. 5

RESTEK®
Pure Chromatography

Super-Clean Gas Filter Kit

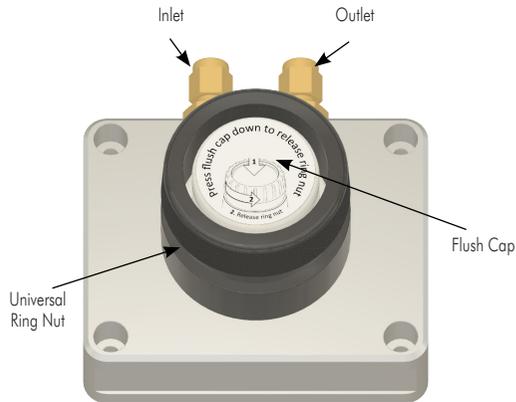
Instructions for use



www.restek.com

1. Installation of a Base plate

A base plate can have 1, 2, 3, or 4 positions, depending upon the number of gas purification applications. These instructions are valid for each individual position/rear end fitting connection on the base plate.



1.1 Important information before you start

- Never install brass connectors on stainless steel tubing to avoid leakage
- Installation of the base plate should always be done by certified personnel.
- After installation do not forget to perform a reliable leak test using an electronic leak detector
- Only use genuine base plates. Supplier warranty will be waived with use of non-original base plate!

1.2 Installation Instructions

1. Switch off the incoming gas.
2. Cut the gas line using an appropriate metal tubing cutter.
3. Hand-tighten the incoming gas line tubing to the rear end-fitting marked IN at the base plate; keep the connection loose!
4. Switch on the incoming gas and flush the gas line for 10 min. with pure carrier gas, minimum pressure: 8 psi.
5. Connect the incoming gas line tight to the rear end-fitting (do not over-tighten).
6. Make sure that the flush cap and universal ring nut are well mounted on the base plate.
7. Fixate the base plate with screws using the mounting holes or use an optional wall mounting bracket.
8. Now mount the outgoing carrier gas line to the rear end-fitting marked OUT at the base plate and your analytical system is "ready-to-go".

1.3 After Base plate installation

After connection of a new base plate to the inlet gas line of the analytical system, it is recommended to flush the total system for 1/2 hour at minimum pressure: 90 psi (620 kPa).

2. Installation of a Filter

2.1 Important information before you start

- **Install filter cartridge only under low pressure < 1 bar.**
- After installation do not forget to perform a reliable leak test. **Always use an electronic leak detector to check for leaks. Leak detection fluids or sprays may damage the filter and contaminate your gas line.**
- Never install an oxygen filter in a base plate position suited for air. It will result in instant saturation!

2.2 Remove the flush cap and universal ring nut

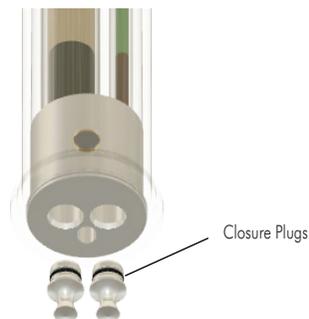
Before installing a filter make sure the base plate is properly connected to the gas line, and the system has been flushed. While pushing down on the flush cap, remove the universal ring nut by turning the ring nut counter clockwise. Remove the flush cap.



As long as there is no filter cartridge connected, the base plate will automatically block the gas stream.

2.3 Remove the closure plugs

Remove the two metal diffusion-proof plugs from the filter cartridge Inlet and Outlet (positioned at the bottom of the filter cartridge).



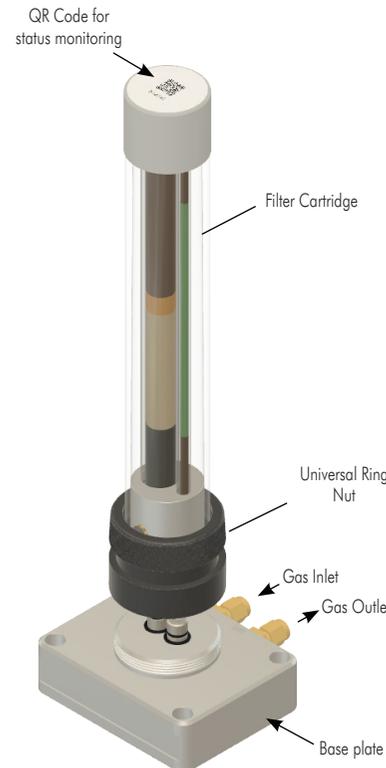
2.4 Align the filter with the base plate

Use the universal ring nut from the base plate and place it around the filter cartridge.

Align the filter cartridge with the base plate, making sure all three holes align with the two valves and positioning pin.



2.5 Position the filter on the base plate



2.6 Install the filter onto the base plate

While pushing the filter down on the base plate, hand tighten the universal ring nut until the filter is firmly connected to the base plate.

- During installation of a new cartridge, torsion on the plastic outer protection tube should be avoided at any time; put your hand on top of the filter housing during installation and keep the cartridge 90 degrees upright.
- Once the filter is positioned on the base plate it is necessary to keep the filter in downwards position by hand to prevent air from entering the system.
- After installing the filter cartridge to the base plate, highly pure gas will automatically stream from the filter into the analytical system.



2.7 After Filter Installation

Perform a reliable leak test. **Always use an electronic leak detector to check for leaks. Leak detection fluids or sprays may damage the filter and contaminate your gas line.**

Watch out for cracks in the inside glass tube after installation.

Flush the cartridge / whole system for 15 min. with pure carrier gas, advised pressure: 90 psi (620 kPa)

Re-adjust the system pressure to the required pressure needed for your analytical application. Max. 15 bar (217 psi or 1500 kPa)

2.8 Enable QR Code status monitoring

1. Scan the QR Code on top of the filter with your phone or tablet
2. Set Installation Date

After activation, when you scan the QR Code again you can:

- View current status of filter
- Set maintenance reminders
- Get technical support
- Re-order

