



GC consumables

# Super Clean gas cartridge filters

Product manual

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# Introduction

Thermo Scientific™ Super Clean™ gas cartridge filters 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 cartridge filters are connected to an appropriate genuine base plate which is installed into the gas line.

## Technical specifications

Filter type	H <sub>2</sub> O (gr)	O <sub>2</sub> (ml)	THC (gr)	Usable for (gas type)
Moisture	7.2	-	-	C, A, He, H <sub>2</sub>
Oxygen	-	150	-	C
Hydrocarbon	-	-	12	C, A, H <sub>2</sub>
Combi (Moisture + hydrocarbons)	3.5	-	6	A, H <sub>2</sub>
Triple (Moisture + oxygen + hydrocarbons)	1.8	75	4	C, He, H <sub>2</sub>

C = Inert carrier gas  
He = Helium  
H<sub>2</sub> = Hydrogen  
A = Air

All cartridge filters 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%

## Safety information

- The maximum concentration of oxygen allowed in the gas is 0.5%. (valid only for each filter packed with O<sub>2</sub>-adsorbent and O<sub>2</sub>-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)

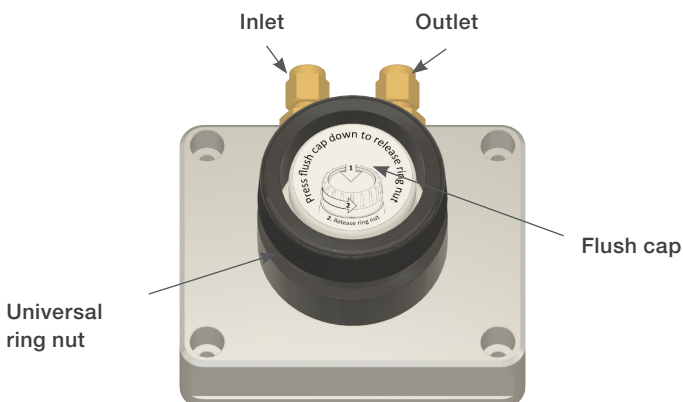
## Patent notices

Description	Cat. no.
Europe	EP2734962 B1
Singapore	196669
China	ZL 201280037276.6
United States	9,715,673

# Installation

## Super Clean gas cartridge filter baseplate

The Thermo Scientific™ 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. 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.

### 2. Installation instructions

- Switch off the incoming gas
- Cut the gas line using an appropriate metal tubing cutter
- Hand-tighten the incoming gas line tubing to the rear end-fitting marked IN at the base plate; keep the connection loose
- Switch on the incoming gas and flush the gas line for 10 minutes with pure carrier gas, minimum pressure: 8 psi
- Connect the incoming gas line tight to the rear end-fitting (do not over-tighten)
- Make sure that the flush cap and universal ring nut are well mounted on the base plate
- Fixate the base plate with screws using the mounting holes or use an optional wall mounting bracket
- 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"

### 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).

# Installation (continued)

## Super Clean gas cartridge filter

### 1. Important information before you start

- Install the Super Clean gas cartridge filter 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. Remove the flush cap and universal ring nut

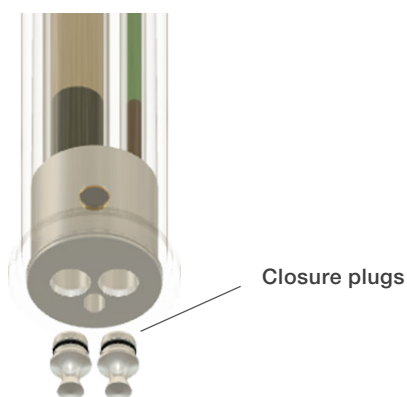
Before installing a filter make sure the base plate is properly connected to the gas line, and the system has been flushed. While pushing down on the flush cap, remove the universal ring nut by turning the ring nut counter clockwise. Remove the flush cap.



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

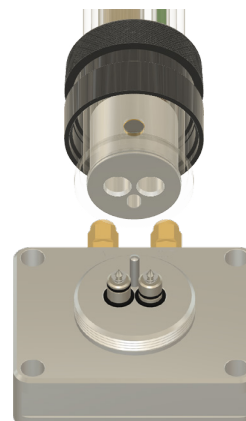
### 3. Remove the closure plugs

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

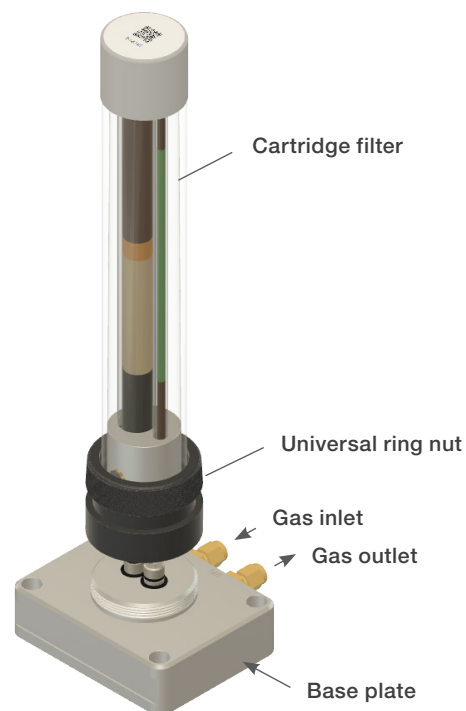


### 4. Align the filter with the base plate

- Use the Thermo Scientific universal ring nut from the base plate and place it around the cartridge filter
- Align the cartridge filter with the base plate, making sure all three holes align with the two valves and positioning pin



### 5. Position the filter on the base plate



# Installation (continued)

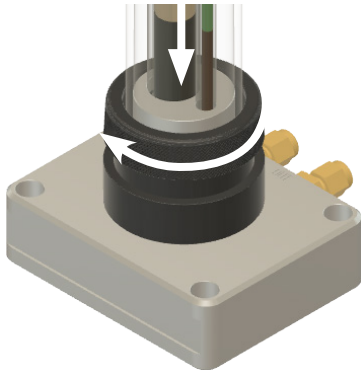
## 6. Install the filter onto the base plate

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 filter, 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 filter 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 cartridge filter to the base plate, highly pure gas will automatically stream from the filter into the analytical system

## 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 filter/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).



# System requirements

## Maintenance

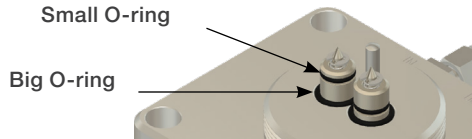
### 1. Replacement of a cartridge filter

Loosen the universal ring nut and remove the used cartridge filter from base plate. Install a new cartridge filter according to the steps under 'Installation of Super Clean cartridge filters'.

A cartridge filter 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 cartridge filter when the visual indicators start changing color.

### 2. Base plate maintenance

Check both the big and small O-rings on the base plate for hair cracks when replacing the cartridge filter. 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 pieces of small O-rings are included with each replacement cartridge filter. Big O-rings need to be ordered separately).



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

## Disposal



Saturated cartridge filter 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 cartridge filter. For recycling, please contact your local supplier.



**RoHS**  
compliant



# Ordering information

Description	Cat. no.
<b>Super Clean gas cartridge filter baseplates</b>	
Base plate for 1 filter	<a href="#">60180-814</a>
Base plate for 2 filters	<a href="#">60180-815</a>
Base plate for 3 filters	<a href="#">60180-817</a>
Base plate for 4 filters	<a href="#">60180-818</a>
<b>Super Clean gas cartridge filters</b>	
Indicating moisture cartridge filter	<a href="#">60180-819</a>
Indicating oxygen cartridge filter	<a href="#">60180-820</a>
Hydrocarbon cartridge filter	<a href="#">60180-821</a>
Super Clean gas cartridge filter with 3 cartridge pack (Triple + 2 × HC/H <sub>2</sub> O combi)	<a href="#">60180-822</a>
Indicating triple filter (O <sub>2</sub> /H <sub>2</sub> O/HC) He specific	<a href="#">60180-825</a>
Indicating combi filter (HC/H <sub>2</sub> O)	<a href="#">60180-826</a>
Super Clean gas cartridge filter with 4 cartridge pack (O <sub>2</sub> /H <sub>2</sub> O + 2 × HC + base)	<a href="#">60180-827</a>
Indicating triple filter (O <sub>2</sub> /H <sub>2</sub> O/HC)	<a href="#">60180-824</a>
Super Clean gas cartridge filter with 3 cartridge pack (Triple + 2 × Combi + base)	<a href="#">60180-828</a>
Indicating triple filter (O <sub>2</sub> /H <sub>2</sub> O/HC) He specific + base	<a href="#">60180-829</a>
Indicating triple filter (O <sub>2</sub> /H <sub>2</sub> O/HC) + base	<a href="#">60180-830TS</a>
<b>Accessories</b>	
Universal ring nut for SuperClean filter	<a href="#">60180-845</a>
Replacement O-rings for SuperClean base	<a href="#">60180-837</a>
Flush cap for filter base	<a href="#">60180-838</a>
GLD Pro Gas Leak Detector	<a href="#">66002-004</a>
GFM Pro Gas Flowmeter	<a href="#">66002-010</a>
<b>Connector sets</b>	
1/4" brass, 3 sets of two connectors (in- and outlet) for base plate	<a href="#">60180-851</a>
1/8" brass, 3 sets of two connectors (in- and outlet) for base plate	<a href="#">60180-852</a>
1/4" SS, 3 sets of two connectors (in- and outlet) for base plate	<a href="#">60180-853</a>
1/8" SS, 3 sets of two connectors (in- and outlet) for base plate	<a href="#">60180-854</a>

 Learn more at [thermofisher.com/gcgasfilters](https://www.thermofisher.com/gcgasfilters)