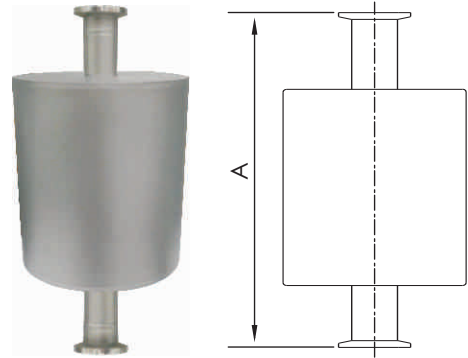


Traps

FORELINE TRAPS SEALED METAL TYPE

- *Filter Material: Copper Wool
- *Filter Type: Sealed Type
- *Surface Finish: Bead Blast
- *Body Material: SS 304L

Part Number	Flange Size	Body OD	A
FT-S-KF16	KF16	101.6	241.30
FT-S-KF25	KF25	101.6	224.54
FT-S-KF40	KF40	101.6	226.52
FT-S-KF50	KF50	101.6	227.33



TR
HJ

Traps

TRAPS for Silicon Nitride LPCVD

In silicon nitride LPCVD process using DCS (SiCl_2H_2) and NH_3 , NH_4Cl is always formed as a by-product during the deposition process. It condenses into solid and deposits on any inner surface along the pumping line when its temperature is below its sublimation temperature as shown in the vapor pressure curve on the right. For most of silicon nitride LPCVD processes, this temperature is around 150°C for foreline (before the vacuum pump), and can be much higher ($>180^\circ\text{C}$) in exhaust line after vacuum pump due to higher partial pressure after compression inside the vacuum pump.

Due to the exponential relationship between the vapor pressure and temperature, the accumulation of solid NH_4Cl is very rapid on any cold spot along the pumping line as commonly observed in many deposition tools, this also poses a challenge for a trap as its entrance could be clogged quickly if the trap is not properly designed.

AdvanTorr Trap is optimized for both trapping capacity and efficiency by sending the deposition effectively into the trap body.

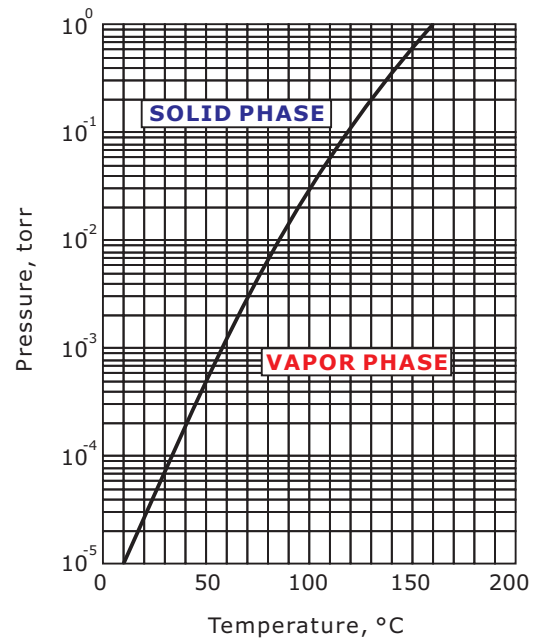
Cooling at the trap exit ensures high trapping efficiency and minimizes its impact on trapping capacity.

Trap with a high capacity and efficiency in pump foreline line can be very effective as it reduces the number of heaters used for pumping line, extends the pump life, and prolongs the time between PM of the tool, including scrubber.

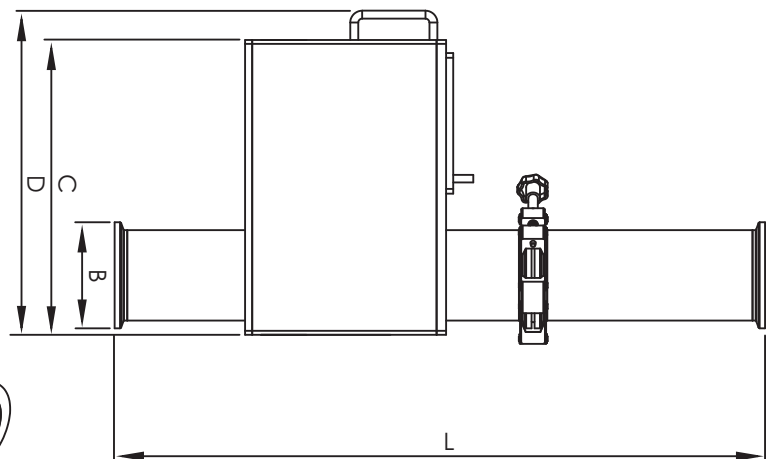
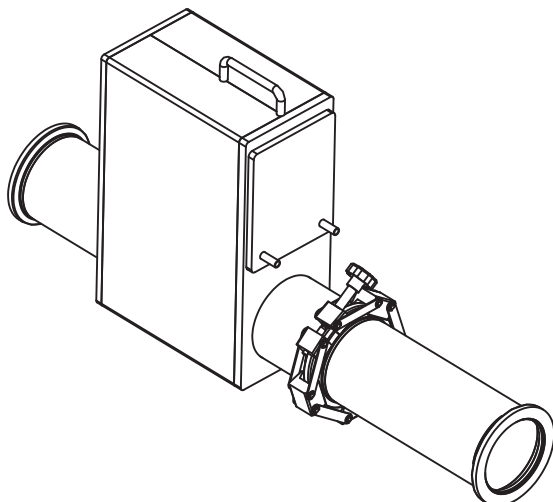
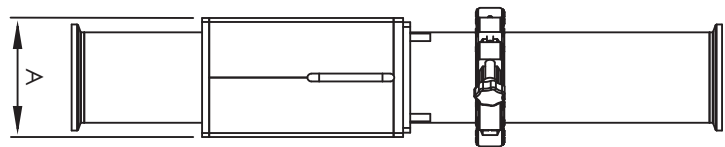
Specifications:

- * Trapping capacity: $>5\text{kg}$
- * Trapping efficiency: $>99\%$
- * Conductance (L/sec): $60 \times P(\text{mtorr})$, (note: conductance is a function of pressure in viscous flow regime)
- * Cooling water: $>0.3\text{L}/\text{min}$, optional if flow rate is low.
- * Cooling water temperature: $<20^\circ\text{C}$. Lower is better.
- * Weight: 10.8kg

VAPOR PRESSURE CURVE FOR NH_4Cl



Part Number	Flange Size	A	B	C	D	L
T-KF-100	KF100	150	134	373	410	822



TR
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