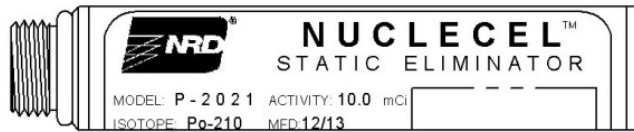


Installation / Operation / Maintenance

Staticmaster® End-of-Line Standard Ionizer Model P-2021 Series



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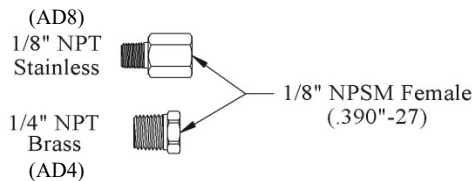
1.0 In-line Ionizers



The P-2021 In-Line Ionizers neutralize static charges and removes dust and other foreign particulate by providing a powerful stream of ionized gas across affected parts. They are designed for applications where high gas pressure and velocity are desirable.

1.1 Installation & Operation

- A. The P-2021 In-Line Ionizers can be operated with the flow of gas in either direction. Mounting connections are 1/8" NPSM (.390"-27) male and female thread. On the male end an "O"-ring is included for sealing. Provide a suitable mating connector at the end of the gas supply hose to connect to the ionizer. The In-Line Ionizer can be attached to a gun handle, manifold, or as part of your production equipment. See below for optional mounting adapters.



Optional Adapters

Note: Ensure that the gas supply is properly filtered and that attached hoses are clean and dry. Inquire about filter options. The gas can be air or an inert gas such as nitrogen.

- B. Attach the ionizer to the hose fitting and tighten securely. An "O"-ring is provided on the threaded end of the cell to seal the connection. If the parts become loosened, apply a small amount of removable adhesive (Loctite 242) to the threads.
- C. When attaching an exit tube on the ionizer, keep the tube length as short as possible and avoid attaching a very small tube diameter. Long exit tube lengths or very small tube diameters are not recommended for this will restrict gas flow and reduce ionizer effectiveness.
- D. Apply gas pressure and regulate it to the desired level. Do not exceed an inlet pressure of 100 psig. A powerful stream of ionized gas will flow over objects and quickly neutralize electrostatic charges, and remove dust and other foreign particulate clinging due to static attraction.

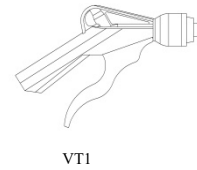
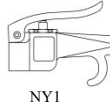


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2.0 Accessories

2.1 Gun Handles



Usage

An In-Line Ionizer will connect to a gun handle to control air activation and direct the flow where it is needed. The gun system will neutralize static charges and remove dust and other foreign particulate by providing a powerful stream of ionized air across affected parts. All accessories including gun handles are purchased and can be replaced as needed.

- A. Screw the nozzle tip into the P-2021 Ion Cell and tighten.
- B. Hand tighten the Ion Cell onto the gun handle so that the “O”-ring provides sealing. If the ionizer becomes loosened, apply a small amount of adhesive to the threads-Loctite 242. (Note: Model P-2021 cell does not require an “O”-ring when used with the PK1 and VT1 Cleanroom Gun.)

- C. Provide a 1/4” NPT male fitting to the end of an airline to be connected to the gun.

Note: Ensure that the air supply is appropriately filtered and that attached hoses are clean and dry. Inquire about filter options.

- D. Attach the gun to the 1/4” NPT hose fitting by screwing the base of the handle securely into the fitting. Use teflon tape as needed.
- E. Set pressure to 40 psig first to determine if this supplies sufficient air volume and pressure to remove static and debris from surface. You can adjust the pressure depending on your application. **MAXIMUM PRESSURE 100 PSIG** Note: Model PK1 and VT1 cleanroom handle max. 80 psig. (50 psig with filter option)
- F. Always use an OSHA approved safety tip to prevent air pressure injury in the case the end is dead ended against a person’s skin. All tips provided by NRD meet OSHA requirements. The Ion Air Gun is now ready to remove static charges.
- G. Point the gun up to three feet away from the object and squeeze the trigger. A powerful stream of ionized air will flow over the objects and quickly neutralize electrostatic charges and remove dust and other foreign particulate clinging due to static attraction.



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3.0 Maintenance & Troubleshooting

Maintenance

- The only maintenance required is the annual replacement of the device to ensure maximum effectiveness of the ionizer. Return the expired device to NRD for proper disposal.
- Calibration is not required.
- Air pressure not to exceed 100 psig at the inlet of device.

Trouble Shooting Guide


<u>Symptom</u>	<u>Probable Cause</u>	<u>Corrective Action</u>
1. Static charges are not eliminated	<p>Ion cell may be out of date and need replacement.</p> <p>Possible oil contamination of ion cell.</p> <p>Ions generated are being recombined before they reach the charged surface.</p>	<p>Call NRD for Ion Cell replacement.</p> <p>Return cell to NRD for evaluation. Do not attempt to clean the device.</p> <p>The Ionizer air exit needs to be closer to the charged surface.</p>
2. Air flow is reduced.	Upstream filter(s) are plugged and/or gas pressure is low.	Replace upstream filter(s) and/or increase gas pressure (100 psig max.)
3. Squeezing gun handle trigger does not initiate gas flow.	<p>Gas line is shut off or obstructed.</p> <p>Trigger plunger mechanism damaged.</p>	<p>Open all shutoff valves and check for kink in line or other obstructions.</p> <p>Contact NRD for replacement gun.</p>
4. Releasing trigger does not stop the gas flow.	Foreign matter trapped in the shutoff valve of the gun.	Clean gas hoses, replace upstream filter(s) and contact NRD for replacement gun.



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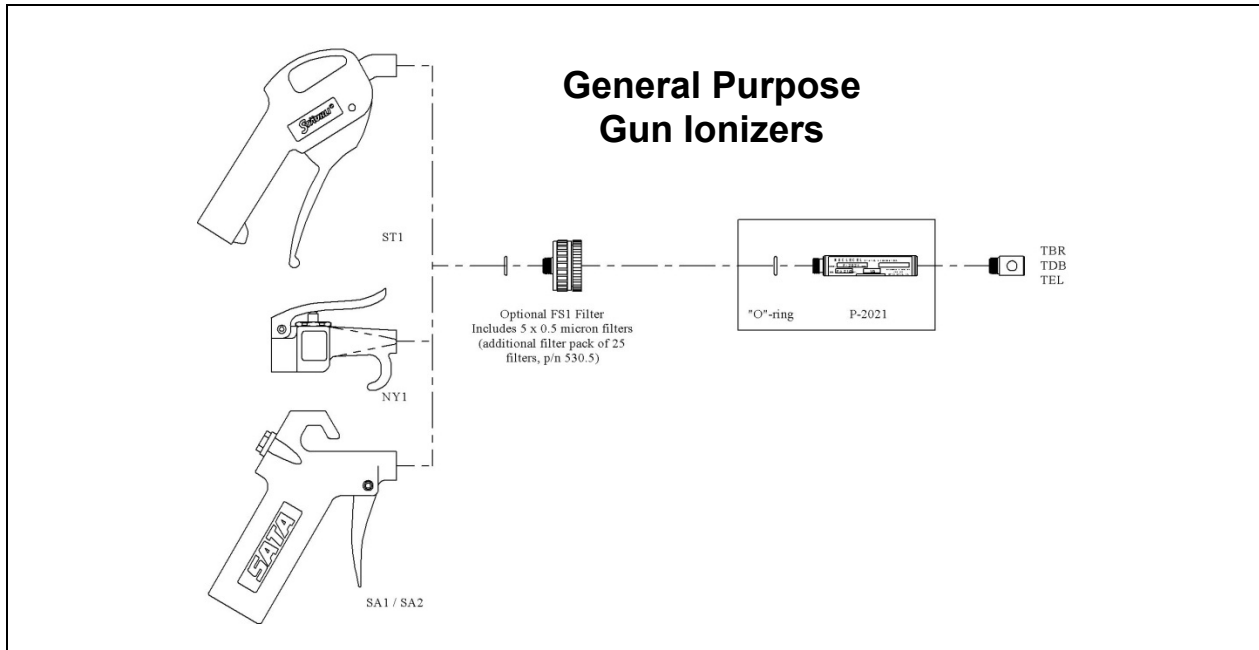
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PRODUCT MODEL DESIGNATION MATRIX

MODEL	MATERIAL	HOLDER	FILTER	TIP
 P-2021	1 – 316 Stainless	0 – None	0 – None	0 – None
	2 – FR	1 – NY1 (Nycoil G1C-N)	1 – FS1	1 – TBR (Brass tip)
	5 – EL (electropolished)	2 – ST1 (Staubli)	3 – 556.5 Filter (PK1)	2 – TEL (SS tip)
	6 – 316 SS EL (no “O”-ring)	3 – SA1 (Sata)	4 – FS2	5 – TDB (Delrin tip)
	8 – 303 Stainless	4 – PK1 (Parker)	5 – 555.5 Filter (VT1)	
	9 – 316 SS (Ni plated foil)	5 – VT1 (Cleanroom Pkg.)		
	Z – 316 SS Autobody	7 – SA2 (Special Sata)		
Y – EL, Ni (cleanroom prep)	9 – SA4 (Special Sata)			

P-2021-MATERIAL,HOLDER,FILTER,TIP: EXAMPLE P-2021-1232

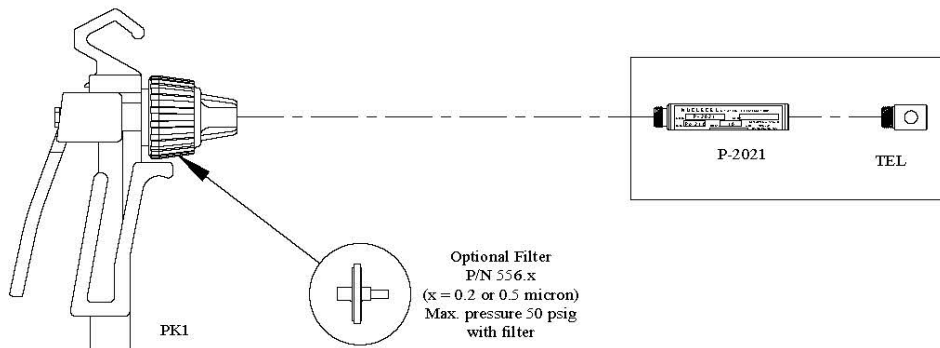
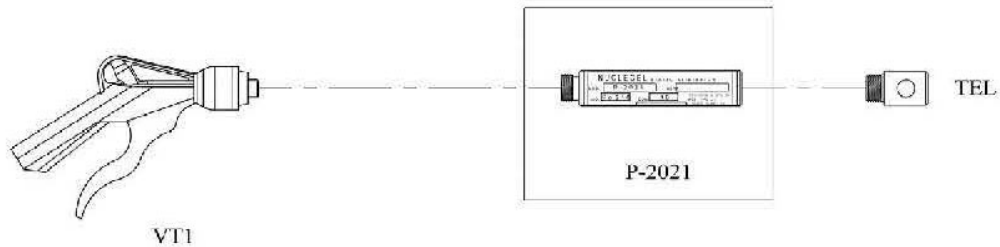
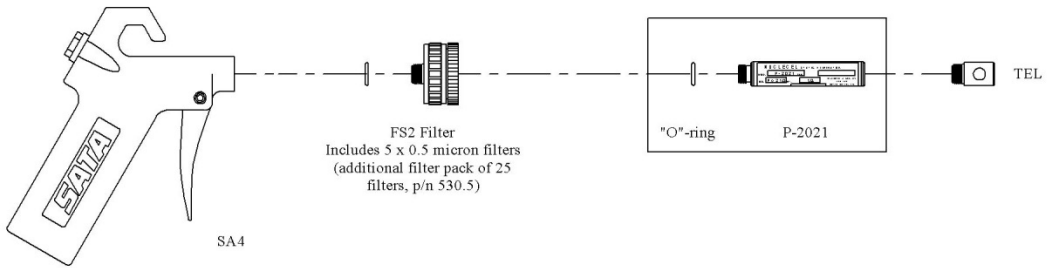
ASSEMBLY & INSTALLATION IN-LINE IONIZERS



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Cleanroom Gun Ionizer



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