

Ion beam preparation products and plasma cleaners

Fischione Instruments preventive maintenance program

Protect your investment and your budget with Fischione Instruments preventive maintenance program. Fischione offers annual preventive maintenance services for ion beam preparation and plasma cleaning products. A preventive maintenance program reduces the risk of unexpected repair costs and instrument downtime.

Annual preventive maintenance performed on site or at Fischione

Preventive maintenance task	Model 1040 NanoMill® TEM specimen preparation system	Model 1080 PicoMill® TEM specimen preparation system	Model 1050 TEM Mill Model 1060 SEM Mill	Model 1020 Plasma Cleaner Model 1070 NanoClean
Evaluate instrument and instrument operation	✓	✓	✓	✓
Complete leak test (helium leak test available only at Fischione factory)	✓	✓	✓	✓
Test mass flow controller (test available only on-site at Fischione)	✓	✓	✓	✓
Clean/replace ion sources	✓	✓	✓	
Replace vacuum gauge	✓	✓		
Install warranty design upgrades, if needed	✓	✓	✓	✓
Replace ion source and ion source feed-through/bearing O-rings	✓	✓	✓	
Clean/replace stage and Z-axis* items, e.g., window, O-rings (Z-axis maintenance available only at Fischione factory)			✓	
Replace Faraday cup O-ring†; check laser and detector			✓	
Replace load lock O-rings	✓	✓	✓	
Lubricate and check alignment of sample loading rod or goniometer	✓	✓		
Check ion source drive assemblies (Premium edition models)			✓	
Check motor drive gear lock screws (Premium edition models)			✓	
Complete any needed repairs (additional scope will be quoted, replacement pumps not included)	✓	✓	✓	✓
Check vacuum operation; purge	✓	✓	✓	✓
Recalibrate and align ion beams	✓	✓	✓	
Replace applicable O-rings				✓

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Preventive maintenance task	Model 1040 NanoMill® TEM specimen preparation system	Model 1080 PicoMill® TEM specimen preparation system	Model 1050 TEM Mill Model 1060 SEM Mill	Model 1020 Plasma Cleaner Model 1070 NanoClean
Replace remaining O-rings				✓
Advise user to exchange diaphragms on rough pump or arrange for service on turbomolecular drag pump when required (user must arrange directly with pump supplier)				✓
Clean air filters	✓	✓	✓	✓
Tune				✓
Complete final operational checks	✓	✓	✓	✓
Recommend next preventive maintenance date	✓	✓	✓	✓

* Model 1050 TEM Mill only.

† Model 1060 SEM Mill only.

Refer to the product instruction manual for specific maintenance and service information.

Recommended consumables and spare parts

The following items may be required when completing preventive maintenance tasks. Consider replenishing consumables at the time of the preventive maintenance visit.

Model 1020 Plasma Cleaner

Part number	Description	Quantity
327-0012	Pirani gauge	1
387-0030	O-ring; Viton; -140	TBD
-----	Port/plug assembly O-rings, determined by configuration.	-----

Model 1040 NanoMill® TEM specimen preparation system

Part number	Description	Quantity
039-0265	Ion source assembly	1
387-0060	O-ring; load lock; Viton; -234	1
500-0249	Vacuum gauge; cold cathode; full range	1
500-1161	Ion source O-ring	1
500-1213	Valve; angle; pneumatically activated; KF16; 24 VDC	1
500-2633	Ion source tubing; gas lines	1

Model 1050 TEM Mill

Part number	Description	Quantity
041-0381-06	Ion source; feed through, cathode, anode, and magnet assembly	2
041-0398	Ground cap; Penning ion source	2

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Part number	Description	Quantity
041-0691	Kit; O-ring; ion source	2
500-0229	O-ring; Viton; -134	1
500-2340	O-ring; Viton; -142	2
500-2383	O-ring; Viton; -122	1
500-2973	Window; coverslip; 8 mm diameter x 0.15 mm (#1)	1

Model 1060 SEM Mill

Part number	Description	Quantity
041-0381-06	Ion source; feed through, cathode, anode and magnet assembly	2
041-0398	Ground cap; Penning ion source	2
041-0691	Kit; O-ring; ion source	2
500-0229	O-ring; Viton; -134	1
500-0231	O-ring; Viton; -219	1
500-2340	O-ring; Viton; -142	2
500-1202	O-ring; Viton; -108; double seal	1

Model 1070 NanoClean

Part number	Description	Quantity
327-0012	Piranin gauge	1
387-0064	O-ring; Viton; -239	1
500-2383	O-ring; Viton; -122	2
-----	Port/plug assembly O-rings, determined by configuration.	-----

Annual parts replacement

The following items should be exchanged once per year by Fischione representatives.

Model 1080 PicoMill

Part number	Description	Quantity
042-0945	Ion source assembly	1
500-0249	Vacuum gauge; cold cathode; full range (chamber gauge)	1
500-3280	Cathode; tungsten filament (additional cathodes as needed)	2
500-3894	Vacuum gauge; cold cathode; full range (column gauge)	1
Miscellaneous	Other items as needed, based on product operation	-----

Fischione Instruments offers

- **Technical expertise.** Fischione has designed, manufactured, and serviced sample preparation instrumentation for more than 50 years.
- **Trained field service engineers.** Our team has experience in our production operations, as well as service roles, and is well-equipped to troubleshoot any product challenges.
- **Factory-certified parts.** Fischione designs and manufactures approximately 90% of its product parts. With the exception of

vacuum pumps, all instrument parts are Fischione factory certified.

- **State-of-the-art facilities.** Fischione uses state-of-the-art technology in its applications, engineering, manufacturing, and customer relationship management activities.

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exceptional
customer
service

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The NanoMill TEM specimen preparation system is the subject of United States Patent Nos. 7,132,673 and 7,504,623. Other patents pending.

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Document Number SV004 Revision 02.08/2016

Made in the
USA

Fischione products are designed and manufactured in Export, PA USA.