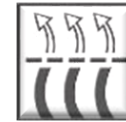


Air Filtration Systems Filter Maintenance Guide



YOUR ONE-STOP-SHOP
FOR MACHINE-TOOL PERIPHERALS

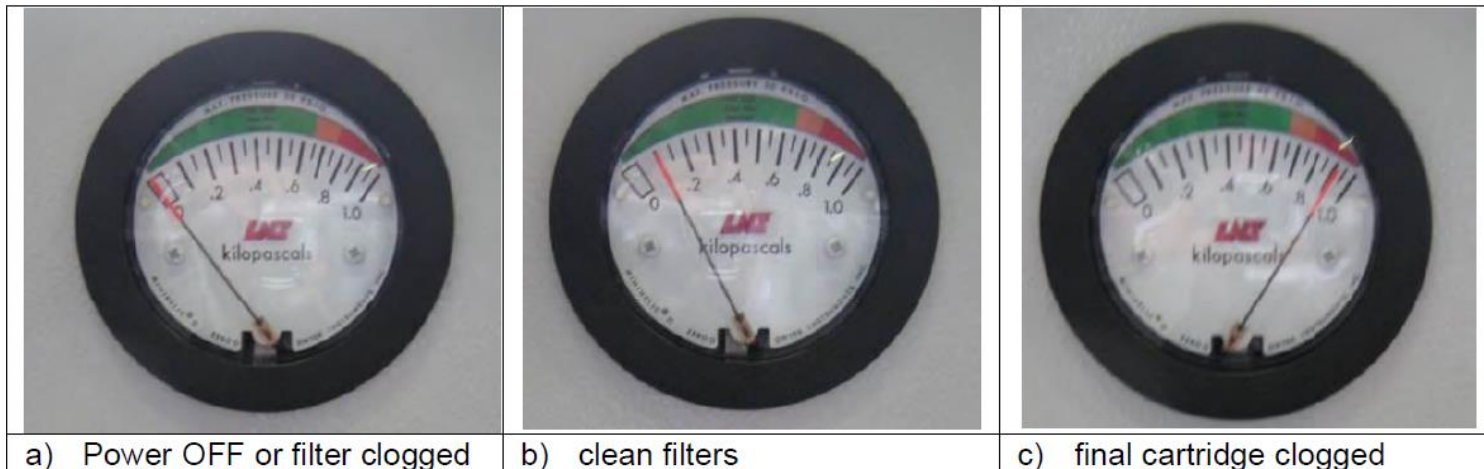


AIR FILTRATION SYSTEMS






1. Filter Maintenance

- Clogging of the First Stage Pre-Filter and Main Stage Filter is indicated by the pressure level given by the pressure gauges, located beside the control panel.
- Filter conditions can be correctly estimated by the needle position as indicated below:
 - **Needle near zero (a):** No air flow. This may be due to two causes:
 - The purifier is off (OFF)
 - The pre-filter is clogged
 - **Needle between 0.1 kpa and 0.2 kpa (b):** Filters clean, unit correctly operating.
 - **Needle in red zone (c):** Filters highly clogged, replace with new filters.



Note




In the event of significant quantities of metallic dust or oily sludge, the prefilter stage may require more frequent maintenance compared to that which is required by the main stage. In these situations, it is advisable to check the prefilter stage more frequently than is indicated in the maintenance section.

		<p><u>Personal Safety – Unit Integrity</u></p> <ul style="list-style-type: none"> • Before servicing the unit: • Press the stop button on the motor protector switch, lock out the start up button, close the protective lid and remove the keys. • Isolate the unit from electrical power sources making sure no one can restore electric power; to this purpose, insert the padlocks and all other required devices on the power line. • Use signs or other appropriate means to indicate that maintenance is being done on the unit. • Wear proper protective clothing such as gloves, safety shoes, etc. while maintenance is being done. • To prevent injuries to persons or damages to things, unit maintenance must be done by specialised personnel in compliance with safety procedures. • Before reusing the nuts and bolts, make sure they are in perfect condition, otherwise replace them with new components that are identical to the original ones. Self-locking nuts must always be replaced with new components.
	<p><u>Note</u> The below maintenance intervals are indicative and refer to average situations as they may change considerably according to the type and quantity of pollutant in the air extracted.</p>	


		Cleaning	Replacement	Inspection/ check
PREFILTRATION (stage 1)	prefilter compartment	Every 1000 hours		
	prefilter		When indicated by the pressure gauge	Every 1000 hours
CENTRIFUGAL FILTRATION (stage 2)	impeller case			Every 2000 hours
	drainage ring			Every 2000 hours
	impeller			Every 2000 hours
MAIN FILTRATION (stage 3)	Cartridge filter		When indicated by the pressure gauge	
Liquid exhausting tube	Trap maintenance Flush to avoid clogging	Every 2000 hours		Every 1000 hours

2. First Stage Pre-Filter Maintenance

- Release the safety spring and open the latches
- Use the provided handle to lift the Upper Cabinet, until it opens completely
- Unscrew the Center Pre-Filter knob
- Remove the entire Pre-Filter
- Unscrew the Outer Pre-Filter knobs
- Remove the Pre-Filter top and micro-expanded metal (if installed)
- If necessary, clean the Pre-Filter micro-expanded metal with a brush
- Open the Velcro closure (if Emulsion Pre-Filter), and remove the Pre-Filter media
- Remove any deposits inside the prefilter compartment, avoiding removal of the protective paint or sealing
- Make sure the drainage slots of the impeller case are not obstructed, and can discharge the liquids easily
- Make sure that the seal between the prefilter and impeller case is intact, and holds properly


	<p><u>Unit Integrity</u> Cleaning must not be done with metal tools such as spatulas, brushes or other abrasive objects which may remove or damage the protective layer and sealing of the walls and bottom of the unit.</p>
	<p><u>Note</u> If the drainage slots are obstructed, remove and clean the impeller case as indicated in the “<u>Centrifugal stage maintenance</u>” section of the manual. If the seal is worn or broken, replace it as indicated in the “<u>Seal maintenance</u>” section of the manual.</p>
	<p><u>Unit Integrity</u> Imperfect reassembly of the filter may cause problems in closing the movable part and/or reduced main filter product life. Make sure the prefilter is properly closed!</p>

2. First Stage Pre-Filter Maintenance

	<p><u>Personal safety</u> Do not remove the pre-filter for any reason while the unit is on. Removing the pre-filter while the unit is on will expose you to hazards of a mechanical nature (dragging, cutting, shearing etc.) due to rotation of the impeller.</p>
---	---

Initial Pressure Value

Model	WS 2 170	WS 2 330	WS 2 700	WS 2 1020	WS 2 1250
Initial Pressure Value at 60 Hz	100 ± 20 Pa	120 ± 25 Pa	150 ± 30 Pa	160 ± 50 Pa	160 ± 50 Pa

	<p><u>Note</u> The initial pressure values (with clean filters) are indicative and may vary due to extraction system features. (tube diameter and length, curves, valves, etc.)</p>
---	---

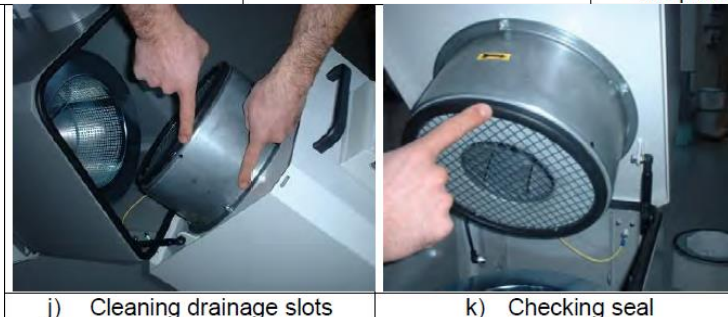
Pressure Value For Maintenance

Model	WS 2 170	WS 2 330	WS 2 700	WS 2 1020	WS 2 1250
Max Pressure at 60 Hz	350 Pa	450 Pa	750 Pa	800 Pa	800 Pa

2. First Stage Pre-Filter Maintenance: Emulsion

		
a) Releasing latches	b) Lock hand wheel	c) Prefilter removal
		
d) Unscrew the lock hand wheels	e) Opening prefilter	f) Expanded metal removal
		
g) Prefilter removal	h) Prefilter replacement: sleeve prefilter installation (WS250-1500-2000 only)	i) Prefilter replacement with Velcro
		
j) Expanded metal positioning	k) Positioning top part	l) Filter closure with hand wheels

2. First Stage Pre-Filter Maintenance: Oil



2. First Stage Pre-Filter Maintenance

- After having checked the correct positioning of each component, tighten the Outer Pre-Filter knobs
- Make sure the support base on the bottom of the Pre-Filter compartment is clean and free of chips (or other foreign material)
- Reposition the entire Pre-Filter inside the Pre-Filter compartment, and tighten the knob (ensuring not to overtighten)
- Make sure that the fitting between the Pre-Filter and Impeller Case Seal is clean
- Close the Upper Cabinet using the provided handle



a) Filter re-positioning



b) Tightening filter with knob



c) Closing movable part



Note


Excessive resistance while closing the movable part is a sign that the prefilter is improperly assembled or that there is foreign material between the bottom of the prefilter compartment and the lower surface of the prefilter. In this situation, find the cause of the problem and solve it before closing the movable part.



Unit Integrity


The length of the latches is adjustable and set in the factory, so they are sufficiently tight to guarantee proper sealing. To prevent problems or malfunctions, do not adjust the setting of these components

3. Main Stage Filter Maintenance

	<p><u>Personal safety</u></p> <p>Do not remove the main filter for any reason while the unit is on. Removing the main filter while the unit is on will expose you to hazards of a mechanical nature (dragging, cutting, shearing etc.) due to rotation of the impeller. To prevent the filter from being removed manually by unauthorized personnel, tighten the nut on the main filter with a tool.</p>
---	---

Initial Pressure Value

Model	WS 2 170	WS 2 330	WS 2 700	WS 2 1020	WS 2 1250
Initial pressure value at 60 Hz	100 ± 20 Pa	120 ± 25 Pa	150 ± 30 Pa	160 ± 50 Pa	160 ± 50 Pa

	<p><u>Note</u></p> <p>The initial pressure values (with clean filters) are indicative and may vary due to extraction system features. (tube diameter and length, curves, valves, etc.)</p>
---	---

Pressure Value For Maintenance

Model	WS 2 170	WS 2 330	WS 2 700	WS 2 1020	WS 2 1250
Max Pressure at 60 Hz	350 Pa	450 Pa	750 Pa	850 Pa	900 Pa

3. Main Stage Filter Maintenance

- Remove the protective grille turning the magnetic catches or with ¼ turn
- Unscrew the nut on the Main Stage Filter
- Remove the Main Stage Filter



a) View of the pressure gauge



b) Removal rear cover with magnetic catches



c) Removing rear cover with catches with ¼ turns



d) Main filter release



e) Main filter removal




f) Main filter lock



Note


The glass microfibre cartridge cannot be cleaned; replace the entire cartridge when necessary.

4. HEPA Filter Maintenance

	<p><i>Personal safety</i> Do not remove the HEPA filter for any reason while the unit is on. Removing the HEPA filter while the unit is on will expose you to hazards of a mechanical nature (dragging, cutting, shearing etc.) due to rotation of the impeller.</p>
---	---

Initial Pressure Value

Model	WS 500/330	WS 1000/700	WS 1500/1020	WS 2000/1250
Max Pressure 50 Hz	150-200 Pa	200 - 250 Pa	200 -250 Pa	200 -250 Pa
Max Pressure 60 Hz	200-250 Pa	250 -300Pa	250 -300 Pa	250 -300 Pa

	<p><i>Note</i> The initial pressure values (with clean filters) are indicative and may vary due to extraction system features. (tube diameter and length, curves, valves, etc.)</p>
---	---

	Replacement	Periodic Check
ABSOLUTE FILTER	Upon indication of the pressure gauge	Every 1000 hours

Pressure Value For Maintenance

Model	WS 500/330	WS 1000/700	WS 1500/1020	WS 2000/1250
Max Pressure 50 Hz	450 Pa	750 Pa	850 Pa	900 Pa
Max Pressure 60 Hz	500 Pa	820Pa	1000 Pa	1000 Pa

4. HEPA Filter Maintenance

- Remove the top cover
- Unscrew the knobs and remove the absolute filter element
 - If applicable, refer to the Main Filter Maintenance Section to replace Main Filter.
- Insert the new absolute filter on the module
- Position the absolute filter and secure with the knobs
- Place the top cover on the module



Fig.11) Remove the top cover

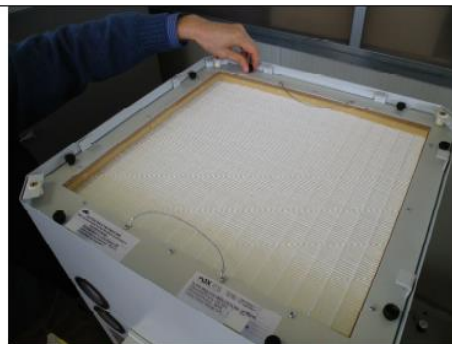


Fig.b) Unscrew the knobs and remove the absolute filter element



Fig.c) Remove clogged absolute filter



Fig.d) Insert new absolute filter

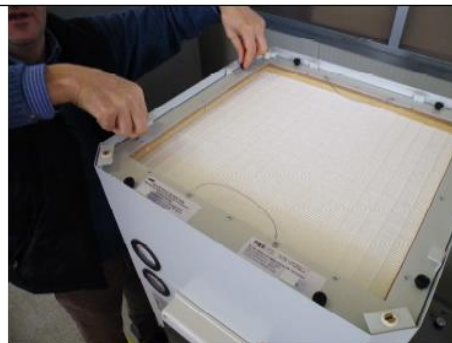


Fig.e) Position the absolute filter and secure with the knobs












Fig.f) Place top cover on the module

5. Ensure You Are Using The Proper Filters For The Application

- Emulsion Filters
 - Only used for water-based coolants.
- Oil Filters
 - Used for Oil. Can also be used for water-based coolants with high coolant concentrations and trace amounts of oil (i.e., oil-based synthetic and semi-synthetic coolants).
- The next page shows the differences between Emulsion and Oil Filters.



	PREFILTER	MAIN FILTER
NON-FLUOROPOLYMER	   <p data-bbox="272 729 672 815">Internal extra filter sleeve provided on 170/1020/1250</p>	  <p data-bbox="1514 277 1831 344">Internal filter sleeve not provided on WS170</p>
FLUOROPOLYMER	   <p data-bbox="233 1296 394 1410">Expanded metal not needed</p> <p data-bbox="426 1325 697 1410">Upper and lower gasket provided</p>	

Additional Notes:

- Wipe out the mist collector cabinet with each filter change.
- Inspect inlet hose for blockage and clean out before running the mist collector again.
- Inspect drain line for blockage and flush line with coolant / oil being used.
 - Helps to keep the drain line clean from debris.
- Changing the pre-filter more often than the main filter can extend the life of the main filter.



Note

To safeguard the environment and avoid fines, we recommend and ask that you abide by the following indications scrupulously.

- Materials such as filters and seals that are dirty with oil must be disposed of in compliance with the laws in force on the matter of special waste.

Spare Filters Parts List

Qty	PIC	Desc.	WS 170	WS 330	WS 700	WS 1020	WS 1250
1		PRE-FILTER (1st STAGE) - E (WATER-SOLUBLE)	350140000	350081000	350082000	350083000	350084000
1		MAIN FILTER (3rd STAGE) - E (WATER-SOLUBLE)	350121000	350005000	350006000	350007000	350008000
1		FILTER KIT (1st & 3rd STAGE) - E (WATER-SOLUBLE)	F350157000	F350159000	F350161000	F350163000	F350165000
1		PRE-FILTER (1st STAGE) - O (CUTTING OIL)	F350375000	350376000	350377000	350378000	350379000
1		MAIN FILTER (3rd STAGE) - O (CUTTING OIL)	350146000	350147000	350148000	350149000	350150000
1		FILTER KIT (1st & 3rd STAGE) - O (CUTTING OIL)	F350382000	F350383000	F350384000	F350385000	F350386000
1		DRY SMOKE FILTER MODULE (H13 HEPA)	N.D.	F310048000	F310006000	F310007000	F310008000
1		HEPA FILTER (H13)	N.D.	F350105000	F350106000	F350107000	F350108000



THANK YOU FOR YOUR ATTENTION!

Find out more on our website:

www.LNS-america.com



YOUR ONE-STOP-SHOP
FOR MACHINE-TOOL PERIPHERALS