



## High Performing Mist Collectors For Machine tools



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- Specifications
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- Working diagram and filter configurations
- Air quality/filtration efficiency level
- Technical data
- Filter monitoring – LED and HMI config
- Variable Speed – machine tool interface
- Installation supports and Optionals
- Trouble shooting

## Specifications

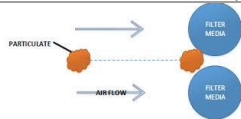
### Product Range

4 + 3 models to perfectly match the specific air flow rate requirements.

EUROPE	 USA
HPM 600 - 600 m3/h HPM 1000 - 1000 m3/h HPM 1500 - 1500 m3/h HPM 2000 - 2000 m3/h	HPM 400 - 400 cfm HPM 700 - 700 cfm HPM 1000 - 1000 cfm HPM 1200 - 2000 cfm
HPM S – 250-500 m3/h HPM M - 600 to1000 m3/h HPM L - 800 to 2000 m3/h	HPM M - 400 to 700 cfm HPM L - 600 to1100 cfm

### Filtration technology

Mechanical separation – Filter media



### Oil/Emulsion filter configurations

Dedicated filters configurations designed for optimal performance (efficiency and lifetime) with the type of coolant used

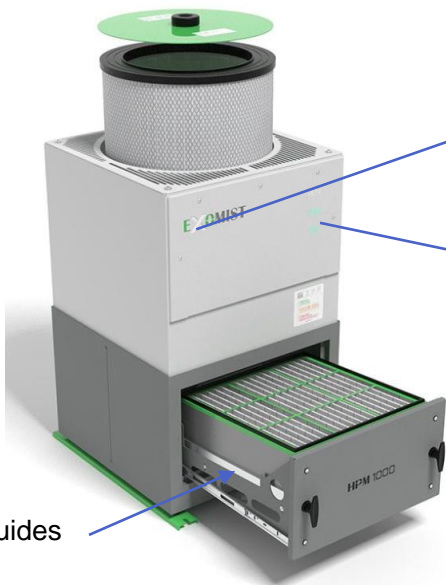
### Filtration efficiency level efficiency

- 99 % (Afnor NFX 44060) for the standard configuration
- 99,97 % with Hepa filter H13 (MPPS according to EN 1822) (additional Absolute filter module)

### 50/60 hz Motors

Multivoltage and multifrequency motors. For European, Japanese and US market. EC IE5 with integrated inverter or IE3 3 phases

## Main Features – STD HPM



- X multi led indicator
- On = green
  - Alarms = blinking or steady red

3 stages Led filter saturation alarm

1	2	3
Green = filters ok	Blinking Red = order spare filters	Still Red = replace filters

Linear guides



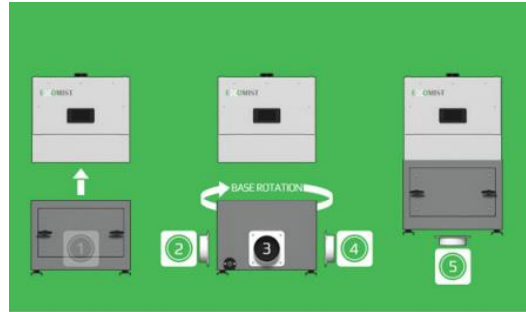
Threaded connector  
(int. female 1 inch)  
Adapter for drainage tube\*



90 degree elbow \*  
+  
Adapter for drainage tube




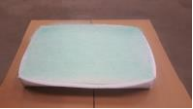
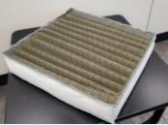

## Main Features 4 +1 Multi inlets

Possibility to have vertical or horizontal inlet. The lower section can be rotated to have direct connection to the inlet and avoid having curves



## HPM Filters Configurations



	Emulsion Config	Oil Config
Hepa Filter (optional)	<p>Hepa filter H13 Efficiency 99,97 % (for H13 MPPS according to EN 1822)</p> 	
Main Filter	<p>M9 Microfiberglass media - EN779 norm Efficiency 99,5 % AFNOR NFX 44-060</p> 	<p>M9 Microfiberglass <b>high loft</b> - EN779 norm Efficiency 99 % AFNOR NFX 44-060</p> 
Prefilter	<p>Multilayers: G3 and G4 acrylic and fiberglass Reusable frame</p> 	<p>Multilayers: High efficiency M5 microfiber + 2 draining Reusable frame</p> 
	<p>Washable reusable aluminium Metallic cell</p> 	

Air quality

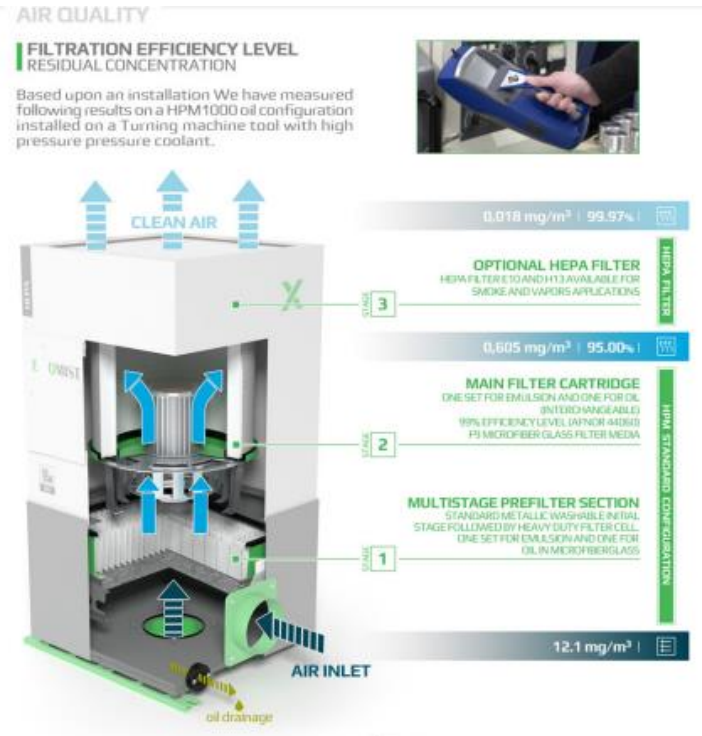
**How clean is the recycled air with HPM installed ?**

Oilmist residual concentration = **mg/m3**

This value is measurable with specific instrument (laser particle counter) and it is given by the efficiency level of the filters used in the mist collector.

**-STD HPM = < 0,5 mg/m3**  
99% according to AFNOR 440060 for standard configuration

**-With additional HEPA filter \* = < 0,1 mg/m3**  
\*H13 according to MPPS according to EN 1822



HPM600 with HEPA filter  
On a Tsugami M08  
Coolant = oil with high pressure

Example of test report with TSI instrument

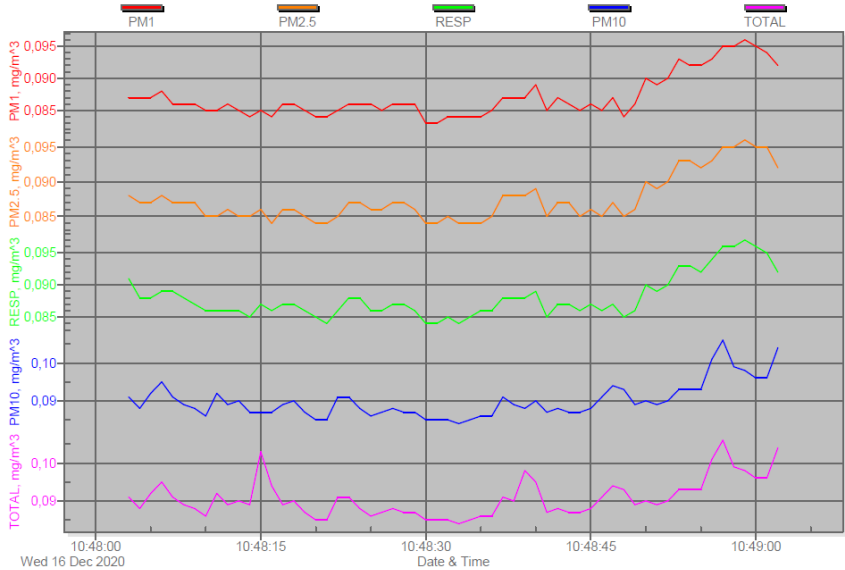


**Test 001**

tsugami m08 piccolo motori

Instrument		Data Properties	
Model	DustTrak DRX	Start Date	16/12/2020
Instrument S/N	8534184701	Start Time	10:48:02
		Stop Date	16/12/2020
		Stop Time	10:49:02
		Total Time	0:00:01:00
		Logging Interval	1 seconds

Statistics					
	PM1	PM2.5	RESP	PM10	TOTAL
Avg	0.087 mg/m <sup>3</sup>	0.087 mg/m <sup>3</sup>	0.088 mg/m <sup>3</sup>	0.090 mg/m <sup>3</sup>	0.091 mg/m <sup>3</sup>
Max	0.096 mg/m <sup>3</sup>	0.096 mg/m <sup>3</sup>	0.097 mg/m <sup>3</sup>	0.106 mg/m <sup>3</sup>	0.106 mg/m <sup>3</sup>
Max Date	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
Max Time	10:48:59	10:48:59	10:48:59	10:48:57	10:48:57
Min	0.083 mg/m <sup>3</sup>	0.084 mg/m <sup>3</sup>	0.084 mg/m <sup>3</sup>	0.084 mg/m <sup>3</sup>	0.084 mg/m <sup>3</sup>
Min Date	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
Min Time	10:48:30	10:48:16	10:48:21	10:48:33	10:48:33
TWA (8 hr)	N/A	N/A	N/A	N/A	N/A
TWA Start Date	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
TWA Start Time	10:48:02	10:48:02	10:48:02	10:48:02	10:48:02
TWA End Time	10:49:02	10:49:02	10:49:02	10:49:02	10:49:02



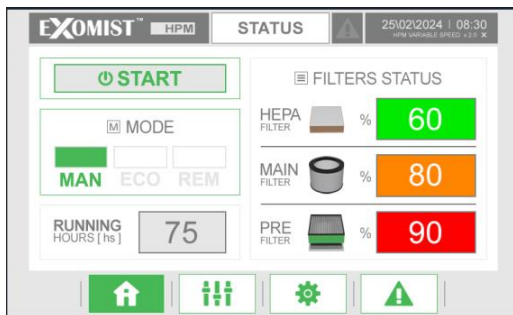
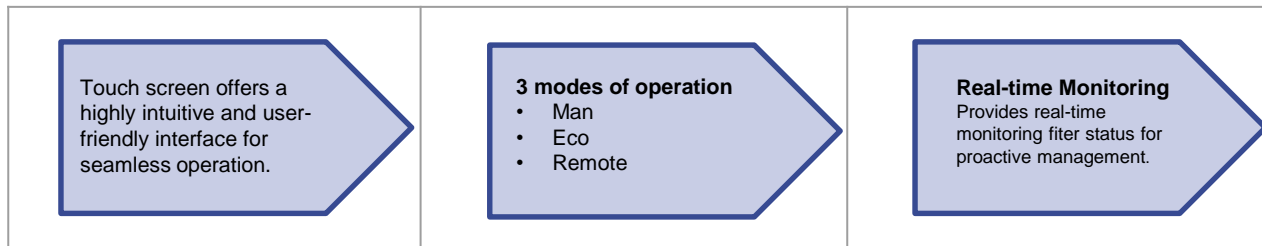


## Pc Board interface/features

	<b>HPM 3 phases</b>	<b>HPM S, M and L + HMI</b>
Local LED 3 stages alarm for each filter	X	X
Signal OUT filter saturation	X	X
Pressure sensors Resetting	X	X
2 set air flow rates		X
Local/Remote mode		X
Air flow trim		X
ECO auto mode (from 2024)		X
Instant pressure indication		X
Indications thresholds		X
Alarm log		X
Hours worked		X



## HPM + HMI

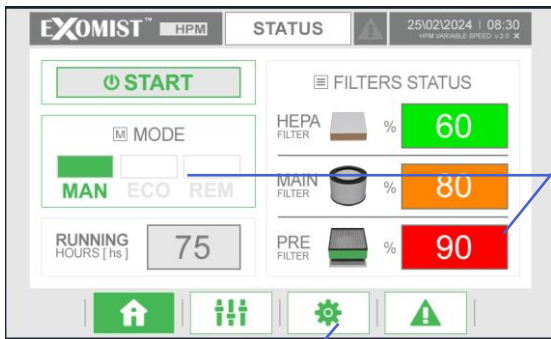


Integrated



Removable (3 meters cable )

# HPM + HMI



X LED on the HPM blinks in sync




**AUTOTUNE**  
Autocalibration of pressure drop based upon actual piping conditions. To be activated after installation



	<p><b>MODE 1 REMOTE</b> To Interface HPM with Machine tool and or high pressure pump with Possibility to set</p> <ul style="list-style-type: none"> <li>• 2 Speeds (High and Low)</li> <li>• Remote Star/stop from M function</li> <li>• Delayed stop</li> </ul>
	<p><b>MODE 2 ECO</b> Set desired air flow rate based upon the application/installation. Once the air flow rate is fixed the frequency inverter will increase RPM in order to offset air flow reduction due to filter saturation</p>
	<p><b>MODE 3 MANUAL</b> Set desired air flow rate for local operation only</p>

## Technical Data and Dimensions



NOMINAL TECHNICAL DATA  
SPECIAL COLORS AVAILABLE UPON REQUEST  
INFORMATION IS SUBJECT TO CHANGE WITHOUT NOTICE

	HPM 600	HPM 1000	HPM 1500	HPM 2000	HPM 2	HPM 3	HPM 4	
A	820	890	990	990	1045	1115	1215	
B	440	550	620	620	440	550	620	
C	440	550	620	620	440	550	620	
(mm)								
NOMINAL AIR FLDW RATE   (m <sup>3</sup> /h)	550	890	1450	1870	*300-490	*500-973	*1000-1980	
STATIC PRESSURE   (Pa)	650	930	1100	1700	650	930	1800	
SOUND LEVEL   (dB)	65	72	75	77	58	61	66	
WEIGHT   (Kg)	66	80	105	107	76	94	121	
MOTOR   (kW)	0,37	0,55	1,10 IE2	1,50 IE2	** 0,30	** 0,40	** 1,26	
MOTOR RATING	IE2	IE2	IE3	IE3	IE5	IE5	IE5	
MOTOR VOLTAGE   (V)	400 / 3 / 50				EC TYPE 200-270 / 1 / 50			
INLET DIAMETER   (mm)	125	150	200	200	125	150	200	
RAL							7035 / 7037	

\*MIN - MAX RANGE | \*\*ACTUAL CONSUMPTION

With additional Hepa filter

- Air flow rate = - 15 %
- Noise level = - 3 dB

## High Performing

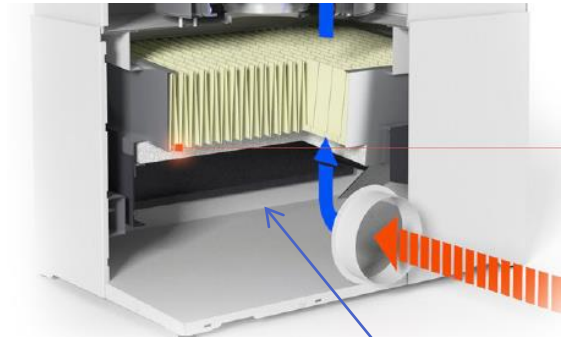
HPM series was designed to handle complex applications thanks to:

### ➤ **Air flow/filter design**

- Large surface area for prefilter stage (30% larger than similar mist collectors)
- Standard after filter with 99% efficiency level (AFNOR 44060)
- Standard washable metallic filter cell to stop dust, chips and grease
- Dedicated filter configuration for coolant used (Oil or Emulsion)
- Efficient air flow rate/Drainage system

### ➤ **Unit Management/Installation**

- Standard 3 stages alarm Easy to monitor each filter element
- Quick filter replacement
- 4+1 Sides Switch inlet = Adjust side inlet based upon installation need
- Hepa filter Ready = simple upgrade



Optimal space gap between prefilter and bottom of the unit to allow proper oil drainage

## HPM model sizing Guideline

General indications for selection of HPM model based upon machine tool size and type

- Machining centres
- Grinding machines
- Turning machines

Machine tool internal volume	HPM Model
< = 1 m3	<b>HPM 600</b> <i>US HPM 400</i>
> = 2 Mac < 5 m3	<b>HPM 1000 – HPM M</b> <i>US HPM 700</i>
> = 5 Mac < 12 m3	<b>HPM 1500 – HPM M</b> <i>US HPM 1000</i>
> 12 m3	<b>HPM 2000 – HPM M</b> <i>US HPM 1200</i>

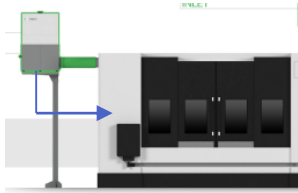
- Swiss Type

bar diameter	Coolant pressure	Hpm Model
< 20 mm	< 30 bar/1000 PSI	<b>HPM 600 - HPM S</b> <i>US HPM 400</i>
< 20 mm	> 30 bar/1000 PSI	<b>HPM 1000 - HPM M</b> <i>US HPM 700</i>
= 20 mm	< 70 bar/1000 PSI	<b>HPM 1000 – HPM M</b> <i>US HPM 700</i>
= 20 mm	> 70 bar/1000 PSI	<b>HPM 1500 – HPM L</b> <i>US HPM 1000</i>
> 20 mm	>= 70 bar/1000 PSI	<b>HPM 1500 – HPM L</b> <i>US HPM 1000</i>



## Machine tool interface/installation

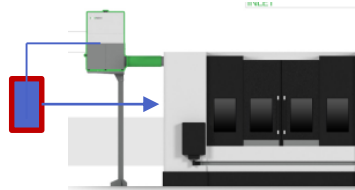
### 1-Machine tool main switch



Directly wired to machine tool's main switch

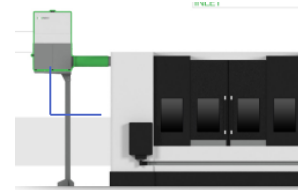
Mist collector start/stop with machine tool main switch

### 2-On off switch



Wired to on/off switch box for manual operation

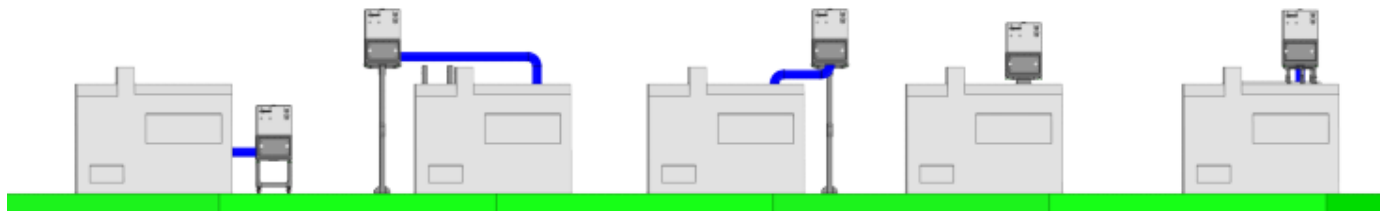
### 3-PC board



Mist collector interfaced directly from machine tool PLC  
To start/stop adjust air flow rate and send/receive signals (for EC Variable speed version)



## Standard installation supports



- STAND ON WHEELS**
- Easiest installation
  - H = 60 cm



- VERTICAL STAND**
- 25 cm footprint
  - 2 meters



- VERTICAL INLET**
- Direct inlet
  - No need for piping



- ADJUSTABLE FRAME**
- Possibility to adjust each leg vertically and horizontally



## OPTIONALS

Ref.	Description	same for all hpm models	125 mm Inlet	150 mm Inlet	200 mm Inlet
1	Inlet duct clip	yes			
2	Inlet tube		x	x	x
3	Drainage tube clip	yes			
4	Drainage tube	yes			
5	Plastic drainage container 5 liters	yes			
6	Connecting plate		x	x	x
7	90 connector		x	x	x
8	Air flow regulator		x	x	x
9	Y junction		125 to 100-100	150 to 125-125	200 to 150 150
10	Reducer		125 to 100	150 to 125	200 to 150

## OPTIONALS

Ref		same for all hpm models	HPM 350- 600	HPM 1000	HPM 1500- 2000
11	Hepa filter module H10 or H13		x	x	x
12	Frequency inverter**	yes			
13	Stand on wheels		x	x	x
14	Vertical stand		x	x	x
15	Vertical inlet support		x	x	
16	Adjustable frame		x	x	x

## Trouble Shooting

Possible Problem	Cause	Solution
Mist coming out from machine tool	<ul style="list-style-type: none"> <li>Insufficient air flow</li> <li>•Mist collector too small (if just installed)</li> <li>•Filters are saturated</li> </ul>	<ul style="list-style-type: none"> <li>•Install bigger size unit</li> <li>•Check LED status Replace filters</li> </ul>
Smoke passing through mist collector exhaust	<ul style="list-style-type: none"> <li>Presence of Dry smoke</li> </ul>	<ul style="list-style-type: none"> <li>Add hepa filter module</li> </ul>
Short filter's lifetime	<ul style="list-style-type: none"> <li>Too much chips/grease on the prefilter</li> <li>Wrong filter version for the coolant used</li> <li>Too much liquid accumulated inside the unit</li> </ul>	<ul style="list-style-type: none"> <li>Install air flow regulator and reduce air flow</li> <li>Install proper filter kit</li> <li>Make sure drainage is done properly (Trap)</li> </ul>

**EXOMIST**<sup>TM</sup>  
CLEANER PRODUCTIVITY