

EM-O COMPACT 1.0 - GUIDELINE

Size	Application	Air Volume	Guideline
1.0	Coolant	588 CFM	<ul style="list-style-type: none"> Usable for coolant with < 10% oil content Between 10% up to 15% oil content limitation of service life filter elements (what % degraded filter life) Not usable over 15% → use of Expert Compact Pump pressure up to 1160 PSI, over 1160 PSI → use of Expert Compact Cutting machining with specific geometry, max. load 30 mg/m³ Cutting machining with indefinite geometry, max. load 20 mg/m³ Usable for processing of steel, light metal and grey cast iron
1.0	Oil	470 CFM	<ul style="list-style-type: none"> Usable for coolant lubricant with viscosity 4 up to 50 cst (40°C) Pump pressure up to 435 PSI, over 435 PSI → use of Expert Compact Cutting machining with specific geometry, max. load 30 mg/m³ Cutting machining with indefinite geometry, max. load 20 mg/m³ Usable for processing of steel, light metal and grey cast iron
1.0	MQL	470 CFM	<ul style="list-style-type: none"> Minimum lubrication quantity over 60 ml per process hour Usable for processing of steel and light metal, not usable for processing of grey cast iron

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Coolant	max. load mg/m ³	Aerosols, Fume < 1 µm
EM-O w/o post-filter	30	20%
EM-O with postfilter	40	20%

Oil	max. load mg/m ³	Aerosols, Fume < 1 µm
EM-O with postfilter	30	40%

MQL	max. load mg/m ³	Aerosols, Fume < 1 µm
EM-O with postfilter	20	50%

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Coolant	Separation efficiency	Washable	Service Life in compliance with the guideline and the IOM
Coarse-filter	> 85% at 5 µm	yes	24,000 hours, up to 6 years
Pre-filter	ePM10 50%*	3 times	4,000-8,000 hours, up to 1 years
Fine-filter	ePM1 75%	no	6,000-8,000 hours, up to 1 years
Post-filter	> 95% of 0,3 µm (MPPS)	no	4,000-6,000 hours, up to 1 years
Oil	Separation efficiency	Washable	Service Life in compliance with the guideline and the IOM
Coarse-filter	> 85% at 5 µm	yes	24,000 hours, up to 6 years
Pre-filter	ePM10 50% (ePM2,5 50%)	3 times	4,000-8,000 hours, up to 1 years
Fine-filter	ePM1 75%	no	6,000-8,000 hours, up to 1 years
Post-filter	> 99,97% of 0,3 µm MPPS	no	3,000-5,000 hours, up to 1 years
MQL	Separation efficiency	Washable	Service Life in compliance with the guideline and the IOM
Coarse-filter			
Pre-filter	ePM10 50%	3 times	2,000-4,000 hours, up to 1 years
Fine-filter	ePM1 75%	no	5,000-7,000 hours, up to 2 years
Post-filter	> 99,97% of 0,3 µm MPPS	no	3,000-5,000 hours, up to 1 years

→ *According to the ISO 16890

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(ePM) Particulate Matter Concentrations

ePM 10 (Nasal Cavity & Throat) $\leq 10\text{m}$

ePM 2.5 (Trachea & Bronchial tubes) $\leq 2.5\text{m}$

ePM 1 (Lung tissue & Alveoli) $\leq 1\text{m}$

Coolant	Post-filter	Separation Efficiency	Estimation of clean air efficiency, in compliance with the guideline and the IOM
EM-O w/o post-filter	-	ePM1 80%	$\leq 1 \text{ mg/m}^3$
EM-O w. post-filter	E11	> 95% of 0,3 μm MPPS	$\leq 0,2 \text{ mg/m}^3$

Oil	Post-filter	Separation Efficiency	Estimation of clean air efficiency, in compliance with the guideline and the IOM
EM-O w. post-filter	H13	> 99,97% of 0,3 μm MPPS	$\leq 0,2 \text{ mg/m}^3$

MQL	Post-filter	Separation Efficiency	Estimation of clean air efficiency, in compliance with the guideline and the IOM
EM-O w. post-filter	H13	> 99,97% of 0,3 μm MPPS	$\leq 0,2 \text{ mg/m}^3$

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Coolant	Initial Pressure Drop w.g.” @588 CFM					Recommended Pressure Drop Washing/Changing in w.g.”			Recommended Final Pressure Drop in w.g.”		
Coarse-filter	0.12		0.8	1.4		0.8	2.8	1.2	4.0	4.0	
Pre-filter	0.28					1.2		1.6			
Fine-filter	0.4					2.8		2.8			
Post-filter	0.4						2.4	2.4			

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Oil	Initial Pressure Drop in w.g.” @470cfm			Recommended Pressure Drop Washing/Changing in w.g.”	Recommended Final Pressure Drop in w.g.”		
Coarse-filter	0.12	1.1		0.8	1.2	4.0	
Pre-filter	0.4 0.92			1.2 2.8	1.6 4.0		
Fine-filter	0.4			2.8	2.8		
Post-filter	0.8			2.8	2.8		

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MQL	Initial Pressure Drop in w.g.” @470cfm			Recommended Pressure Drop Washing/Changing in w.g.”	Recommended Final Pressure Drop in w.g.”		
Pre-filter	0.3	0.7		1.2	2.8	1.6	4.0
Fine filter	0.4		1.5	2.8		2.8	4.8
	0.8			3.2		3.2	