



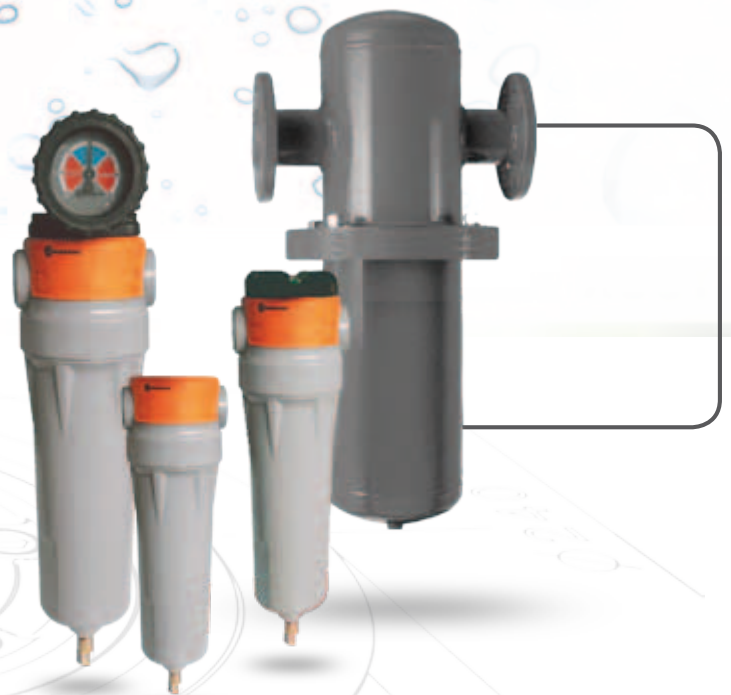
PRODUCTS INFORMATION

English



**FM**

COMPRESSED AIR FILTERS



# COMPRESSED AIR FILTERS FM



## About us

Ing. **Enea Mattei SpA** is an Italian company that has been producing air compressors since 1919. Over the years, the company has continually evolved and is today one of the world's foremost companies in the compressed air sector and the leader in the production of rotary vane compressors.

Behind the success of Mattei are the choices the company has made in terms of design, production and marketing, driven by the results of its continual and in-depth research and development programmes.

During these years of continual change, Mattei has been able to adapt to the requirements of the market and through the results of its research has created products that are always innovative and technologically advanced.



## Certified quality

Quality as an integral part of all company functions and constant improvement of all production processes so as to always guarantee the maximum level of reliability and satisfaction. This, in brief, is the value and the meaning of **Mattei's** operational philosophy. A way of approaching the market and customers that makes **Mattei** an absolute point of reference in the compressed air sector.

Since 1994, **Mattei** has been operating with a Quality System certified by the DNV Institute under UNI EN ISO 9001 regulations.



## Pure air guaranteed by a superior product

In modern manufacturing processes compressed air plays the role of a safe, reliable and economic energy supply. The air delivered by compressors must be treated to obtain quality air. Otherwise, the life of pneumatic tools and the quality of finished products will be jeopardised.

Two different types of contaminants may seriously affect the quality of compressed air:

- 1) atmospheric contaminants
- 2) plant contaminants

Regarding atmospheric pollution, a cubic metre of urban compressed air at 7 bar can contain one thousand million particles, including fine dust (combustion particles) gas and hydrocarbon vapour originating from industrial discharges. Contamination of the air system occurs because compressors and fittings can produce rust particles, waste and lubricating oil sludge. Even "oil free" compressors have this problem, as they compress gases, oil vapours and fine particles contained in the polluted atmosphere and then transfer them to the condensate in the air system.

Contaminants produce corrosive emulsions obstructing the pipelines, increasing the pressure losses (and consequently the manufacturing costs), such emulsions may clog and wear out pneumatic tools and sometimes also the air system is blocked. Mattei, a market leader in compressed air technology, supplies a wide range of high efficiency filters to eliminate impurities and contaminants in all industrial applications of compressed air. Particularly, Mattei filters ensure the air is up to 99,99% technically oil free by the use of specific materials.

Following filters are available:

- **prefilters** to eliminate rough impurities;
- **fine filters** to eliminate micro-drops of liquid and powdered particles;
- **activated charcoal filters ensure the elimination of oil odours and vapours.**

The first two filters are of a mechanic and coalescing type, while the third is an adsorption type.



### GRADE C4 dust filter



It is suitable as a prefilter in a plant where compressed air is produced by compressors not equipped with an effective filtering and oil removing system.

Maximum working temperature 100°C.

**Removal of solid particles:**  
micron  $\geq 10$

### GRADE C3 pre-filter



It is suitable as initial protection for a compressed air system or a refrigerant dryer, for general application in pneumatic devices, as a prefilter for "C2" grade filters and as a post-filter for adsorption dryers.

Maximum working temperature 100°C.

**Removal of solid particles:**  
micron  $\geq 5$

### GRADE C2 oil removing filter



It is suitable to remove large oil quantities.

Maximum working temperature 100°C.

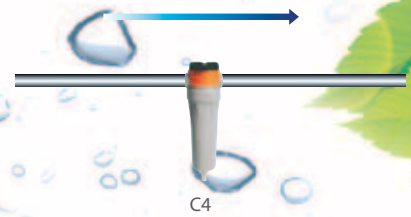
**Removal of solid particles:**  
micron  $\geq 1$   
**Maximum liquid residue:**  
mg/m<sup>3</sup> 0,1

## Applications

### FM/C4

In industrial applications where high air quality is not essential: as pre-filter for further filtration and placed after centrifugal separators and adsorption dryer.

**It removes 99% of liquid and solid particles up to 10 micron.**



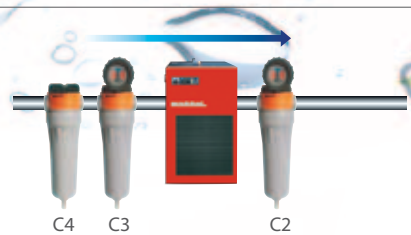
### FM/C4 - FM/C3 - REFRIGERANT DRYER - FM/C2

Ideal for pneumatic plants, packaging and painting systems, compressed air motors and vacuum pumps.

**Solid particles removal up to 1 micron.**

**Maximum oil carry-over 0,1 mg/m<sup>3</sup>.**

**Pressure dewpoint: + 3°C.**



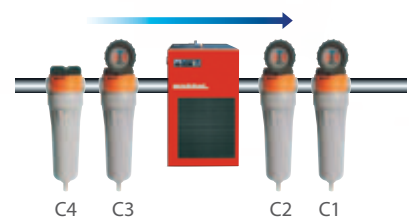
### FM/C4 - FM/C3 - REFRIGERANT DRYER - FM/C2 - FM/C1

Suitable for pneumatic transportation, pneumatic tools operation, pneumatic control, instrumentation, packaging and painting systems.

**It removes solid particles up to 0,01 micron.**

**Maximum oil carry-over 0,01 mg/m<sup>3</sup>.**

**Pressure dewpoint: + 3°C.**



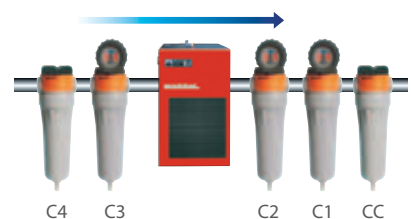
### FM/C4 - FM/C3 - REFRIGERANT DRYER - FM/C2 - FM/C1 - FM/CC

Ideal for oil odour and vapour free compressed air. Suitable for all the above applications as well as breweries, food and beverage plants, hospital applications, planting, electronic instruments, packaging bottling, decompression chambers, pharmaceutical and refrigeration industries, etc.

**It removes solid particles up to 0,01 micron.**

**Maximum oil carry-over 0,003 mg/m<sup>3</sup>.**

**Pressure dewpoint: + 3°C.**



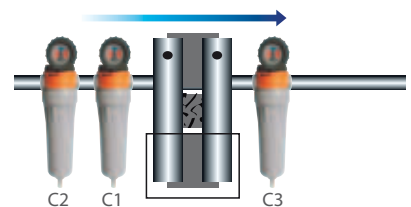
### FM/C2 - FM/C1 - ADSORPTION DRYER - FM/C3

Suitable for all the above applications with the addition of pneumatic controls, painting, pneumatic transportation, packaging, instrumentation or whenever a pressure dew point of -40°C is needed.

**It removes solid particles up to 0,01 micron.**

**Maximum oil carry-over 0,01 mg/m<sup>3</sup>.**

**Pressure dewpoint: -40°C.**

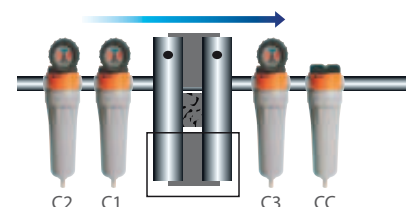


### FM/C2 - FM/C1 - ADSORPTION DRYER - FM/C3 - FM/CC

Dry, odourless and technically oil free compressed air. Suitable in all oil free processes such as food and beverage industry, hospital applications, pharmaceutical processes, planting and laboratories.

**Maximum oil carry-over 0,003 mg/m<sup>3</sup>.**

**Pressure dew point: -40°C.**



#### GRADE C1 oil removing filter



This filter is required for an effective retention of the oil residue, around 99,99%, and delivers technically oil free air. Maximum working temperature 100 °C.

**Removal of solid particles:**

**micron  $\geq$  0,01**

**Maximum liquid residue:**

**mg/m<sup>3</sup> 0,01**



#### GRADE CC activated carbon filter

It is used to eliminate oil vapours and odours and for the final treatment of compressed air.

The filtering element is made of activated carbon, with an external steel mesh.

The adsorption principle removes vapours and residual odours of the oil retention process.

A grade C1 filter should be always placed before it. Maximum working temperature 60°C.

**Maximum liquid residue:**

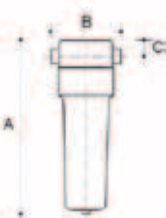
**mg/m<sup>3</sup> 0,003**

MODEL	P <sub>MAX</sub>		AIR DELIVERY		PIPE CONNECTIONS	DIMENSIONS (MM)				WEIGHT	
	bar	psig	m <sup>3</sup> /min	cfm		B - WIDTH		A - HEIGHT		kg	lbs
						mm	inch	mm	inch		
FM 0005	16	232	0,5	18	Rp 3/8"	90	3,5	220	8,7	0,6	1,3
FM 0010	16	232	1	35	Rp 1/2"	90	3,5	220	8,7	0,6	1,3
FM 0018	16	232	2	71	Rp 3/4"	90	3,5	280	11,0	0,7	1,5
FM 0030	16	232	3	106	Rp 3/4"	90	3,5	280	11,0	0,7	1,5
FM 0035	16	232	3,4	120	Rp 1"	120	4,7	305	12,0	1,1	2,4
FM 0050	16	232	5	177	Rp 1"	120	4,7	305	12,0	1,2	2,6
FM 0072	16	232	7,2	254	Rp 1 1/2"	120	4,7	385	15,2	1,3	2,9
FM 0095	16	232	9,5	335	Rp 1 1/2"	120	4,7	385	15,2	1,4	3,1
FM 0125	16	232	12,5	441	Rp 2"	165	6,5	500	19,7	3,7	8,1
FM 0165	16	232	17	600	Rp 2"	165	6,5	500	19,7	3,8	8,4
FM 0190	16	232	19	671	Rp 2 1/2"	165	6,5	675	26,6	4,8	10,6
FM 0220	16	232	24	847	Rp 2 1/2"	165	6,5	675	26,6	4,9	10,8
FM 0280	16	232	28	989	Rp 3"	200	7,9	710	28,0	6,7	14,7
FM 0350	16	232	35	1236	Rp 3"	200	7,9	865	34,1	7,9	17,4
FM 0440	13	189	44	1554	Rp 3"	200	7,9	985	38,8	8,8	19,4
FM 0460	16	232	46	1624	DN 100	485	19,1	1265	49,8	125	275,0
FM 0700	16	232	70	2472	DN 125	630	24,8	1275	50,2	196	431,2
FM 0950	16	232	95	3355	DN 150	630	24,8	1380	54,4	210	462,0
FM 1250	16	232	125	4414	DN 150	676	26,6	1430	56,3	264	580,8
FM 1550	16	232	155	5473	DN 150	724	28,5	1500	59,1	314	690,8
FM 1850	16	232	185	6532	DN 200	724	28,5	1500	59,1	320	704,0

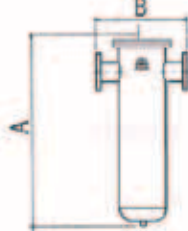
Performances refer to 1bar (a) and to the following operating conditions: intake air at 25°C/60%RH, 7 bar working pressure in bar, 35°C compressed air inlet temperature.

## ACCESSORIES:

FOR MODEL  
FROM FM 0005  
TO FM 0440



FOR MODEL  
FROM FM 0460  
TO FM 1850



### DIFFERENTIAL GAUGE

Displays the exact saturation degree of the filter element.



### DIFFERENTIAL PRESSURE INDICATOR

Two-tone visual indicator, regulated by the differential pressure, to visualise the clogging degree of the filtering element.

## FLOW RATE CORRECTION FACTORS

Pressure	bar	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		0,36	0,5	0,63	0,75	0,88	1	1,13	1,25	1,38	1,5	1,63	1,75	1,88	2	2,13

## PURITY CLASS AND MODEL

Oil - Class ISO 8573.1:2010		Solids - Class ISO 8573.1:2010			
C4	purity class	-	C4	purity class	7
C3	purity class	4	C3	purity class	3
C2	purity class	2	C2	purity class	2
C1	purity class	1	C1	purity class	1
CC	purity class	N.A.	CC	purity class	N.A.

\*Example of filter selection :

**FM 0050 C3** — Filter grade specification  
 — Filter Model/Size



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