ACCESSORIES INFORMATION

AIR TREATMENT

DRYING, FILTRATION AND STORAGE

Index
Air treatment

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 devlopment 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.

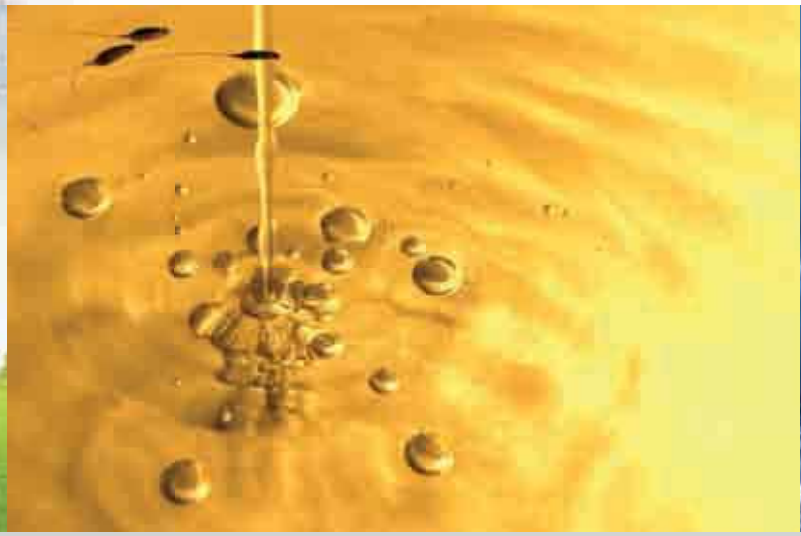
Certified quality

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.

AIR TREATMENT

The Air Treatment

Atmospheric air always contains water vapour and impurities. For the final user it is necessary to get a compressed air supply, free from condensate and contaminating particles, such as oil and dust. If such contaminations should come in direct contact with the final product, the resulting costs would be extremely high and a solution that could have been practical and inexpensive at the design stage would then be very costly. The aim of Mattei's compressors is to provide **quality compressed air**, **clean and dry**, i.e. free from any element that might reduce the plant's efficiency and reliability. According to the customer's compressed air use and field of application, these substances can have a different impact on the production process. Once the function of compressed air through the production process has been precisely identified, it is important to accurately and thoroughly select the best possible combination of air treatment accessories, in order to optimise the available resources and reduce waste.



Dryers

A quality compressed air supply needs to be dry.
The use of **Mattei's dryers** removes the condensate from the compressors, preventing any damage to the compressed air distribution system. The presence of water in a system can cause leaks in pipes and increase the risk of damage to machinery and pneumatic devices. Also some applications require dry air in order to ensure a better quality of the final products. Mattei offers direct expansion and thermal mass refrigeration dryers (**MD** and **HTMD** Series) and absorption dryers (**ADM** Series)

Filters

The installation of Mattei's **FM Series** filters guarantees cleaner compressed air. Their function is to separate air impurities, through a multi-stage process. The line filters have specific functions, refining the purification operation, anti-dust filters, pre-filter and oil-removing filters. Mattei's filter range can be used in compressors with air flows **from 0.5 to 185m³/min and pressures up to 16 bar.** They can be used as adsorption dryer pre-filters, for coating plants, compressed air tools and precision pneumatic controls.
Thanks to efficient filtering it is possible to produce a compressed air supply free from impurities and therefore also suitable in applications where a high level of air purity is essential.

Oil - Water Separator

The condensed water inside the compression chamber will contain particles of the oil used as compressor lubricant/coolant in addition to those airborne contaminants including hydrocarbons drawn in to the compressor from the atmosphere. To discharge the water into the drainage, according to the regulations required in the country of installation, the condensate will first have to be purified. Mattei's **MOS Series separators** are used to this end, because they are easy to install and are manufactured with recyclable materials. These accessories guarantee excellent performances and maximum reliability, thanks to the higher quality and long lifespan of the new cartridge filters. **Separators are available with or without pre-separator.**

Condensate Treatment

Air contains water in the form of vapour, which varies depending on the climate and seasons. It's higher in the summer and lower during the colder months. The condensate caused as the compressed air cools compromises its quality. Indeed, as well as being a potentially aggressive agent, because of its PH value, the condensate contains elements, such as compressor residual oils, dirt and other air pollutants. Therefore it is necessary to use cyclone separators, into which water drops are swept away as a result of the turbulence and discharged through special drains. **Mattei's electronic condensate drains** have a timer control, are adjustable and equipped with a tap. Thanks to their compact size, they can be installed in whatever position is best suited for the customer's system and require only minimum maintenance. **The 200 model** also enables level control, avoids air leaks when the compressor is working and includes the malfunction indicator, to ensure long lifespan.

COMPRESSED AIR
FM FILTERS

Compressed air filtration

Mattei filters, with five filtering elements of different grades, allow you to achieve the highest compressed air quality standards, according to ISO 8573-1:2010.

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 ≥ 25

GRADE C3
PRE-FILTER

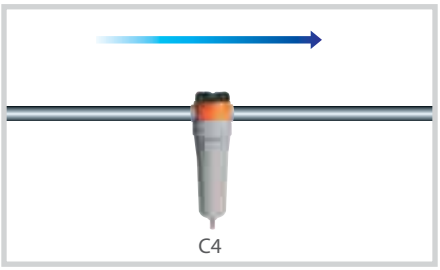
It is suitable as initial protection for a compressed air system or a refrigerant dryer, for general application in pneumatic devices, as a prefilter for "C2" grade filters and as a post-filter for adsorption dryers. Maximum working temperature: 100 °C.

Removal of solid particles	micron ≥ 5
Maximum liquid residue	mg/m³ ≤ 5

Applications:

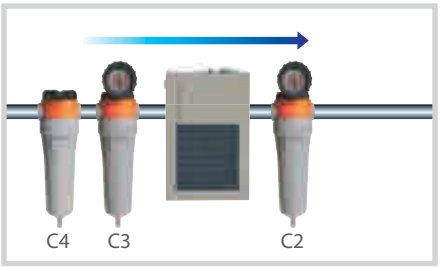
FM/C4

In industrial applications where high air quality is not essential: as pre-filter for further filtration and placed after centrifugal separators and adsorption dryers.
It removes 99% of liquid and solid particles up to 25 micron.



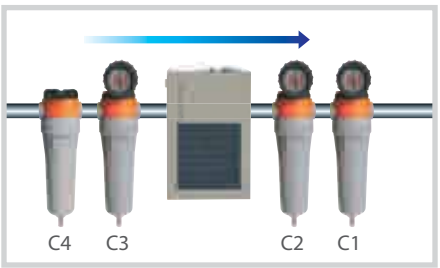
FM/C4 - FM/C3 - REFRIGERANT DRYER - FM/C2

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/m³.
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 0,1 micron.
Maximum oil carry-over 0,01 mg/m³.
Pressure dewpoint: +3°C.



GRADE C2
OIL REMOVING FILTER

It is suitable to remove large oil quantities. Maximum working temperature 100 °C.

Removal of solid particles	micron ≥ 1
Maximum liquid residue	mg/m³ 0,1

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 ≥ 0,1
Maximum liquid residue	mg/m³ 0,01

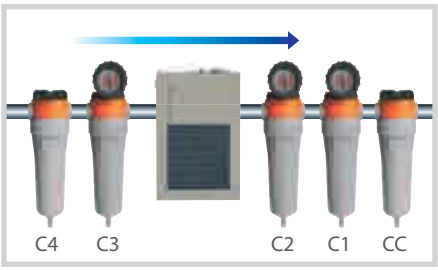
GRADE CC
ACTIVATED CARBON FILTER

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/m³ 0,008

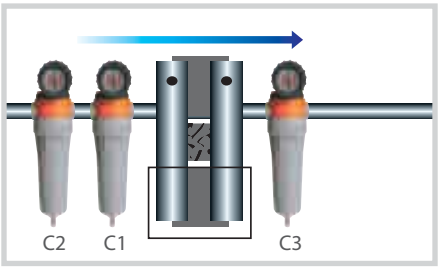
FM/C4 - FM/C3
REFRIGERANT DRYER- FM/C2 - FM/C1 - FM/CC

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, plating , electronic instruments, packaging, bottling, decompression chambers, pharmaceutical and refrigeration industries, etc.
It removes solid particles up to 0,01 micron.
Maximum oil carry-over 0,008 mg/m³.
Pressure dewpoint: +3°C.



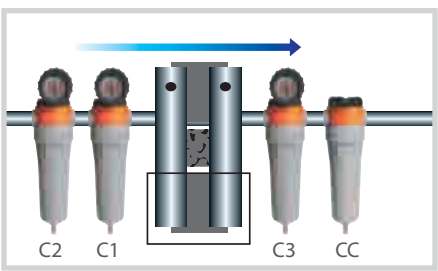
FM/C2 - FM/C1 - ADSORPTION DRYER- FM/C3

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/m³.
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, plating and laboratories.
Maximum oil carry-over 0,008 mg/m³.
Pressure dew point: -40°C



COMPRESSED AIR
FM FILTERS

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:

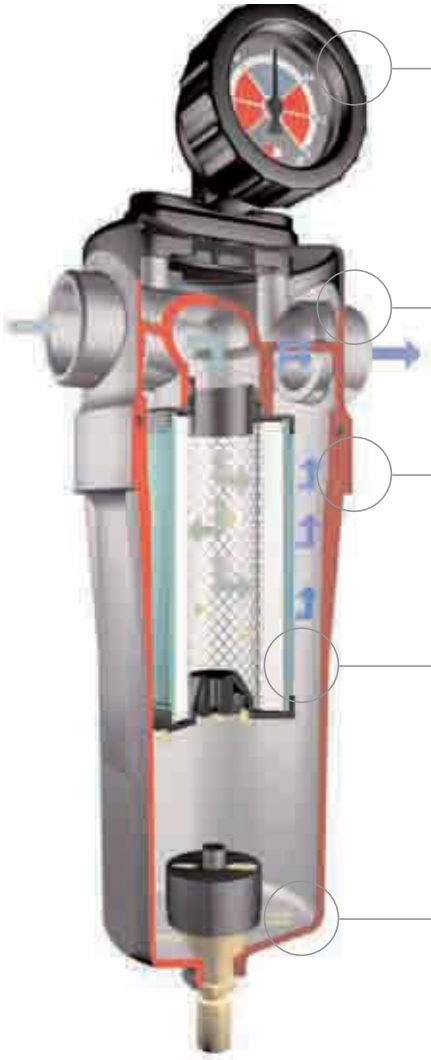
1) atmospheric contaminants
2) plant contaminants

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.



Accessories:

DIFFERENTIAL GAUGE

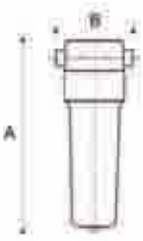
Displays the exact saturation degree of the filter element.

DIFFERENTIAL PRESSURE INDICATOR

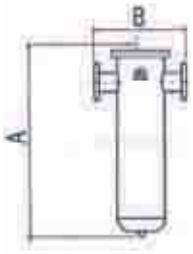
Two-tone visual indicator, regulated by the differential pressure, to visualise the clogging degree of the filtering element.

MODEL	PMAX		AIR DELIVERY		PIPE CONNECTIONS	DIMENSIONS (MM)				WEIGHT	
						B - WIDTH		A - HEIGHT			
	bar	psig	m³/min	cfm	inch	mm	inch	mm	inch	kg	lbs
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 1/8"	90	3,5	220	8,7	0,6	1,3
FM 0018	16	232	2	71	Rp ¾"	90	3,5	280	11,0	0,7	1,5
FM 0030	16	232	3	106	Rp ¾"	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 1/8"	120	4,7	385	15,2	1,3	2,9
FM 0095	16	232	9,5	335	Rp 1 1/8"	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 1/8"	165	6,5	675	26,6	4,8	10,6
FM 0220	16	232	24	847	Rp 2 1/8"	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	12	174	46	1624	DN 100	490	19,3	1130	44,5	120	264,0
FM 0700	12	174	70	2472	DN 125	630	24,8	1140	44,9	190	418,0
FM 0950	12	174	95	3355	DN 150	630	24,8	1230	48,5	200	440,0
FM 1250	12	174	125	4414	DN 150	680	26,8	1270	50,0	250	550,0
FM 1550	12	174	155	5473	DN 175	720	28,4	1320	52,0	300	660,0
FM 1850	12	174	185	6532	DN 200	720	28,4	1320	52,0	300	660,0

FOR MODELS FROM FM 0005 TO FM 0440



FOR MODEL FROM FM 0460 TO FM 1850



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.

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

- C3 — Filter grade specification
- 0050 — Filter Model/Size

DIRECT EXPANSION

MD REFRIGERANT DRYERS

ELECTRICAL ENERGY SAVING: a reduced pressure drop through the dryer has a direct effect on reducing the running costs of the compressed air system of between 5 and 8%.

CONTROL PANEL: guarantee consistent performance also in intermittent working conditions.

CONDENSER: ensures maximum performance of the refrigerant circuit and the ability to operate with changes in the ambient conditions.

ALU-DRY MODULE: has a direct effect on reducing energy consumption.

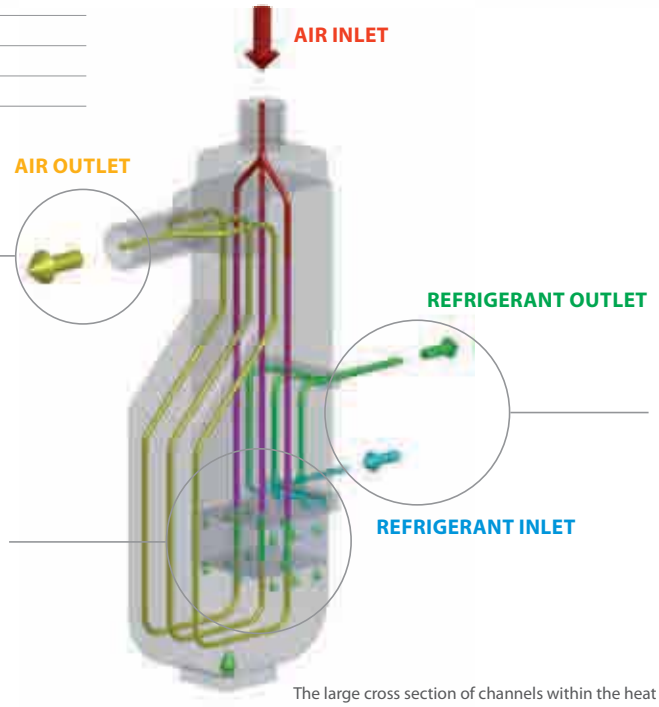
CONDENSATE DRAIN: adjustable electronic condensate drain with timer.

OPTIONAL:

"HOT GAS" BY PASS VALVE DETAILS
prevents the formation of ice inside the evaporator

Direct expansion

Refrigerant	R134a up to MD25 model
	R407C from MD38 model
Compressed Air Inlet Temperature	+35°C
Working Pressure	7 bar
Maximum Working Pressure	14 bar
Pressure Dewpoint	+3°C
Protection Index	IP 22



AIR-TO-AIR HEAT EXCHANGER:
the counter flows of compressed air in the air-to-air heat exchanger ensure maximum heat transfer.

DEMISTER CONDENSATE SEPARATOR:
The high efficiency condensate separator is located inside the heat exchanger module. No maintenance is required and the coalescing effect results in a high degree of moisture separation.
The large capacity separator is designed to hold condensate also with high humidity in compressed inlet air.

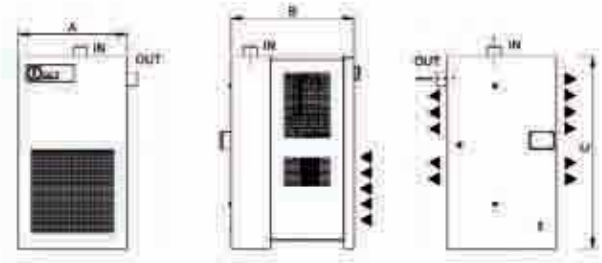
AIR-TO-REFRIGERANT HEAT EXCHANGER:
The generous dimensions of the air-to-refrigerant plus the counter flow gas streams allow full and complete evaporation of the refrigerant (preventing liquid returning to the compressor).

The large cross section of channels within the heat exchanger module leads to low velocities and reduced power requirements.

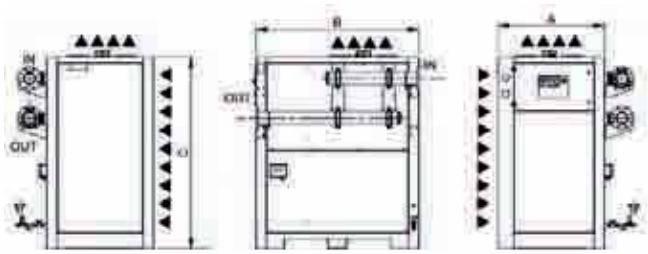
MODEL	FLOW-RATE		INSTALLED POWER		REFRIGERANT	POWER SUPPLY	SOUND LEVEL	CONNECTIONS	DIMENSIONS (MM)						WEIGHT	
									LENGTH		WIDTH		HEIGHT			
MD	m³/min	cfm	KW (nom.)	FLA A.	Tipo	V/Hz/ph	dB(A)	Inch (IN-OUT)	mm	inch	mm	inch	mm	inch	kg	lbs
MD 6	0,6	21,2	0,16	1,4	R134a	230-240/50-60/1	<70	G 1/2" BSP-F	420	16,5	345	13,6	740	29,2	30	66
MD 9	0,9	31,8	0,18	1,5	R134a	230-240/50-60/1	<70	G 1/2" BSP-F	420	16,5	345	13,6	740	29,2	30	66
MD 15	1,5	53	0,23	2,3	R134a	230-240/50-60/1	<70	G 1/2" BSP-F	420	16,5	350	13,8	740	29,2	35	77
MD 20	2	70,6	0,31	3,1	R134a	230-240/50-60/1	<70	G 1" BSP-F	420	16,5	350	13,8	740	29,2	40	88
MD 25	2,5	88,3	0,46	3,5	R134a	230-240/50/1	<70	G 1" BSP-F	420	16,5	350	13,8	740	29,2	40	88
MD 38	3,8	134,2	0,69	5,3	R407C	230-240/50/1	<70	G 1 1/4" BSP-F	460	18,1	490	19,3	830	32,7	50	110
MD 49	4,9	173	0,75	5,9	R407C	230-240/50/1	<70	G 1 1/4" BSP-F	460	18,1	490	19,3	830	32,7	50	110
MD 68	6,8	240,1	0,7	8,8	R407C	230-240/50/1	<70	G 1 1/2" BSP-F	580	22,9	560	22,1	890	35,1	55	121
MD 83	8,3	293,1	0,84	8,9	R407C	230-240/50/1	<70	G 1 1/2" BSP-F	580	22,9	560	22,1	890	35,1	65	143
MD 110	11	388,4	1,1	9	R407C	230-240/50/1	<70	G 2" BSP-F	630	24,8	560	22,1	980	38,6	95	209
MD 150	15	529,7	1,45	11,2	R407C	230-240/50/1	<70	G 2 1/2" BSP-F	730	28,8	670	26,4	1110	43,7	145	319
MD 170	17	600,3	1,73	14,3	R407C	230-240/50/1	<70	G 2 1/2" BSP-F	730	28,8	670	26,4	1110	43,7	165	363
MD 185	18,5	653,2	2,2	6,8	R407C	400-415/50/1	<75	DN80-PN 16	1000	39,4	790	31,1	1470	57,9	240	528
MD 250	25	882,8	3	7,1	R407C	400-415/50/3	<75	DN80-PN 16	1000	39,4	790	31,1	1470	57,9	245	539
MD 350	35	1235,9	3,6	10,2	R407C	400-415/50/3	<75	DN80-PN 16	1000	39,4	790	31,1	1470	57,9	280	616
MD 410	41	1447,7	3,9	11,2	R407C	400-415/50/3	<75	DN80-PN 16	1000	39,4	790	31,1	1470	57,9	315	693
MD 480	48	1694,9	5,2	14,5	R407C	400-415/50/3	<80	DN100-PN 16	1210	47,7	1140	44,9	1750	69	465	1023
MD 620	62	2189,3	5,9	15,9	R407C	400-415/50/3	<80	DN100-PN 16	1210	47,7	1140	44,9	1750	69	540	1188
MD 810	81	2860,2	7,1	22,4	R407C	400-415/50/3	<80	DN100-PN 16	1210	47,7	1140	44,9	1750	69	620	1364
MD 900	90	3178	8,4	30,1	R407C	400-415/50/3	<80	DN150-PN16	1750	69	1300	51,2	1810	71,3	830	1826
MD 1200	120	4237,3	11,3	38,8	R407C	400-415/50/3	<85	DN200-PN16	2200	86,7	1400	55,2	1870	73,7	1055	2321
MD 1500	147,2	5197,7	16,8	47,8	R407C	400-415/50/3	<85	DN200-PN16	2200	86,7	1400	55,2	1870	73,7	1200	2640

Data refers to the following nominal conditions: Ambient temperature of 25 °C, with inlet air at 7 bar and 35 °C and 3 °C pressure Dew Point (-22 °C atmospheric pressure Dew Point).
Max. working conditions: Ambient temperature 45 °C, inlet air temperature 55 °C and inlet air pressure 14 bar.

MD 6 ÷ 410



MD 480 ÷ 1500



CORRECTION FACTOR FOR OPERATING PRESSURE CHANGES									
Inlet Air Pressure	barg	4	5	6	7	8	10	12	14
Factor		0,77	0,86	0,93	1	1,05	1,14	1,21	1,27

CORRECTION FACTOR FOR AMBIENT TEMPERATURE CHANGES							
Ambient Temperatur	°C	<25	30	35	40	45	50
Factor		1	0,96	0,9	0,82	0,72	0,6

CORRECTION FACTOR FOR INLET AIR TEMPERATURE CHANGES											
Air Temperature	°C	<25	30	35	40	45	50	55	60	65	70
Factor		1,2	1,12	1	0,83	0,69	0,59	0,5	0,44	0,39	0,37

CORRECTION FACTOR FOR DEW POINT CHANGES					
Dew Point	°C	3	5	7	10
Factor		1	1,09	1,19	1,37

REFRIGERANT
HTMD DRYERS

ENERGY SAVING: the refrigerant compressor of HTMD dryers adjusts to the load demand, allowing up to 80% energy saving under normal operating conditions.

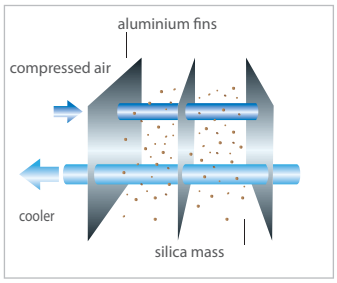
HIGH RELIABILITY: ensured by a simple refrigerant circuit and by thermostatically controlled dewpoint.

SURE GUARANTEEED QUALITY: remarkably low and constant dewpoint.

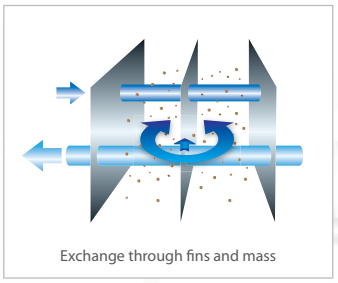
READY TO USE: unlike traditional thermal mass systems, HTMD dryers do not need pre-switching. They may be left 'on' without current leakage.

ECOLOGICALLY SAFE: the silica thermal mass and the refrigerating gas are absolutely nontoxic and easy to dispose of.

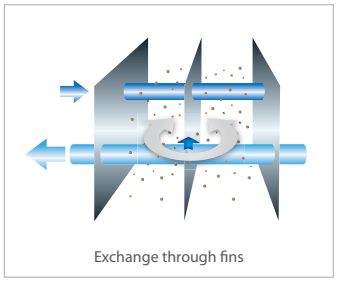
Thermal mass



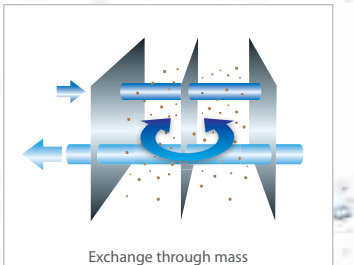
TECHNOLOGY
The heat transfer from compressed air to the dryer occurs directly by means of aluminium connecting fins and indirectly through the silica thermal mass, in which the air and dryer pipes are immersed.


Exchange through fins and mass

PARTIAL LOAD
Under a typical use, compressed air is cooled indirectly, allowing compressor start and stop cycles, based on the load conditions.


Exchange through fins

FULL LOAD
Under maximum operating conditions the best energy efficiency is obtained by direct cooling through the aluminium fins.


Exchange through mass

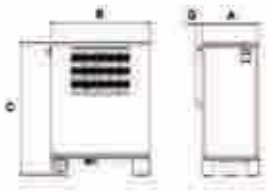
STAND-BY
Under no load conditions the thermal mass is kept at the operating temperature. Energy consumption is reduced to a minimum and the dryer is ready to re-start immediately.

MODEL	FLOW RATE		ABSORBED POWER		COOLANT	POWER SUPPLY	SOUND PRESSURE LEVEL	CONNECTIONS	DIMENSIONS (MM)						WEIGHT	
									LENGTH		WIDTH		HEIGHT			
MD	m³/min	cfm	KW (nom.)	kW max.	Tipo	V/Hz/ph	dB(A)	Inch (IN-OUT)	mm	inch	mm	inch	mm	inch	kg	lbs
HTMD 051	0,5	17,7	0,13	0,32	R134a	230/50/1	<70	Rp 1/2"	530	20,9	300	11,8	510	20,1	36	79,2
HTMD 081	0,8	28,2	0,14	0,32	R134a	230/50/1	<70	Rp 1/2"	530	20,9	370	14,6	620	24,4	39	85,8
HTMD 121	1,2	42,4	0,25	0,37	R134a	230/50/1	<70	Rp 1/2"	530	20,9	370	14,6	620	24,4	41	90,2
HTMD 201	2	70,6	0,28	0,44	R134a	230/50/1	<70	Rp 3/4"	650	25,6	370	14,6	860	33,9	65	143
HTMD 251	2,5	88,3	0,42	0,72	R134a	230/50/1	<70	Rp 3/4"	650	25,6	370	14,6	860	33,9	67	147,4
HTMD 321	3,2	113	0,44	0,72	R134a	230/50/1	<70	Rp 1"	650	25,6	370	14,6	860	33,9	80	176
HTMD 411	4,1	144,8	0,63	0,92	R134a	230/50/1	<70	Rp 1"	650	25,6	370	14,6	860	33,9	80	176
HTMD 641	6,4	226	0,75	1,1	R134a	230/50/1	<70	Rp 1 1/2"	780	30,7	740	29,2	960	37,8	170	374
HTMD 771	7,7	271,9	0,95	1,6	R134a	230/50/1	<70	Rp 1 1/2"	780	30,7	740	29,2	960	37,8	190	418
HTMD 1001	10	353,1	1,38	2,29	R134a	230/50/1	<70	Rp 2"	870	34,3	1020	40,2	1100	43,3	260	572
HTMD 1401	14	494,3	1,7	3	R134a	400/50/3	<70	Rp 2"	870	34,3	1020	40,2	1100	43,3	265	583
HTMD 1701	17	600,3	2,07	3,6	R134a	400/50/3	<70	Rp 2"	870	34,3	1020	40,2	1100	43,3	300	660

Data refers to the following nominal conditions: ambient temperature 25 °C, with inlet air at 7 bar and 35 °C and with a pressure dewpoint of 3 °C.
Maximum working conditions: ambient temperature 50 °C, air inlet temperature 70 °C and maximum working pressure 16 bar.

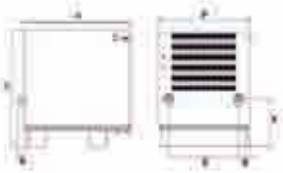
HTMD 051

HTMD 201 ÷ 411



HTMD 081 ÷ 121

HTMD 641 ÷ 1701



CORRECTION FACTOR FOR WORKING PRESSURE CHANGES															
Inlet Air Pressure	barg	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Factor		0,71	0,82	0,9	0,96	1	1,04	1,07	1,09	1,11	1,13	1,15	1,16	1,18	1,19

CORRECTION FACTOR FOR AMBIENT TEMPERATURE CHANGES								
Ambient Temperature	°C	20	25	30	35	40	45	50
Factor		1,05	1	0,95	0,89	0,84	0,78	0,72

CORRECTION FACTOR FOR INLET AIR TEMPERATURE CHANGES										
Air Temperature	°C	30	35	40	45	50	55	60	65	70
Factor		1,23	1	0,81	0,66	0,57	0,52	0,48	0,44	0,4

CORRECTION FACTOR FOR DEWPOINT CHANGES					
Dewpoint	°C	3	5	7	9
Factor		1	1,12	1,24	1,38

ADSORPTION

ADM DRYERS

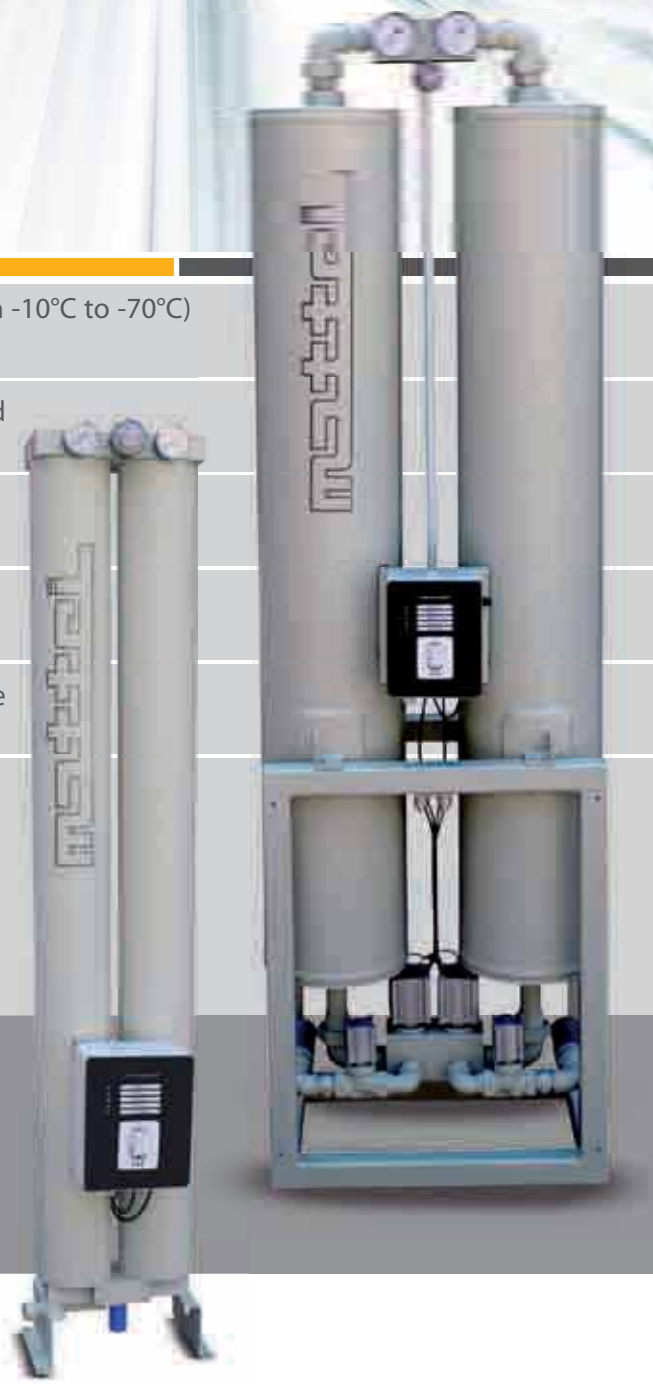
QUALITY COMPRESSED AIR: thanks to their low dewpoint (from -10°C to -70°C) and a residual water content below 0.08 g/m^3.

EASY INSTALLATION: The dryer is supplied ready for use, once placed in position only the electrical and air connections need to be arranged.

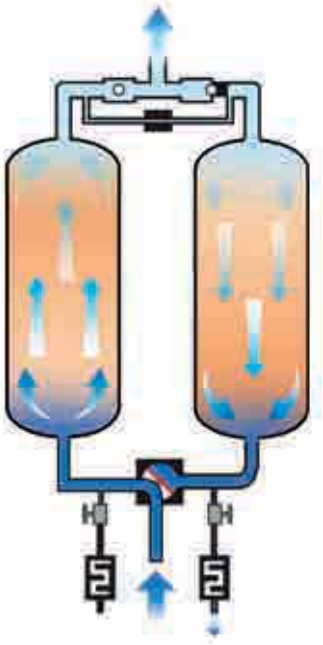
ELECTRONIC CONTROL SYSTEM: regulates the regeneration and pressurising times in the most suitable way.

SAFETY AND RELIABILITY: special air inlet valves remain open in case of failure, always ensuring a clear flow of air.

PERFORMANCES AND EFFICIENCY: the entire range of ADM dryers are equipped with gauges, all models also include a visual dewpoint indicator.



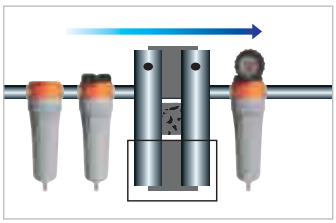
Heatless regeneration



In those cases where dry and clean compressed air is required, like hospitals, food, pharmaceutical and plating industries, or for laser and optical machinery, installation of a Mattei ADM dryer is the perfect choice to obtain the best product quality.

TECHNOLOGY

The adsorption dryer, composed of two twin columns charged with adsorbing material, will supply continually dried compressed air, by connecting cyclically the first or the second column. As the compressed air passes through one of the two columns, the particles of water vapour are attracted by the adsorbing material up to saturation of the column. While the adsorbing bed of the first column is working and adsorbs humidity from the inlet air, the bed of the second column is regenerating. The regeneration occurs through a small quantity of dried air being drawn from the outlet's main flow and removing moisture from the saturated adsorbing material by passing through it in order to expel the moisture to the atmosphere. This alternative drying and regenerating cycle assures continuous quality and performance of the adsorbing material.



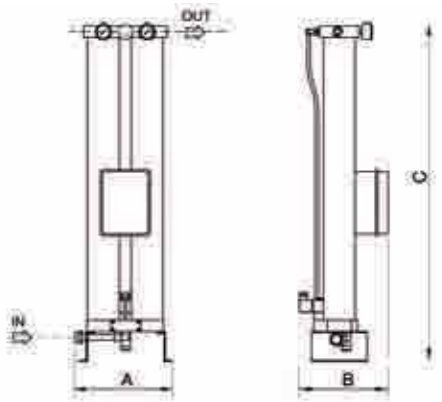
PREFILTERING

The adsorbing bed should be protected by installing Mattei "FM" coalescing oil removing filters grade "C2" and "C1", complete with automatic drainer at the dryer inlet. Downstream of the dryer the installation of a "C3" grade filter
to remove any dust released by the adsorbing bed is suggested.

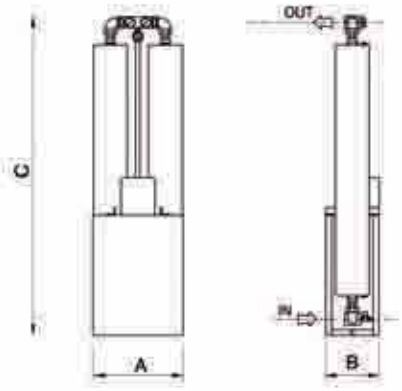
MODEL	FLOW-RATE		INSTALLED POWER	POWER SUPPLY	SOUND PRESSURE	CONNECTION	DIMENSIONS (MM)						WEIGHT	
							LENGTH		WIDTH		HEIGHT			
	m³/min	cfm	KW	V/Hz/ph	dB(A)	Inch (IN-OUT)	mm	inch	mm	inch	mm	inch	kg	lbs
ADM 08	0,08	2,8	0,1	230/50-60/1	<70	Rp 1/2" F	240	9,5	230	9,1	480	18,9	10	22
ADM 1	0,17	6	0,1	230/50-60/1	<70	Rp 1/2" F	240	9,5	230	9,1	680	26,8	15	33
ADM 3	0,33	11,7	0,1	230/50-60/1	<70	Rp 1/2" F	240	9,5	230	9,1	1180	46,5	20	44
ADM 5	0,5	17,7	0,1	230/50-60/1	<70	Rp 1/2" F	240	9,5	230	9,1	1180	46,5	25	55
ADM 6	0,67	23,7	0,1	230/50-60/1	<70	Rp 1/2" F	240	9,5	230	9,1	1480	58,3	30	66
ADM 10	1	35,3	0,1	230/50-60/1	<70	Rp 1/2" F	450	17,7	240	9,5	1200	47,3	60	132
ADM 16	1,67	59	0,1	230/50-60/1	<70	Rp 1/2" F	450	17,7	270	10,6	1250	49,3	110	242
ADM 23	2,33	82,3	0,1	230/50-60/1	<70	Rp 1" F	450	17,7	270	10,6	1590	62,6	180	396
ADM 30	3	105,9	0,1	230/50-60/1	<70	Rp 1" F	470	18,5	270	10,6	1690	66,6	220	484
ADM 43	4,33	152,9	0,1	230/50-60/1	<70	Rp 1" F	800	31,5	450	17,7	2000	78,8	280	616
ADM 58	5,83	205,9	0,1	230/50-60/1	<70	Rp 1 1/2" F	880	34,7	440	17,3	2170	85,5	300	660
ADM 75	7,5	264,8	0,1	230/50-60/1	<70	Rp 1 1/2" F	880	34,7	440	17,3	2470	97,3	350	770
ADM 100	10	353,1	0,1	230/50-60/1	<70	Rp 2" F	1000	39,4	530	20,9	2330	91,8	450	990
ADM 133	13,33	470,7	0,1	230/50-60/1	<70	Rp 2" F	1000	39,4	530	20,9	2730	107,6	650	1430
ADM 200	20	706,2	0,1	230/50-60/1	<70	Rp 2 1/2" F	1400	55,2	630	24,8	2550	100,5	760	1672
ADM 250	25	882,8	0,1	230/50-60/1	<70	Rp 2 1/2" F	1400	55,2	630	24,8	2750	108,4	1050	2310

Data refers to 20°C, 1 bar (a) at following operating conditions: intake air 25°C, 60% relative humidity, working pressure 7 bar g, pressure dewpoint -40°C, compressed air inlet temperature 35°C.
Electrical supply 230V/1ph/50Hz (different kinds of electrical supply are available upon request).
We recommend installation of a condensate drainer and Mattei oil removing filter series "FM" grade "C1".
Heat regeneration dryers are available upon request, with flow rates to 130 m3/h. For DP -70°C inlet flow rate should be reduced to 70%.

ADM 08 ÷ 6



ADM 10 ÷ 250



CORRECTION FACTOR FOR WORKING PRESSURE CHANGES								
Working pressure	bar	4	5	6	7	8	9	10
Factor		0,6	0,74	0,86	1	1,1	1,2	1,3

CORRECTION FACTOR FOR INLET AIR TEMPERATURE CHANGES							
Air Temperature	°C	25	30	35	40	45	50
Factor		1,1	1,05	1	0,9	0,7	0,6

OIL - WATER SEPARATORS

MOS SEPARATORS

FILTERING SYSTEM: Both the pre-filter and the main filter are composed of high quality and efficient filtering material.

FILTER ELEMENT SYSTEM: The main element may be easily removed due to the useful handle. This allows the filter to be replaced without getting dirty.

SIMPLE INSTALLATION: Connection can be made in three different directions, with the advantage of a quick and simple installation.

HEATER WITH THERMOSTAT: If the unit is to be installed in a cold environment the MOS separator can be equipped with an optional heating system, to avoid the condensate freezing.

ENVIRONMENT PROTECTION: manufactured with recyclable materials and complying with regulations for waste disposal.

PERFORMANCE AND WEATHER CONDITIONS

For suitable sizing of the systems and maximum efficiency please consider the world's different climatic areas. In fact, performance of MOS oil-water separator depends on the climatic area where it is operating, to choose the suitable model to be purchased it is essential to refer to the climate zones table.

COLD AND/OR DRY CLIMATE
Northern, Europe, Canada, USA Northern states, Central Asia

TEMPERATE CLIMATE
Central and Southern Europe, Central America

WET-TROPICAL CLIMATE
Coast regions of South-East Asia, Amazonia, Oceania and Congo

PLEASE NOTE THERE IS NO MENTION OF Eastern Europe, Russia, African continent (apart from Congo).

	COMPRESSOR MAXIMUM PERFORMANCE (m^3/min)				
	Turbine oil	VDL oil	VCL oil	PAO synthetic oil	Ester synthetic oil
MOS 010	2,4	2,4	1,9	1,9	1,6
	2,8	2,8	2,1	2,1	1,8
	2,1	2,1	1,6	1,6	1,4
MOS 011	4,9	4,9	3,8	3,8	3,2
	5,5	5,5	4,2	4,2	3,6
	4,2	4,2	3,2	3,2	2,8
MOS 012 - 112	7,3	7,3	5,6	5,6	4,8
	8,5	8,5	6,5	6,5	5,5
	6,2	6,2	4,8	4,8	4,0
MOS 014 - 114	14,6	14,6	11,3	11,3	9,6
	16,9	16,9	13,0	13,0	11,1
	12,5	12,5	9,6	9,6	8,2
MOS 015 - 115	29,3	29,3	22,5	22,5	19,1
	33,6	33,6	25,9	25,9	22,0
	24,9	24,9	19,1	19,1	16,3
MOS 016 - 116	58,5	58,5	45,0	45,0	38,3
	67,3	67,3	51,8	51,8	44,0
	49,7	49,7	38,3	38,3	32,5

OPERATING PRINCIPLE:

1. The oily condensate (under pressure) enters the expansion chamber (only for model with pre-separator).
2. Here the pressure is exhausted in the pre-separation container, without any turbulence.
3. Any solid particle is collected into a removable container.
4. Inside the pre-separation container the oil returns to the surface due to gravitational separation. Then the oil flows into the oil container.
5. The treated condensate reaches the filtering phase. The pre-filter retains much of the remaining oil as the condensate passes through it. It also removes any residual oil inside the filtering chamber.
6. The remaining oil particles are efficiently filtered by the main filter element.

The final result is clean water, ready for disposal directly in to the sewerage system. Replacing the filter is simple, quick and clean, due to the new technology of the element.

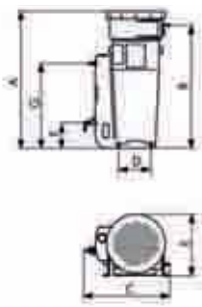
MODEL	RECEIVER VOLUME	FILLING VOLUME	CONDENSATE INLET	WATER OUTLET	OIL OUTLET	OIL COLLECTION CONTAINER	EMPTY WEIGHT	TEMPERATURE	INLET MAXIMUM WORKING PRESSURE	PRE-FILTER	MAIN FILTER
	l	l	pipe	pipe		l	Kg	Min - Max °C	bar	l	l
MOS 010	10	4,3	2 x 1/2"G	1/2"G	-	-	4	+5 a + 60	16	2,5	2,6
MOS 011	18,6	11,7	2 x 1/2"G	1/2"G	-	-	6	+5 a + 60	16	4,7	4,8
MOS 012	30,6	20,3	3 x 1/2"G (ø 10 mm) 1 x 1"G (ø 25 mm)	1/2"G	DN 25	5	12	+5 a + 60	16	2,5	5,4
MOS 112	30,6	22,7	3 x 1/2"G (ø 10 mm) 1 x 1"G (ø 25 mm)	1/2"G	DN 25	5	14	+5 a + 60	16	2,5	5,4
MOS 014	61,3	41,5	3 x 1/2"G (ø 10 mm) 1 x 1"G (ø 25 mm)	1"G	DN 25	5	16	+5 a + 60	16	6,7	10,4
MOS 114	61,3	46,3	3 x 1/2"G (ø 10 mm) 1 x 1"G (ø 25 mm)	1"G	DN 25	5	19	+5 a + 60	16	6,7	10,4
MOS 015	115,5	72,5	3 x 1/2"G (ø 13 mm) 1 x 1"G (ø 25 mm)	1"G	DN 40	10	32	+5 a + 60	16	18,5	20,2
MOS 115	115,5	84,3	3 x 1/2"G (ø 13 mm) 1 x 1"G (ø 25 mm)	1"G	DN 40	10	37	+5 a + 60	16	18,5	20,2
MOS 016	228,4	137,2	3 x 1/2"G (ø 13 mm) 1 x 1"G (ø 25 mm)	1"G	DN 40	20	42	+5 a + 60	16	36,5	40,3
MOS 116	228,4	158,8	3 x 1/2"G (ø 13 mm) 1 x 1"G (ø 25 mm)	1"G	DN 40	20	53	+5 a + 60	16	36,5	40,3

MODEL	DIMENSIONS (MM)							
	A	B	C	D	E	F	G	H
MOS 010	530	470	310	100	230	110	330	-
MOS 011	600	540	390	140	260	110	370	-
MOS 012	-	730	350	-	390	320	340	200
MOS 112	710	-	350	550	-	320	340	200
MOS 014	-	900	410	-	470	420	460	240
MOS 114	880	-	410	600	-	420	460	240
MOS 015	-	1120	530	-	580	505	550	270
MOS 115	1090	-	530	770	-	505	550	270
MOS 016	-	1200	660	-	710	535	580	200
MOS 116	1160	-	660	940	-	535	580	200

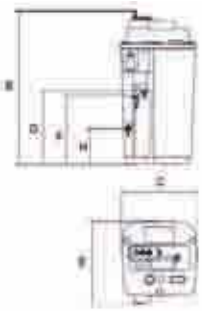
Models MOS 012-MOS 014-MOS 015-MOS 016 models are without pre-separator.
Models MOS 112-MOS 114-MOS 115-MOS 116 models are with pre-separator.

MOS 010

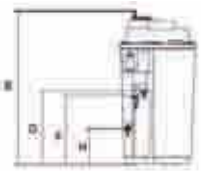
MOS 011



MOS 012 ÷ 016



MOS 112 ÷ 116



SEPARATORS AND DRAINS

CICLONE AND DRAIN

CICLONE CONDENSATE SEPARATOR

The **MATTEI CYCLONE** condensate separators are centrifugal.
The high standards of design, production and assembly, the quality of the used materials ensure a high level of separation, including solid particles. They do not require maintenance.

MODEL	PMAX		AIR DELIVERY MAX		CONDENSATE DRAIN CONNECTION	CONNECTIONS	DIMENSIONS (MM)				WEIGHT	
							WIDTH		HEIGHT			
	bar	psig	m³/min	cfm	inch	IN-OUT air	mm	inch	mm	inch	kg	lbs
CICLONE 1	16	232	1	35,3	Rp 1/8"	Rp 1/2"	90	3,5	220	8,7	0,6	1,3
CICLONE 3	16	232	3	105,9	Rp 3/8"	Rp 3/4"	90	3,5	280	11	0,7	1,5
CICLONE 5	16	232	5	176,6	Rp 3/8"	Rp 1"	120	4,7	310	12,2	1,1	2,4
CICLONE 10	16	232	9,5	335,5	Rp 3/8"	Rp 1 1/2"	120	4,7	390	15,4	1,3	2,9
CICLONE 17	16	232	16,5	582,6	Rp 3/8"	Rp 2"	170	6,7	500	19,7	3,6	7,9
CICLONE 24	16	232	24	847,5	Rp 3/8"	Rp 2 1/2"	170	6,7	680	26,8	4,5	9,9

MATTEI CONDENSATE DRAINS

MATTEI DRAIN is a device with timer and adjustable that cyclically eliminates condensate water from the compressed air dryer. The drainer with timer is equipped with a test button allowing the operation of the device to be checked and has two LED's indicating there is electrical supply and the valve is under the draining phase. The drainers **MATTEI DRAINS 101, 200** and **202** are equipped with an integrated storage receiver, inside which there is a level control driven by an intelligent electronic circuit based on microprocessor logic. All functions of the drain are displayed on a control panel, which also includes a test button for manual drain.

MODEL	PMAX		MAX ABSORBED POWER	CONDENSATE DRAIN CONNECTION	COMPRESSOR CAPACITY	DRYER CAPACITY	FILTER CAPACITY	POWERSUPPLY	DIMENSIONS (MM)						WEIGHT	
									LENGTH		WIDTH		HEIGHT			
	bar	psig	kW	inch	m³/h	m³/h	m³/h	V/Hz/ph	mm	inch	mm	inch	mm	inch	kg	lbs
MATTEI DRAIN	16	232	0,01	Rp 1/2"G_Rp 3/4"G	500	950	4750	230/50-60/1	110	4,3	50	2	90	3,5	0,4	0,9
MATTEI DRAIN 101	16	232	0,01	Rp 1/2" G	450	900	4500	230/50-60/1	140	5,5	70	2,8	140	5,5	0,6	1,3
MATTEI DRAIN 200	16	232	0,01	Rp 1/2" G	900	1800	9000	230/50-60/1	140	5,5	70	2,8	160	6,3	0,7	1,5
MATTEI DRAIN 202	16	232	0,01	Rp 1/2" G	1800	3600	18000	230/50-60/1	140	5,5	70	2,8	210	8,3	1,2	2,6

STORAGE
RECEIVERS

The installation of a storage receiver allows an improved pressure steadiness inside the air system, provides for possible peaks in the air demand, and optimises the operation of the linked compressor.

MATTEI vertical receiver are available in 2 versions:
V painted
Z galvanized

Upon request we can supply receiver with higher capacity.

KIT FOR UP 900 LITRE RECEIVERS - 11 BAR:
The kit includes:
- Declaration of conformity for the receiver and safety valve
- Safety valve approved by PED
- Gauge in compliance with EN 837

KIT FOR RECEIVERS FROM 1000 TO 5000 - 11 BAR:
The kit includes:
- Declaration of conformity for the receiver and safety valve
- Safety valve approved by PED
- Gauge in compliance with EN 837
- Condensate drain cock

KIT FOR RECEIVERS - 15 BAR:
The kit includes:
- Declaration of conformity for the receiver and safety valve
- Safety valve approved by PED
- Gauge in compliance with EN 837
- Condensate drain cock

MODEL	PMAX		RECEIVER CAPACITY	AIR IN-OUT CONNECTION	CONDENSATE DRAIN CONNECTION	DIMENSIONS (MM)				WEIGHT	
						HEIGHT		DIAMETER			
	bar(g)	psig	l	inch	inch	mm	inch	mm	inch	kg	lbs
S 500 11V	11	160	500	Rp 1"	Rp 1/2"	2100	82,74	600	23,64	120	264
S 500 11Z	11	160	500	Rp 1"	Rp 1/2"	2100	82,74	600	23,64	130	286
S 720 11V	11	160	720	Rp 1"	Rp 2"	2050	80,77	750	29,55	190	418
S 720 11Z	11	160	720	Rp 1"	Rp 2"	2050	80,77	750	29,55	210	462
S 900 11V	11	160	900	Rp 1 1/2"	Rp 2"	2250	88,65	800	31,52	200	440
S 900 11Z	11	160	900	Rp 1 1/2"	Rp 2"	2250	88,65	800	31,52	220	484
S 1000 11V	11	160	1000	Rp 2"	Rp 2"	2350	92,59	800	31,52	210	462
S 1000 11Z	11	160	1000	Rp 2"	Rp 2"	2350	92,59	800	31,52	230	506
S 1500 11V	11	160	1500	Rp 2"	Rp 2"	2450	96,53	1000	39,4	320	704
S 1500 11Z	11	160	1500	Rp 2"	Rp 2"	2450	96,53	1000	39,4	350	770
S 2000 11V	11	160	2000	Rp 2"	Rp 2"	2810	110,714	1100	43,34	380	836
S 2000 11Z	11	160	2000	Rp 2"	Rp 2"	2810	110,714	1100	43,34	420	924
S 3000 11V	11	160	3000	Rp 2"	Rp 2"	3000	118,2	1200	47,28	550	1210
S 3000 11Z	11	160	3000	Rp 2"	Rp 2"	3000	118,2	1200	47,28	600	1320
S 4000 11V	11	160	4000	Rp 3"	Rp 3"	3100	122,14	1450	57,13	830	1826
S 4000 11Z	11	160	4000	Rp 3"	Rp 3"	3100	122,14	1450	57,13	920	2024
S 5000 11V	11	160	5000	Rp 3"	Rp 3"	3600	141,84	1450	57,13	950	2090
S 5000 11Z	11	160	5000	Rp 3"	Rp 3"	3600	141,84	1450	57,13	1050	2310
S 500 15V	15	218	500	Rp 1"	Rp 1/2"	2100	82,74	600	23,64	135	297
S 500 15Z	15	218	500	Rp 1"	Rp 1/2"	2100	82,74	600	23,64	150	330
S 1000 15V	15	218	1000	Rp 2"	Rp 2"	2350	92,59	800	31,52	220	484
S 1000 15Z	15	218	1000	Rp 2"	Rp 2"	2350	92,59	800	31,52	245	539
S 1500 15V	15	218	1500	Rp 2"	Rp 2"	2450	96,53	1000	39,4	320	704
S 1500 15Z	15	218	1500	Rp 2"	Rp 2"	2450	96,53	1000	39,4	365	803
S 2000 15V	15	218	2000	Rp 2"	Rp 2"	2810	110,714	1100	43,34	400	880
S 2000 15Z	15	218	2000	Rp 2"	Rp 2"	2810	110,714	1100	43,34	440	968
S 3000 15V	15	218	3000	Rp 2"	Rp 2"	3000	118,2	1200	47,28	580	1276
S 3000 15Z	15	218	3000	Rp 2"	Rp 2"	3000	118,2	1200	47,28	630	1386

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