

Save the world with



W-PLUS



The Best Quality of Air Treatment

Why M-PLUS ?

ISO 9001 certification is the most comprehensive document in the ISO9000 series of standards and defines a quality management system for the manufacture, delivery and servicing of goods that must meet critical performance standards.

M-Plus Filtration Co., Ltd. are accredited for our range of the scope "Manufacture of filter element of air compressor system and vacuum system for industry and hospital" by Management System Certification Institute (Thailand) (MASCII).



ISO 8573 is the group of international standards relating to the quality of compressed air and consists of nine separate parts. Part 1 specifies the quality requirement of the compressed air and Part 2-9 specifying the methods of testing for a range of contaminants.

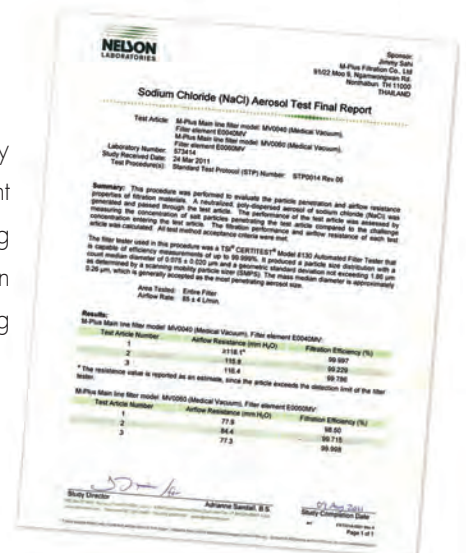
In 2001, the ISO 8573.1 air quality standard was amended in an effort to provide a more stringent air quality specifications for critical applications and the latest revision is expressed as ISO8573.1 : 2001.

Within ISO8573.1 : 2001, a number of quality classes are shown in tabular form, each specifying the maximum amount of solid particulate, water and oil allowable per cubic metre of compressed air.

This document provides an introduction to ISO 8573.1 the international standard for compressed air quality, purification equipment required to achieve the standards and how to apply the standard to typical applications.



TSI® CERTITEST® Model 8130 Automated Filter Tester that is capable of efficiency measurements of up to 99.999%. It produced a particle size distribution with a count median diameter of $0.075 \pm 0.020 \mu\text{m}$ and a geometric standard deviation not exceeding $1.86 \mu\text{m}$ as determined by a scanning mobility particle sizer (SMPS). The mass median diameter is approximately $0.26 \mu\text{m}$, which is generally accepted as the most penetrating aerosol size.



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Compressed Air Filter

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Compressed Air Classes

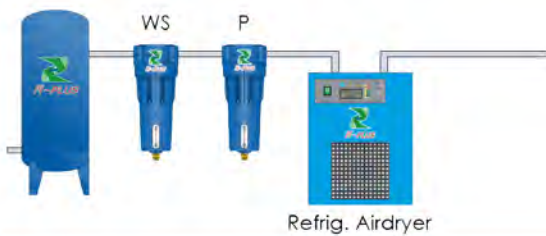
Compressed air purity classes ISO8573-1:2001(E)

ISO 8573-1:2001(E) details the following classifications for specifying the purity of compressed air.

Example: Compressed air to air purity class 1.2.1 (Particle removal to 0.01 micron, Water to -40°C pdp, Oil to 0.01 mg/m^3)

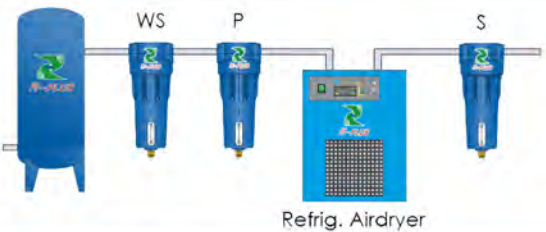
CLASS	SOLID PARTICLES Maximum number of particles per m^3			HUMIDITY & LIQUID WATER pressure dewpoint $^{\circ}\text{C}$	OIL (including aerosol, liquid & vapour mg/m^3)
	0.1 — 0.5 micron	0.5 — 1.0 micron	1.0 — 5.0 micron		
1	100	1	0	-70	0.01
2	100,000	1,000	10	-40	0.1
3	-	10,000	500	-20	1
4	-	-	1,000	+3	5
5	-	-	20,000	+7	-
6	-	-	-	+10	-

FILTER GRADE	Q (25 micron)	P (5 micron)	S (1 micron)	X (0.01 micron)	Z (Activated carbon)
Maximum particle size Class to ISO 8573-1:2001(E)	Class 4	Class 3	Class 2	Class 1	Class 1
Maximum oil content Class to ISO 8573-1:2001(E)	-	Class 4	Class 2	Class 1	Class 1



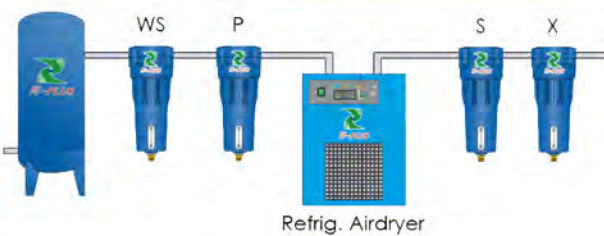
Air Quality to ISO 8573-1:2001(E), Class 3.4

Application: General workshop, servicing shop, quality sandblasting



Air Quality to ISO 8573-1:2001(E), Class 2.4.3

Application: Pneumatic equipment, spray painting, pneumatic transportation



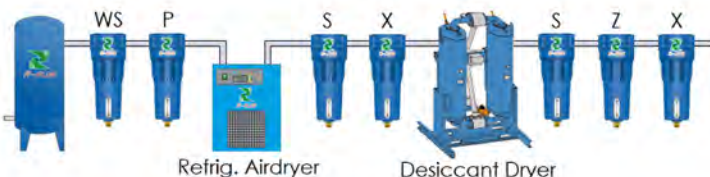
Air Quality to ISO 8573-1:2001(E), Class 1.4.1

Application: Packing, checking and instruments, powder painting, tools



Air Quality to ISO 8573-1:2001(E), Class 1.4.1

Application: Feed packing, weaving factory, photo and cosmetics factory



Air Quality to ISO 8573-1:2001(E), Class 1.1.2.3.1

Application: Chemical plants, pharmaceutical factory, optic, electronic, micro-chips, feed productions, industrial medicine.

For medicinal and chemical applications is better if compressed air tank is protected by internal anticorrosive paint.

Note: These are only general rules. User of the equipment must comply with all local and national pressure equipment legislation in the country of installation.

Construction

A dynamic approach to design, material selection and construction means that M-Plus Filtration is at the forefront of filtration technology. Our internal Research and Development team constantly identify, evaluate and implement enhancements to improve the ease of use and performance of our market leading range. Typically, most alternative filter elements are manufacture to M Plus Filtration's standard construction illustrated below.

Filter Element Design and Materials

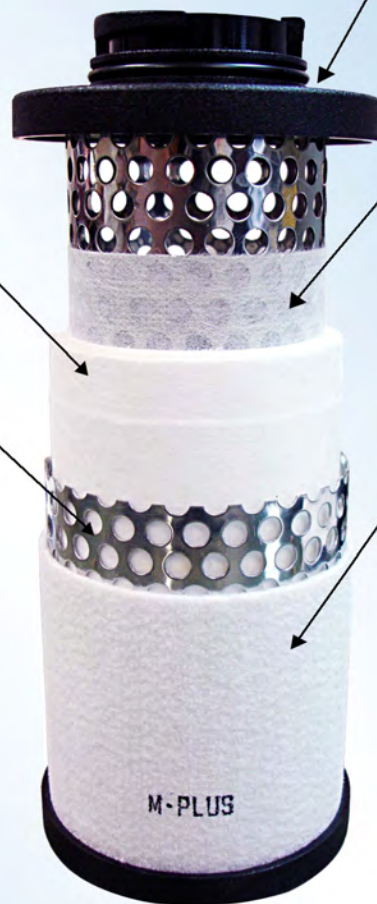
Borosilicate Microfibre Glass Material high quality filter material is used to manufacture the media pack. This material, with a bonded structure, withstands high temperatures, is completely inert and is immune to degradation. With sub micron fibre diameters and an extremely high voids volume (as seen in this stereo micro-scan above) it is available in different grades for varying efficiency.



Stainless Steel perforated support cylinders, twice as strong as galvanized steel, can withstand 7 bar (100 psig) in either direction.

Deep Bed Multi Wrap technology is used to form the media pack. This offers low differential pressure, extremely high oil removal efficiencies and proven continuous performance with long service life.

Extra Stainless Steel inner support on larger reverse flow elements is provided by the addition of a coil spring spot welded to the inner cylinder. This feature ensures these element meet the demands of "outside to in" flow and do not rupture causing downstream contamination.



High Nitrile "O" Rings ensure perfect sealing within the filter housing whilst withstanding high temperatures of over 120°C (250°F).

Particulate Pre-filtration on both sides of the media pack offers protection with air flow in either direction. This non-woven fabric also enhances the strength of the filter pack and increases filter life.

Polyester Fibre Drainage Sleeve, Has now become industry standard. This polyester material collects coalesced oil from the media pack and allows it to gravitate down to the quiet zone of the filter bowl thus preventing any oil carryover. Unlike reticulated foams which can seriously degrade causing downstream contamination, this material has a high tensile strength and withstands all the demands of compressed air filtration.



Example of a typical reticulated foam sleeve exhibiting considerable degradation, a much less robust solution than the M-Plus polyester drainage sleeve.

Alternative Filter Element

Replacement for HIROSS

HIROSS Model	M-PLUS Model	CONNECTION Ø	FLOW-RATE M ³ /min
004	MH004	3/4" or 3/8"	0.4
007	MH007	3/4" or 3/8"	0.7
015	MH015	3/4" or 1/2"	1.5
024	MH024	1.1/2" or 1"	2.4
035	MH035	1.1/2"	3.5
060	MH060	1.1/2"	6.0
090	MH090	2"	9.0
120	MH120	2"	12.0
150	MH150	2"	15.0
240	MH240	PN16 DN65	24.0

Note: * is grade of filter element

HIROSS GRADE	M-PLUS GRADE	Particle removal micron	Oil removal mg/m ³
D	Q	5	N.A.
Q	P	3	N.A.
P	S	1	0.1
S	X	0.01	0.01
C	Z	N.A.	0.003



Replacement for DOMNICK HUNTER



DOMNICK HUNTER Model	M-PLUS Model	CONNECTION Ø	FLOW-RATE M ³ /min
K009*	MD009*	1/4"	0.5
K017*	MD017*	3/8"	1.0
K030*	MD030*	1/2"	1.8
K058*	MD058*	3/4"	3.6
K145*	MD145*	1" - 1.1/2"	4.8 - 8.7
K220*	MD220*	1.1/2" - 2"	12 - 13.2
K330*	MD330*	2"	19.8
K430*	MD430*	2.1/2" - 3"	24 - 25.8
K620*	MD620*	3"	37.2

Note: * is grade of filter element

DOMNICK HUNTER GRADE	M-PLUS GRADE	Particle removal micron	Oil removal mg/m ³
PF	Q	25	N.A.
AO	S	1	0.6
AA	X	0.01	0.01
AX	V	0.01	0.001
ACS	Z	N.A.	0.003
AR	P	1	N.A.
AAR	A	0.01	N.A.

Alternative Filter Element

Replacement for HANKISON

HANKISON Model	M-PLUS Model	CONNECTION Ø	FLOW-RATE M ³ /min
-12	MHK-12	3/8" or 1/2"	0.57
-16	MHK-16	3/8" or 1/2"	1.00
-20	MHK-20	3/8" or 1/2"	1.75
-24	MHK-24	3/4" or 1"	2.9
-28	MHK-28	3/4" or 1"	4.9
-32	MHK-32	1" or 1.1/4" or 1.1/2"	7.2
-36	MHK-36	1" or 1.1/4" or 1.1/2"	11.0
-40	MHK-40	2" or 2.1/2"	14.0
-44	MHK-44	2.1/2"	18.0
-48	MHK-48	2.1/2"	22.0

Note: * is grade of filter element

HANKISON GRADE	M-PLUS GRADE	Particle removal micron	Oil removal mg/m ³
E9	P	3	5
E7	S	1	1
1	X	0.01	0.01
E3	A	0.01	0.001
E1	Z	N.A.	0.003



Replacement for ATLAS COPCO



ATLAS COPCO Model	M-PLUS Model	CONNECTION Ø	FLOW-RATE M ³ /min
009	MAC009	3/8"	0.54
017	MAC017	1/2"	1.02
032	MAC032	1/2"	1.92
044	MAC044	3/4" or 1"	1.64
060	MAC060	1"	3.6
120	MAC120	1.1/2"	7.2
150	MAC150	1.1/2"	9.0
175	MAC175	1.1/2"	10.5
260	MAC260	2" or 2.1/2"	16.8
390	MAC390	3"	23.4
520	MAC520	3"	31.2
780	MAC780	DN100-DN300	46.8-432

Note: * is grade of filter element

ATLAS COPCO GRADE	M-PLUS GRADE	Particle removal micron	Oil removal mg/m ³
DD	S	1	0.1
DDP	A	1	N.A.
PD	X	0.01	0.01
PDP	V	0.01	N.A.
QD	Z	N.A.	0.003

Alternative Filter Element

Replacement for ULTRA FILTER

ULTRA FILTER Model	M-PLUS Model	CONNECTION Ø	FLOW-RATE M ³ /min
*02/05	MU*02/05	1/4"	0.3
*03/05	MU*03/05	3/8"	0.6
*03/10	MU*03/10	3/8"	1.0
*04/10	MU*04/10	1/2"	1.5
*04/20	MU*04/20	1/2"	2.0
*05/20	MU*05/20	3/4"	3.0
*05/25	MU*05/25	1"	4.5
*07/25	MU*07/25	1.1/4"	6.0
*07/30	MU*07/30	1.1/2"	8.0
*10/30	MU*10/30	2"	12.0
*15/30	MU*15/30	2"	18.0
*20/30	MU*20/30	2.1/2"	24.0
*30/30	MU*30/30	3"	32.0
*30/50	MU*30/50	3"	48.0

Note: * is grade of filter element

ULTRA FILTER GRADE	M-PLUS GRADE	Particle removal micron	Oil removal mg/m ³
PE	Q	25	N.A.
SB	P	5	N.A.
FF	S	0.01	0.1
MF	A	0.01	0.03
SMF	X	0.01	0.01
AK	Z	N.A.	0.003



Replacement for ORION



ORION Model	M-PLUS Model	CONNECTION Ø	FLOW-RATE M ³ /min
*400-C	MO*400 C	1"	3.9
*700-C	MO*700 C	1.1/2"	6.6
*1000-A	MO*1000 C	1.1/2"	10.6
*1500-B	MO*1500 C	2"	13.8

Note: * is grade of filter element

ORION GRADE	M-PLUS GRADE	Particle removal micron	Oil removal mg/m ³
EL	S	1	N.A.
EM	X	0.01	0.1
EK	Z	N.A.	0.003

Alternative Filter Element

Replacement for ZANDER

ZANDER Model	M-PLUS Model	CONNECTION Ø	FLOW-RATE M ³ /min
1030*	MZ1030*	1/4"	0.5
1050*	MZ1050*	1/4"	0.8
1070*	MZ1070*	3/8"	1.1
1140*	MZ1140*	1/2"	1.6
2010*	MZ2010*	3/4"	3.0
2020*	MZ2020*	1"	5.0
2030*	MZ2030*	1.1/2"	7.8
2050*	MZ2050*	1.1/2"	11.6
3050*	MZ3050*	2"	15.6
3075*	MZ3075*	2"	24.1
5060*	MZ5060*	2.1/2"	32.3
5075*	MZ5075*	3"	40.0

Note: * is grade of filter element

ZANDER GRADE	M-PLUS GRADE	Particle removal micron	Oil removal mg/m ³
V	P	3	N.A.
Z	S	1	0.5
Y	A	0.01	0.1
X	X	0.01	0.01
A	Z	N.A.	0.003



Replacement for ORION(NEW)



ORION (NEW) Model	M-PLUS Model	CONNECTION Ø	FLOW-RATE M ³ /min
*150B	MOR*150 C	3/4"	1.2
*200B	MOR*200 C	3/4"	1.8
*250B	MOR*250 C	1"	2.7
*400	MOR*400 C	1"	3.9
*700	MOR*700 C	1.1/2"	6.6
*1000	MOR*1000 C	1.1/2"	10.6
*1300	MOR*1300 C	2"	13.8
*2000	MOR*2000 C	2"	20.0

Note: * is grade of filter element

ORION (NEW) GRADE	M-PLUS GRADE	Particle removal micron	Oil removal mg/m ³
EDS	P	5	N.A.
ELS	S	1	0.1
EMS	X	0.01	0.1
EKS	Z	N.A.	0.003

Alternative Filter Element

Replacement for FRIULAIR

FRIULAIR Model	M-PLUS Model	CONNECTION Ø	FLOW-RATE M ³ /min
T*008	T*008	3/8"	0.85
T*012	T*012	1/2"	1.20
T*018	T*018	3/4"	1.85
T*030	T*030	1"	3.3
T*055	T*055	1.1/2"	5.5
T*080	T*080	1.1/2"	8.1
T*120	T*120	1.1/2"	12.5
T*160	T*160	2"	16.8
T*250	T*250	2.1/2"	26.0
T*400	T*400	3"	42.0

Note: * is grade of filter element

FRIULAIR GRADE	M-PLUS GRADE	Particle removal micron	Oil removal mg/m ³
P	P	3	N.A.
S	S	1	0.1
X	X	0.01	0.01
Z	Z	N.A.	0.003



Replacement for SWAN/BEA



SWAN/BEA Model	M-PLUS Model	CONNECTION Ø	FLOW-RATE M ³ /min
30	MARS30	1/4"	0.5
100	MARS100	1/2"	1.7
180	MARS180	3/4"	3.0
290	MARS290	1"	4.8
460	MARS460	1.1/2"	10.2
610	MARS610	2"	15.5
930	MARS930	2.1/2"	17.5
1050	MARS1050	3"	23.3
1400	MARS1400	3"	35.0

Note: * is grade of filter element

SWAN/BEA GRADE	M-PLUS GRADE	Particle removal micron	Oil removal mg/m ³
ARF	P	3	N.A.
ARB	S	1	0.1
ARA	X	0.01	0.01
ACA	Z	N.A.	0.003

Alternative Filter Element

Replacement for SMC



SMC Model	SMC Model	M-PLUS Model	CONNECTION Ø	FLOW-RATE M ³ /min
-EL150	AFF-EL2B	MEL-150	1/8" or 1/4" or 3/8"	0.2-0.3
-EL250	AFF-EL4B	MEL-250	1/4" or 3/8" or 1/2"	0.5-0.75
-EL350	AFF-EL8B	MEL-350	3/8" or 1/2" or 3/4"	1.0-1.5
-EL450	AFF-EL11B	MEL-450	1/2" or 3/4" or 1"	2.0-2.2
-EL550	AFF-EL22B	MEL-550	3/4" or 1"	3.5
-EL650	AFF-EL37B	MEL-650	1" or 1.1/2"	6.0
-EL850	AFF-EL75B	MEL-850	1.1/2" or 2"	12.0

Note: * is grade of filter element

SMC GRADE	M-PLUS GRADE	Particle removal micron	Oil removal mg/m ³
AFF	P	3	N.A.
AM	A	0.3	1
AMD	S	0.01	0.1
AME	X	0.01	0.3
AMF	Z	N.A.	0.003

And All kind of filter

(Air filter, Hydraulic filter, Oil filter, Oil separator and Make to order)



Medical Vacuum Filter

Aluminium filters housing with drain flask for the processing of air used in the medical vacuum technology.



M-Plus Filtration design and manufacture a comprehensive range of medical vacuum filters for centralized hospital vacuum plant installations as specified in the UK standard HTM2022.

The M-Plus ranges of medical vacuum filters are designed to protect these installations from liquid, solid and bacterial contamination. Liquids are collected in a transparent drain flask which can be easily removed for sterilization. Models MV0008-MV0400 incorporates the unique M-Plus designed "push-on" filter element.

This reduces maintenance time and allows the filter to be located in the most confined spaces.

The MV grade filter elements incorporate a pre filter and low pressure loss filter to remove solid and bacterial contamination.

They use high efficiency borosilicate glass microfibre media to remove all dirt particles. All elements include stainless steel metalwork and are fitted with an external pre filter layer of 80 p.p.i., open cell reticulated polyester foam. These filters are a proven success and now include such features as differential pressure indicators which are a specific requirement of the HTM2022 medical gas pipeline specification.

The efficiency of the installed filter elements exceeds the 0.005% penetration specified in HTM2022 for infectious disease unit, when tested in accordance with BS3928.

Application

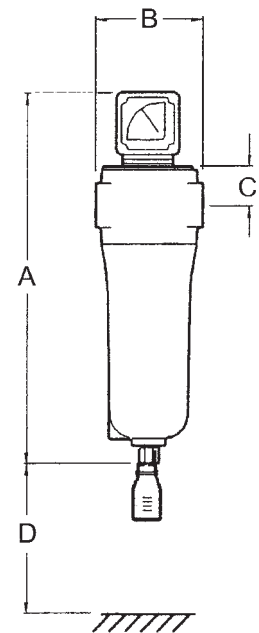
The medical vacuum filter can be used in throughout semiconductor manufacturing, precision mechanics, pharmaceutical, cosmetics, food industry, hospitals, dental departments, laboratories, pathology laboratories and other locations where requirement bacteria and dust removal. They are also used in vacuum cleaner for industry, commercial and residential are filtration.

Medical Vacuum Filter

Technical Data & Specification

FILTER	FREE AIR CAPACITY AT ATMOSPHERIC PRESSURE			RAREFIED AIR CAPACITY AT 500 mm Hg VACUUM			DIMENSIONS (mm)				CONN.	WEIGHT (+Kg)	ELEMENT (No. x Model)
	MODEL	L/min	SCFM	Nm ³ /h	L/min	SCFM	Nm ³ /h	A	B	C			
MV0008	100	3.5	6	300	10.5	18	220	90	25	80	1/2"	0.6	1 x E0008MV
MV0012	200	7	12	600	21	36	220	90	25	80	1/2"	0.6	1 x E0012MV
MV0020	250	9	15	750	27	45	280	90	25	100	3/4"	0.7	1 x E0020MV
MV0040	600	21	36	1800	63	108	305	120	37	120	1"	1.1	1 x E0040MV
MV0060	1200	42	72	3600	126	216	385	120	37	120	1 1/2"	1.3	1 x E0060MV
MV0090	2000	70	120	6000	210	360	385	120	37	120	1 1/2"	1.4	1 x E0090MV
MV0110	3000	106	180	9000	318	540	500	165	54	150	2"	3.7	1 x E0110MV
MV0300	4000	141	240	12000	423	720	710	200	65	200	3"	6.7	1 x E0300MV
MV0400	5000	177	300	15000	531	900	865	200	65	200	3"	7.9	1 x E0400MV

SPECIFICATION	Grade MV	
Penetration to BS 3928	< 0.005%	
Maximum temperature	100°C	212°F
Pressure loss-clean	35 mbar	0.5 psi
Pressure loss-change element	100 mbar	1.5 psi
Maximum working pressure	7 barg	100 psig
Maximum working vacuum	1013 mbar	15 psi
Element end cap colour	black	



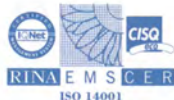
Benefits

- Filtration Performance exceeds requirements of HTM2022. MV filter efficiency tested with a bacterial challenge test and BS3928 sodium flame test.
- Low cost of ownership
- Multiple port sizes for a given flow rate provides increased flexibility during installation
- Corrosion protected
- Internally and externally epoxy coated
- Small, compact & lightweight
- Easily removable, sterilisable drain flask
- Quick, easy maintenance
- 10 Year Housing Guarantee
- Filter elements must be replaced every six months

Compressed Air Filter

Clean air solution of treating the compressed air

ME series



Compressed air in industrial applications contains in 1 Nm³ more than 100 million of polluting particles. Most of these particles are so small in dimension, less than 5 micron, that they cannot be intercepted by the compressors.

Such particles, mixed with water and oil vapours generated during compression, cause the early wear and tear of the appliances and consequently they are the cause of expensive interruptions of the production and remarkable increase the number of interventions for maintenance purposes.

A right selection of filters will allow the best choice of the suitable equipment according to the quantity of air to be treated and the necessary filtration degree in order to increase and improve the performances of the whole system.

A filter element, which is saturated and/or obstructed from impurities compromises the air's quantity and determines higher operation costs of the whole plant. A pressure drop of 1 bar corresponds to a 15% higher energy consumption of the compressor reason why it is strongly recommended to replace the filter element when the pressure drop reaches a value of 0.6 bar (9 psi).

Safety: All equipments are manufactured, when applicable, according to the main European Directives like 87/404/EEC, 97/23/EC(PED).

Upon request, they are available in the ASME VIII-1 execution.

Professional concept

Connection Coils

Available in BSP and NPT executions. A protection on the filter's coil are used for a friendly connection.

Safety Whistle System

Prevents housing being opened whilst in operation.

Best Performances

The optimised filter design coupled with the new elements reduces flow resistance through the filter, compared with the previous series, up to 80%

Filter Element Installation

A carefully designed bayonet connection is used on the filter. It guarantees easy and safe KLIICK-ON fixing of the element, eliminates the need of the tie rod and the whole cross-sectional area is fully available.



Compressed Air Filter

C Cyclone

Q 25 micron

P 3 micron

S 1 micron

X 0.01 micron

Z Activated Carbon

Easy to install it is the best solution to remove the condensation generated during the compression process. upon request equipped with floating timed or instellidrain type condensate drains.

Filter capable to separate emulsion and particles down to 25 micron

Pressure loss 0.4 psi

Filter capable to separate emulsion and particles down to 3 micron

Pressure loss 0.6 psi

Filter capable to separate particles down to 1 micron, liquid oil included.

Maximum contents of residual oil 0.1 mg/m³

Pressure loss 1.1 psi

Oil removing filter capable to separate residual oil and extremely small particles down to 0.01 micron.

Maximum contents of residual oil 0.01 mg/m³. It produces air technically free from oil.

Pressure loss 1.5 psi

Activated carbon filter for the elimination of oil vapours and odour. When installed, after a (X) grade filter, it lower the maximum contents of residual oil 0.003 mg/m³

Pressure loss 1.1 psi



Accessories



Differential Pressure Gauge



Differential Pressure Indicator



Automatic Drain



Floating Drain

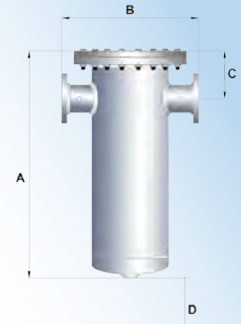


Timed Drain

ME0008 - 0480



ME0500 - 1800



FILTER	FLOW-RATE			DIMENSIONS (mm)				PRESS. (bar max)	CONN. Ø	WEIGHT (+Kg)	ELEMENT (No. x Model)
	(l/min)	(m ³ /h)	(SCFM)	A	B	C	D				
ME 0008	880	53	31	220	90	25	80	16	1/2"	0.6	1 X E0008*
ME 0012	1200	72	42	220	90	25	80	16	1/2"	0.6	1 X E0012*
ME 0020	2100	126	74	280	90	25	100	16	3/4"	0.7	1 X E0020*
ME 0040	4100	246	145	305	120	37	120	16	1"	1.1	1 X E0040*
ME 0060	6300	378	222	385	120	37	120	16	1.1/2"	1.3	1 X E0060*
ME 0090	9100	546	321	385	120	37	120	16	1.1/2"	1.4	1 X E0090*
ME 0110	11200	672	395	500	165	54	150	16	2"	3.7	1 X E0110*
ME 0140	14100	846	498	500	165	54	150	16	2"	3.8	1 X E0140*
ME 0180	18000	1080	635	675	165	54	150	16	2.1/2"	4.8	1 X E0180*
ME 0240	23500	1410	830	675	165	54	150	16	2.1/2"	4.9	1 X E0240*
ME 0300	29600	1776	1045	710	200	65	200	16	3"	6.7	1 X E0300*
ME 0400	39800	2388	1405	865	200	65	200	16	3"	7.9	1 X E0400*
ME 0480	48800	2928	1723	985	200	65	200	16	3"	8.6	1 X E0480*

ME 0500	50500	3030	1783	1126	485	195	300	12	DN100	116	1 X E0500*
ME 0700	70000	4200	2800	1137	630	238	300	12	DN125	184	2 X E0400*
ME 0900	95000	5700	3300	1227	630	238	300	12	DN150	197	2 X E0500*
ME 1200	125000	7500	4400	1261	676	241	300	12	DN150	250	3 X E0500*
ME 1500	155000	9300	5400	1316	712	262	300	12	DN175	300	2 X E0400* 2 X E0500*
ME 1800	185000	11000	6500	1316	712	274	300	12	DN200	300	4 X E0500*

psi	29	43	57	71	85	100	114	128	142	156	171	185	199	213	228
bar	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
factor	0.36	0.50	0.63	0.75	0.88	1.00	1.13	1.25	1.38	1.50	1.63	1.75	1.88	2.00	2.13

Compressed Air Filter

The art of nano technology
MP PureAir series



Nowadays, compressed air is necessary in the industrial production process. In fact, an amount of intake air only 1 Nm³ may contain more than a hundred million of dust particles which can extremely damage your machines and equipments. Moreover, these very tiny substances can pass easily through your compressor's intake filters while it can hardly be noticed.

In addition, those particles including water or oil vapor generated during the compression process are another key factor which leads to the damage or corrosion of machines and appliances. This mean more expensive cost of production process and machinery maintenance has to be paid.

Therefore, it is important to select the proper quality air filters which suit your equipments to assure of the sufficient air delivery and appropriate filtration degree in order to increase or improve the performance of the whole mechanical system.

Features of our product

- Extended current route to decrease pressure drop
- High grade aluminum-silicon and carbon-steel cartridge
- Water and corrosion resistant surface covered with epoxy resin
- Combined inlet and outlet with screw threads and air flow indicator on the cartridge for easy installation and control
- Various compact designs to fit different pipe sizes
- Update pressure indicator for timely warning of the need to replace the components
- Level indicator to monitor the critical level of downstream pollution prevention
- Reliable automatic drainage



Do surface treatment OK No surface treatment NG

Furthermore, we adopted an advanced technology of surface treatment used in the production process of our filter housing, both internal and external components, which can assure of extended usage period.

Therefore, we offer a 10-years guarantee from the date of installation. Pictures above show the differentiation between our product and the other's without similar quality treatment.



Compressed Air Filter

P 3 micron

Prefilter suitable for the removal of solid particles down to 5 micron including liquids, emulsions and oil particles.



S 1 micron

Interception type filters suitable for solid and oil particles up to 1 micron. Maximum contents of residual oil 0.1 mg/m³.



X 0.01 micron

Oil removing filter capable to separate residual oil and extremely small particles up to 0.01 micron. Maximum contents of residual oil 0.01 mg/m³. Air passing through this filter is practically 99.99% oil free.



Z Activated Carbon

Activated carbon filter through the absorption process attracts all odours and vapours left after desoiling and keep them on the surface of the activated carbon grain molecules. Maximum contents of residual oil 0.003 mg/m³.



Accessories



Differential Pressure Gauge
MP0020-0260 (OPTION)



Internal Auto Drain
MP0020-0260 (STANDARD)



Pipe Differential Pressure Gauge
MP0330F-1800F (OPTION)



External Floating Drain
MP0140-0260 (STANDARD)

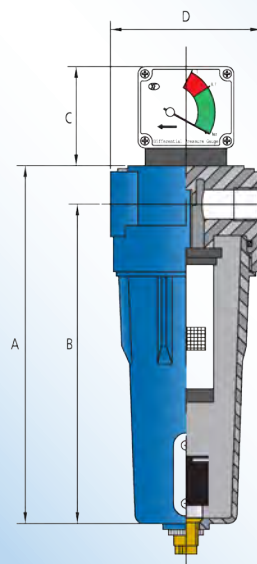


Timed Drain (OPTION)

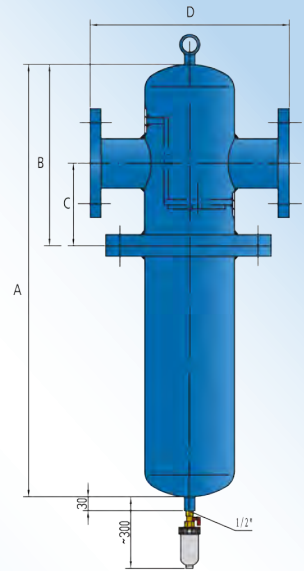


External Floating Drain
MP0330F-1800F (STANDARD)

MP0020 - 0260



MP0330F - 2000F



FILTER	FLOW-RATE			DIMENSIONS (mm)				PRESS. (bar max)	CONN. Ø	WEIGHT (+Kg)	ELEMENT (No. x Model)
	(l/min)	(m ³ /h)	(SCFM)	A	B	C	D				
MP 0020	1700	102	60	243	217	67	104	16	1/2"	1.2	1 X P0020*
MP 0040	3500	210	124	313	287	67	104	16	1"	1.5	1 X P0040*
MP 0070	7100	426	251	385	424	67	138	16	1.1/2"	3	1 X P0070*
MP 0110	10600	636	374	585	624	67	138	16	1.1/2"	3.6	1 X P0110*
MP 0140	13800	828	487	685	639	67	148	16	2"	9.5	1 X P0140*
MP 0180	17500	1050	618	825	779	67	148	16	2"	11.8	1 X P0180*
MP 0220	22100	1326	780	850	800	67	150	16	2.1/2"	12	1 X P0220*
MP 0260	26000	1560	918	1000	950	67	150	16	2.1/2"	13.6	1 X P0260*

MP 0330F	32500	1950	1148	940	350	180	300	12	DN65	51.5	1 X P0330*
MP 0460F	45800	2748	1617	1118	355	180	336	12	DN80	86	1 X P0460*
MP 0540F	54000	3240	1906	1150	380	180	500	12	DN100	119	3 X P0540*
MP 0900F	90000	5400	3177	1250	480	220	600	12	DN125	148	5 X P0540*
MP 1300F	126000	7560	4450	1350	560	230	630	12	DN150	204	7 X P0540*
MP 2000F	197000	11820	6958	1400	580	250	780	12	DN150	317	11 X P0540*

psi	29	43	57	71	85	100	114	128	142	156	171	185	199	213	228
bar	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
factor	0.36	0.50	0.63	0.75	0.88	1.00	1.13	1.25	1.38	1.50	1.68	1.75	1.88	2.00	2.13

Compressed Air Filter

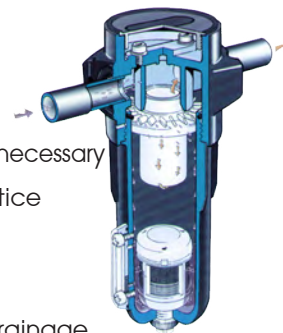
High Efficiency Water Separator MWS series



MWS High Efficient Water Separator is developed by CAD Computer Patent, its "decelerate" cohesion, accelerate "flow" breaches the features of the traditional MWS Water Separator, it is the only MWS High Efficient Water Separator which can keep higher than 99% efficiency of water separator.

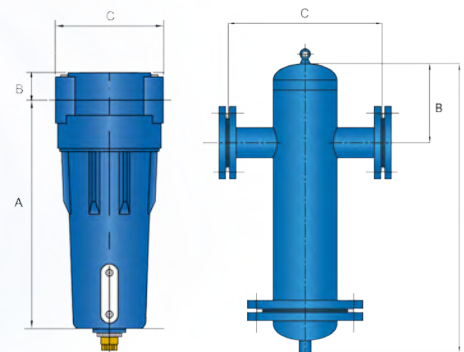
PRODUCT FEATURES

- 99% efficiency
- Cost-saving
- Easy maintenance, element is unnecessary
- Patent product proved by practice
- High flow capacity
- Low pressure differences
- Equipped with the automatic drainage



Technical standard

- Maximum working pressure: 1.0 MPa (flange type); 1.6 MPa (screw type)
- Maximum working temperature: 66°C
- Minimum working temperature: 1.5°C
- Pressure differences: 0.007 MPa
- Filter is complete with External auto drain



FILTER	FLOW-RATE	DIMENSIONS (mm)			CONN.	WEIGHT
	(M ³ /min)	A	B	C	Ø	(+Kg)
MWS 0020	1.7	243	217	67	1/2"	1.2
MWS 0040	3.5	313	287	67	1"	1.5
MWS 0070	7.1	385	424	67	1.1/2"	3
MWS 0110	10.6	585	624	67	1.1/2"	3.6
MWS 0140	13.8	685	639	67	2"	9.5
MWS 0180	17.5	825	779	67	2"	11.8
MWS 0220	22.1	850	800	67	2.1/2"	12
MWS 0260	26.0	1000	950	67	2.1/2"	13.6
MWS 0700F	42.0	243	217	67	DN65	30
MWS 0800F	50.0	313	287	67	DN80	31
MWS 1000F	60.0	385	424	67	DN100	92
MWS 1300F	80.0	585	624	67	DN125	145
MWS 1800F	120.0	685	639	67	DN150	160
MWS 3000F	180.0	825	779	67	DN200	348
MWS 4800F	288.0	850	800	67	DN250	510
MWS 7200F	432.0	1000	950	67	DN300	662

Pressure (Mpa:g)	0.1	0.3	0.5	0.7	0.9	1.1	1.3	1.5	1.6	2.0
Correction factor	0.38	0.65	0.85	1.00	1.13	1.25	1.36	1.46	1.51	1.62

Compressed Air Filter

High Pressure Filters 40 bar
MHP series



For high pressure systems (40 bar). The strong mechanical resistance makes this filter the ideal initial protection of a compressed air system to retain impurities and, for example, it is suitable as a post-filter for adsorption dryers.

STANDARD REFERENCE CONDITIONS

Ambient temperature: 25 °C

Working pressure: 40 bar

Inlet air temperature: 20 °C

Max. inlet air temperature: 100 °C

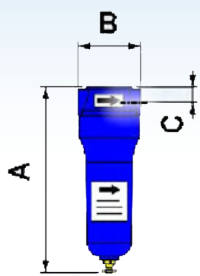
(60 °C on Z models)

Filter is complete with manual drain.



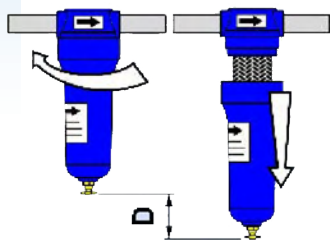
P 3 micron

Prefilter suitable for the removal of solid particles down to 5 micron including liquids, emulsions and oil particles.



S 1 micron

Interception type filters suitable for solid and oil particles up to 1 micron. Maximum contents of residual oil 0.1 mg/m³.



X 0.01 micron

Oil removing filter capable to separate residual oil and extremely small particles up to 0.01 micron. Maximum contents of residual oil 0.01 mg/m³. Air passing through this filter is practically 99.99% oil free.

Z Activated Carbon

Activated carbon filter through the absorption process attracts all odours and vapours left after desoiling and keep them on the surface of the activated carbon grain molecules. Maximum contents of residual oil 0.003 mg/m³.

FILTER	FLOW-RATE			DIMENSIONS (mm)			PRESS. (bar max)	CONN. Ø	WEIGHT (+Kg)	ELEMENT (No. x Model)
	(l/min)	(m ³ /h)	(SCFM)	A	B	C				
MHP 0008	3600	216	127	188	94	18	40	1/2"	1.5	1 X HE0008*
MHP 0016	7200	432	254	252	94	20	40	3/4"	1.8	1 X HE0016*
MHP 0025	11250	675	397	350	120	30	40	1"	2	1 X HE0025*
MHP 0036	16200	972	572	350	120	30	40	1"	2	1 X HE0036*
MHP 0060	27000	1620	953	350	120	30	40	1.1/2"	2	1 X HE0060*
MHP 0130	66667	4000	2354	705	170	52	40	2"	7.5	1 X HE0130*
MHP 0170	83333	5000	2943	705	170	52	40	2"	7.7	1 X HE0170*
MHP 0220	108333	6500	3826	755	200	68	40	2.1/2"	12.2	1 X HE0220*
MHP 0330	166667	10000	5886	1035	200	68	40	3"	15.7	1 X HE0330*
MHP 0450	225000	13500	7946	1035	200	68	40	3"	15.8	1 X HE0450*

Air Dryer

High temperature dryer with air-cooled aftercooler

MHT series

Compact unit. Accepts hot air, up to 80°C, directly from the compressor.

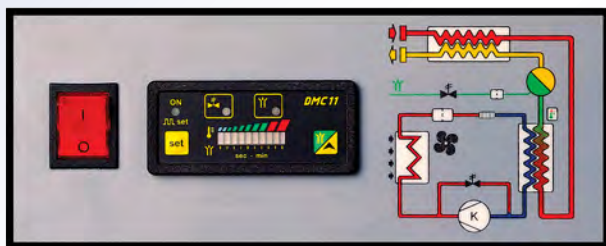


M-PLUS is keen to respond to the special needs of its customers and has developed a new range of dryers with an integral aftercooler in order to remove water from pipelines. The dryer range can be selected when the compressed air inlet temperature is greater than 50°C to 60°C, and the floor space is limited. There is no need for a separate free-standing aftercooler which saves both space and installation costs. The dryer has the same footprint as a standard unit with a small increase in height from model MHT 15. M-PLUS has continued using its design philosophy to allow quick and easy access for routine maintenance.

Electronic Control

For an optimal operation of its dryers, M-PLUS has implemented a new series of reliable and precise electronics instruments with all functions being adjustable on the machine, thus ensuring constant performance even in variable operation conditions.

Technical standard

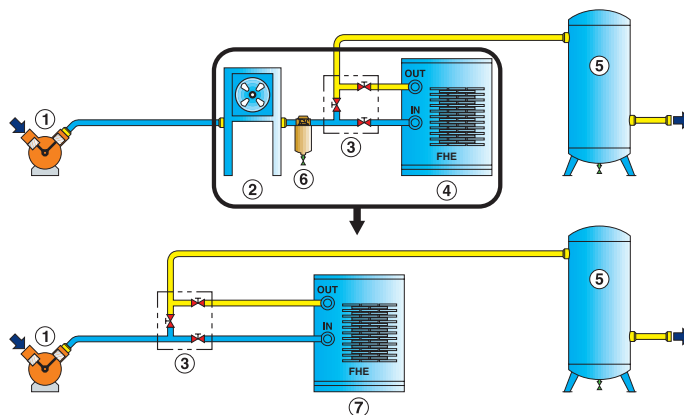


The DMC 11 device controls the whole operation of the dryer and allows the calibration of the operating parameters. The activation of the hot-gas solenoid valve is driven by means of probe located at the end of the evaporator, while a cyclic electronic timer drives the condensate drain solenoid valve at regular intervals.



Installation layout

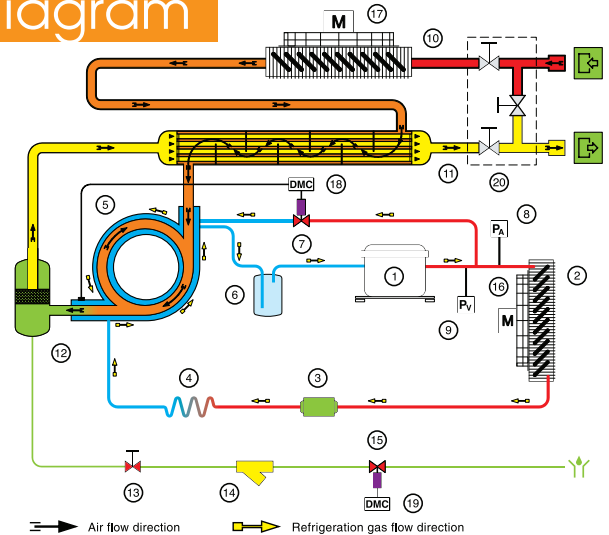
1. Air compressor
2. Aftercooler
3. By-pass
4. M-PLUS dryer
5. Air receiver
6. M-PLUS compressed air filter
7. M-PLUS dryer



Air Dryer

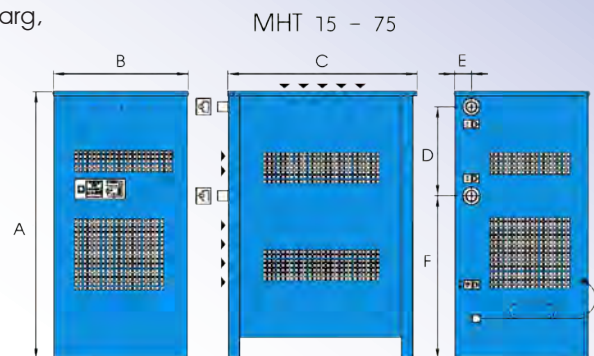
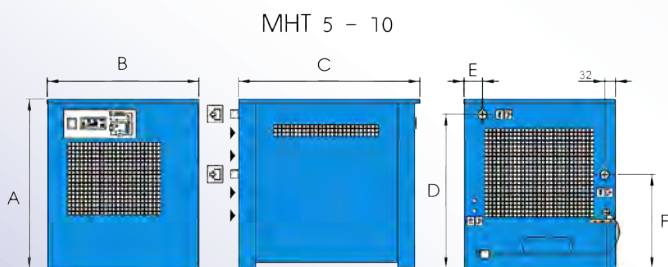
Air and Refrigerant Gas Flow Diagram

1. Refrigeration compressor
2. Condenser
3. Dehydration filter
4. Capillary tube
5. Evaporator
6. Liquid separator (MHT 30-75 only)
7. Hot gas by-pass solenoid valve
8. Refrigerant pressure switch P_A (MHT 75 only)
9. Refrigerant pressure switch P_V
10. Aftercooler unit (MHT 15-75 only)
11. Air-to-air heat exchanger
12. Condensate separator
13. Condensate drain service valve
14. Condensate strainer
15. Condensate drain solenoid valve
16. Condenser unit fan
17. Aftercooler unit fan
18. Air Dryer Controller
19. Controller probe (Dewpoint)
20. By-pass system (optional)



Technical Features

Data refer to the following nominal working condition: Inlet temperature 80°C, Inlet air pressure 7 barg,
 Ambient temperature 32°C, Pressure DewPoint 10°C
 Max. working condition: Inlet temperature 100°C, Inlet air pressure 16 barg,
 Ambient temperature 45°C



MODEL	REFRIG.	FLOW-RATE			DIMENSIONS (mm)						CONN.	POWER SUPPLY	WEIGHT
	(Type)	Nl/min	Nm³/h	SCFM	A	B	C	D	E	F	Ø	(PhV/Hz)	(+Kg)
MHT 5	R134a	565	34	20	505	450	540	455	55	280	3/4"	1/230/50	40
MHT 10	R134a	850	51	35	505	450	540	455	55	280	3/4"	1/230/50	41
MHT 15	R134a	1614	99	58	800	450	540	310	60	450	3/4"	1/230/50	41
MHT 20	R134a	2400	145	85	800	450	540	310	60	450	3/4"	1/230/50	49
MHT 30	R134a	3700	223	131	1015	540	670	420	75	550	1"	1/230/50	68
MHT 40	R134a	4300	258	152	1160	585	820	400	75	710	1.1/4"	1/230/50	88
MHT 50	R134a	5800	348	205	1160	585	820	400	75	710	1.1/2"	1/230/50	113
MHT 60	R134a	6500	391	230	1160	585	820	400	75	710	2"	1/230/50	122
MHT 75	R134a	7500	450	265	1160	585	820	400	75	710	2"	1/230/50	124

Correctio factor for operating pressure changes:

Inlet air pressure	barg	4	5	6	7	8	10	12	15
Correction	factor	0.77	0.85	0.93	1.00	1.06	1.15	1.21	1.27

Correctio factor for ambient temperature changes:

Ambient temperature	°C	25	32	35	38	40	43	45
Correction	factor	1.10	1.00	0.95	0.95	0.85	0.70	0.75

Correctio factor for inlet air temperature changes:

Inlet air temperature	°C	40	50	60	70	80	90	95	100
Correction	factor	1.45	1.35	1.20	1.10	1.00	0.80	0.70	0.65

Correctio factor for dew point changes:

dewpoint	°C	3	5	7	9	10	11	13	15
Correction	factor	0.65	0.74	0.82	0.90	1.00	1.05	1.10	1.15

Air Dryer

Refrigerate air dryer – Aluminium Modular Dryer

MRD series



MRD dryers are represented by a four leaf clover which symbolises good luck, wealth and of reaching a point of evolution.

The planning and design of this dryer range were not carried out in the conventional way but all inalienable requirements were listed and then satisfied.

The "four clover leaves" that form the MRD dryers are a combination of applying technical solutions to original designs supported by extensive laboratory testing and achieving the goal of innovative development.

Control Panel



Operation of the MRD dryer is monitored by DMC15 electronic controller which indicates the DewPoint temperature digitally, controls the condensate drain valve via a timer and the condenser fan via a probe.

Performance

MRD dryers achieve excellent performance even in instances of high ambient and high inlet temperatures. The highly efficient and ultra compact heat exchanger is able to operate effectively in ambient temperatures up to 45°C and inlet temperature of 55°C, ensuring a reduced compressed air pressure drop.

Economic

MRD dryers are sized to match standard compressor outputs. E.g. a 15 kW (20HP) air compressor with theoretical output of 2400 l/min at 7 bar matches the MRD25 rated at 2500 l/min. It is therefore unnecessary to select a larger model: air compressor-dryer combination is tested and certified by M-PLUS, within operating limits shown on technical features.

Ecology

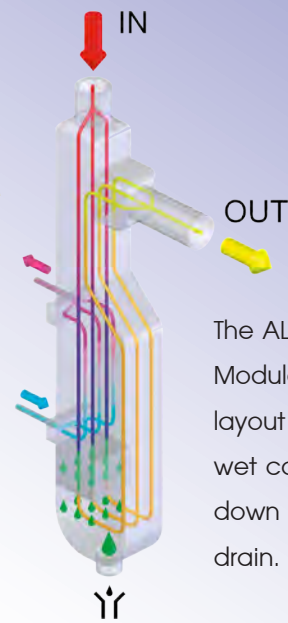
All materials used in the construction of MRD dryers have a high recycling factor and in compliance with the M-PLUS environmental policy, only environmentally friendly refrigerants are used. Components conform with 2002/95/CE "RoHS" (Restriction of Hazardous Substances) and 2002/96/CE "WEEE" (Waste Electrical and Electronic Equipment) European Directives.

Air Dryer

Functionality



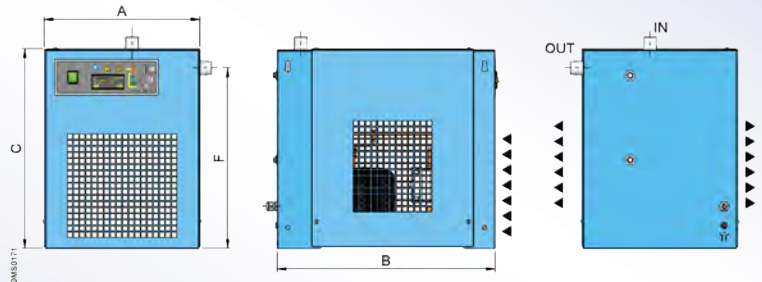
A hot gas by-pass valve allows the dryer to operate at part load and prevent the evaporator from freezing.



The ALU-DRY aluminium Module has a vertical flow layout ensuring the wet compressed air flows down to the automatic drain.

Technical Features

Data refer to the following nominal working condition:
 Inlet temperature 35°C, Inlet air pressure 7 barg, Ambient temperature 25°C, Pressure DewPoint 5°C
 Max. working condition: Inlet temperature 55°C, Inlet air pressure 14 barg, (16 barg for MRD3 to MRD18)
 Ambient temperature 45°C



MODEL	REFRIG.	FLOW-RATE			PRESSURE DROP (bar)	DIMENSIONS (mm)			CONN. Ø	POWER SUPPLY (Ph/V/Hz)	WEIGHT (+Kg)
	(Type)	Nl/min	Nm³/h	SCFM		A	B	C			
MRD 3	R134a	350	21	12	0.15	310	345	435	3/8"	1/230/50-60	21
MRD 6	R134a	600	36	21	0.04	370	515	475	1/2"	1/230/50-60	25
MRD 9	R134a	950	57	34	0.09	370	515	475	1/2"	1/230/50-60	26
MRD 12	R134a	1200	72	42	0.14	370	515	475	1/2"	1/230/50-60	28
MRD 18	R134a	1800	108	64	0.32	370	515	475	1/2"	1/230/50-60	32
MRD 25	R134a	2500	150	88	0.24	345	420	740	1"	1/230/50-60	34
MRD 32	R134a	3200	192	113	0.16	345	445	740	1.1/4"	1/230/50	39
MRD 43	R404A	4300	258	152	0.24	345	445	740	1.1/4"	1/230/50	40
MRD 52	R404A	5200	312	184	0.34	345	445	740	1.1/4"	1/230/50	41
MRD 61	R404A	6100	366	216	0.19	555	580	885	1.1/2"	1/230/50	54
MRD 75	R404A	7500	450	265	0.25	555	580	885	1.1/2"	1/230/50	56
MRD 105	R404A	10500	630	371	0.14	555	625	975	2"	1/230/50	94
MRD 130	R404A	13000	780	459	0.20	555	625	975	2"	1/230/50	96
MRD 168	R404A	16800	1008	594	0.15	665	725	1105	2.1/2"	1/230/50	144

Correction factor for operating pressure changes:												
Inlet air pressure	barg	4	5	6	7	8	10	12	14	15	16	
Correction	factor	0.77	0.86	0.93	1.00	1.05	1.14	1.21	1.27	1.30	1.33	

Correction factor for ambient temperature changes:						
Ambient temperature	°C	≤ 25	30	35	40	45
Correction	factor	1.00	0.98	0.95	0.88	0.80

Correction factor for inlet air temperature changes:							
Inlet air temperature	°C	≤ 30	35	40	45	50	55
Correction	factor	1.15	1.00	0.84	0.71	0.59	0.59

Correction factor for dew point changes:					
Dewpoint	°C	3	5	7	10
Correction	factor	0.91	1.00	1.10	1.26

Air Dryer

Refrigerate air dryer – Aluminium Cooling Technologies

MAC series



M-PLUS has increased its range of compressed air dryers with the introduction of the new MAC range (Aluminium Cooling Technologies). This high efficiently cooling module has a direct effect on reducing energy consumption and pressure drop. The main advantages are:

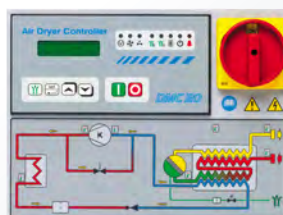
- Low perssure drop even with load variances;
- Constant pressure DewPoint with differing load conditions.

The components of the MAC range from refrigerant to materials of construction have been selected with maximum respect for the environment and their ability to be recycled.



Control Panel

Operation of the dryer is monitored by a digital thermometer in the control panel. The DMC20 electronic controller is fitted as standard to models MAC900T - 1500T and as an option to models MAC180T - 720T.



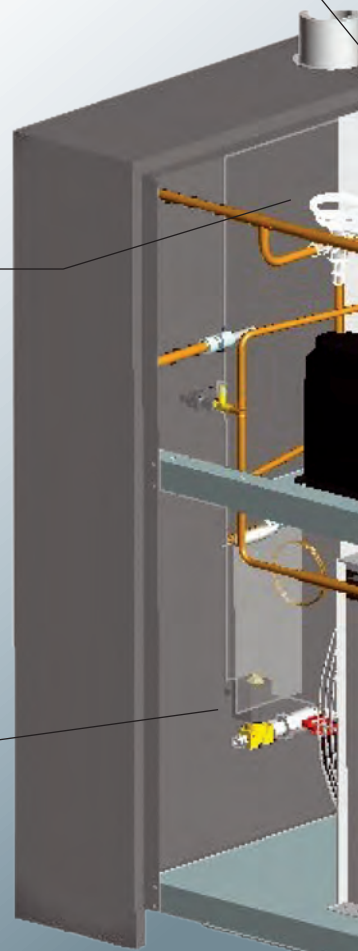
Hot Gas By-Pass Valve

The precise and accurate hot gas by-pass valve, which prevents the formation of ice inside the evaporator at any load condition, is a recent development unavailable in the past. The valve is set during final test and no further adjustments are necessary. There is only one model of valve for each refrigerant used.

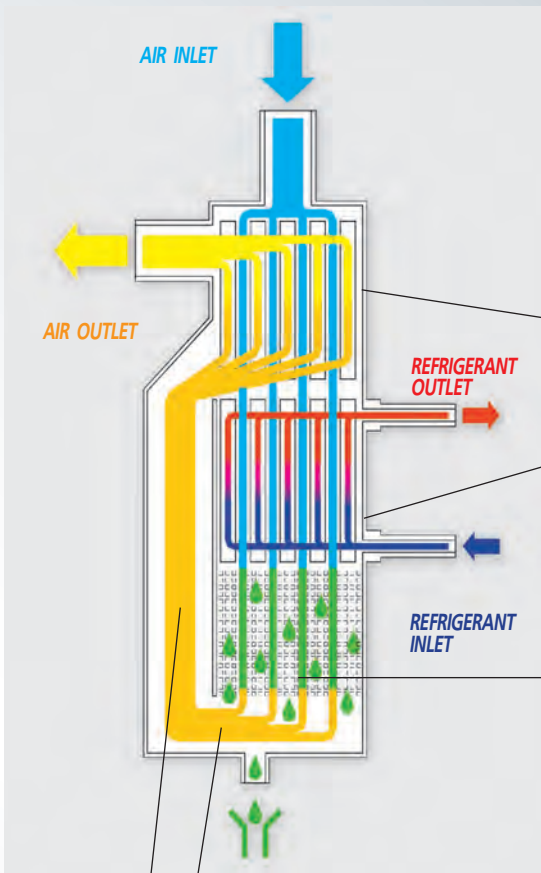


Condensate Drain

All models are fitted with a timed electronic drain. Discharge and pause times are adjustable. A zero loss drain is available as an option.



Air Dryer



Alu-Dry Module

The air-to-air and the air-to-refrigerant heat exchanger plus the demister type condensate separator are housed in a unique module.

The counter flows of compressed air in the air-to-air heat exchanger ensure maximum heat transfer.

The generous dimensions of the air-to-refrigerant heat exchanger plus the counter flow gas streams allow full and complete evaporation of the refrigerant (preventing liquid returning to the compressor).

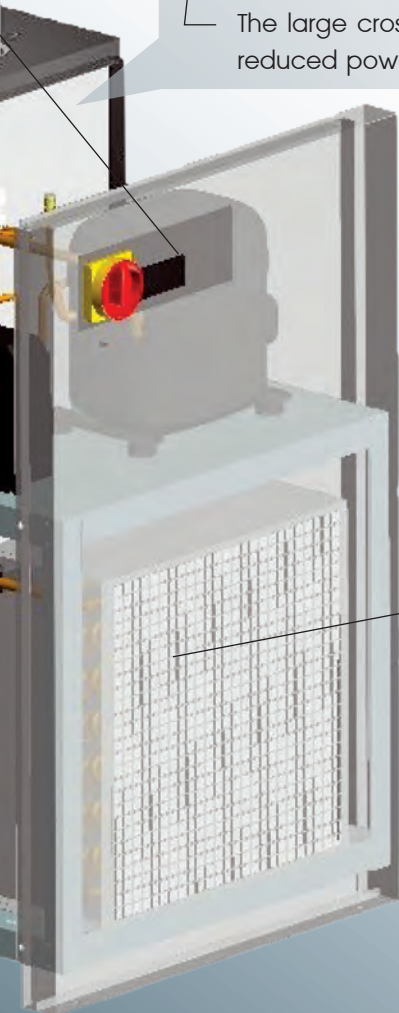
Demister Type Condensate Separator

The high efficiency condensate separator is located within 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 at high humidity in compressed inlet air

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



It is mandatory to install a filter (with filtration grade at least 5 micron) on the dryer inlet side to prevent that rust, scale or other pollutants could clog the Alu-Dry Module and the condensate drain.



Condenser

Generous sizing of the condenser ensures maximum performance of the refrigerant circuit and the ability to operate with changes in ambient conditions. Access to the condenser for cleaning and maintenance is straightforward.

Air Dryer



Technical Features

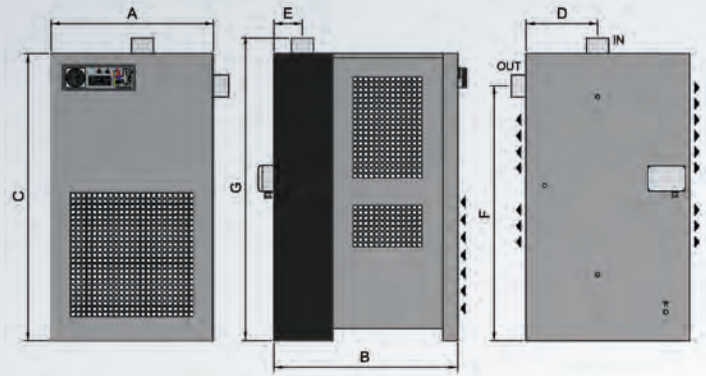
Data refer to the following nominal working condition:

Inlet temperature 42°C, Inlet air pressure 7 barg,
Ambient temperature 35°C, Pressure DewPoint 3°C
(-22°C atmospheric pressure DewPoint).

Max. working condition: Inlet temperature 70°C,
Inlet air pressure 14 barg, Ambient temperature 45°C

Upon request water-cooled version from model

MAC 180T included (Max. water temperature 30°C).



MODEL	REFRIG. (Type)	FLOW-RATE			PRESSURE DROP (bar)	DIMENSIONS (mm)							CONN. Ø	POWER SUPPLY (Ph/V/Hz)	WEIGHT (+Kg)
		Nl/min	Nm³/h	SCFM		A	B	C	D	E	F	G			
MAC 8T	R134A	850	51	30	0.04	345	420	740	158	56	700	770	1/2"	1/230-240/50	31
MAC 12T	R134A	1200	72	42	0.06	345	420	740	158	56	700	770	1/2"	1/230-240/50	32
MAC 18T	R134A	1800	108	64	0.07	485	455	826	130	69	745	825	1"	1/230-240/50	39
MAC 23T	R134A	2500	150	88	0.10	485	455	826	130	69	745	825	1"	1/230-240/50	41
MAC 30T	R404A	3400	204	120	0.10	485	455	826	130	69	745	825	1.1/4"	1/230-240/50	46
MAC 40T	R404A	4100	246	145	0.19	485	455	826	130	69	745	825	1.1/4"	1/230-240/50	53
MAC 55T	R404A	6100	366	215	0.13	555	580	885	135	85	800	940	1.1/2"	1/230-240/50	55
MAC 60T	R404A	6800	408	240	0.16	555	580	885	135	85	800	940	1.1/2"	1/230-240/50	63
MAC 80T	R404A	9000	540	318	0.08	555	625	975	245	100	865	1035	2"	1/230-240/50	103
MAC 100T	R404A	10800	648	382	0.13	555	625	975	245	100	865	1035	2"	1/230-240/50	107
MAC 120T	R404A	12500	750	441	0.08	665	725	1105	375	190	930	1155	2.1/2"	1/230-240/50	114
MAC 140T	R404A	14500	870	512	0.11	665	725	1105	375	190	930	1155	2.1/2"	1/230-240/50	116
MAC 180T	R404A	18000	1080	636	0.12	785	950	1410	500	220	1155	1490	DN80-PN16	3/400-415/50	232
MAC 210T	R404A	21000	1260	742	0.18	785	950	1410	500	220	1155	1490	DN80-PN16	3/400-415/50	242
MAC 250T	R404A	28000	1680	990	0.10	785	950	1410	500	220	1155	1490	DN80-PN16	3/400-415/50	267
MAC 300T	R404A	34000	2040	1202	0.17	785	950	1410	500	220	1155	1490	DN80-PN16	3/400-415/50	277
MAC 360T	R404A	39000	2340	1378	0.18	785	1150	1410	500	270	1155	1485	DN80-PN16	3/400-415/50	302
MAC 400T	R404A	42000	2520	1484	0.19	1005	1535	1760	N.A.	N.A.	N.A.	1840	DN100-PN16	3/400-415/50	530
MAC 500T	R404A	52000	3120	1837	0.11	1005	1535	1760	N.A.	N.A.	N.A.	1840	DN100-PN16	3/400-415/50	580
MAC 600T	R404A	63000	3780	2226	0.19	1005	1535	1760	N.A.	N.A.	N.A.	1840	DN100-PN16	3/400-415/50	590
MAC 720T	R404A	78000	4680	2755	0.18	1005	1535	1760	N.A.	N.A.	N.A.	1840	DN125-PN16	3/400-415/50	700
MAC 900T	R404A	90000	5400	3178	0.20	1005	1855	1785	N.A.	N.A.	N.A.	1840	DN150-PN16	3/400-415/50	840
MAC 1100T	R404A	110400	6624	3900	0.26	1005	1900	1785	N.A.	N.A.	N.A.	1840	DN150-PN16	3/400-415/50	1010
MAC 1200T	R404A	120000	7200	4238	0.20	1005	2065	1785	N.A.	N.A.	N.A.	1840	DN150-PN16	3/400-415/50	1020
MAC 1500T	R404A	147200	8832	5200	0.26	1005	2735	1785	N.A.	N.A.	N.A.	1840	DN200-PN16	3/400-415/50	1350

Correction factor for operating pressure changes:

Inlet air pressure	barg	4	5	6	7	8	10	12	14
Correction	factor	0.77	0.86	0.93	1.00	1.05	1.14	1.21	1.30

Correction factor for ambient temperature changes:

Ambient temperature	°C	25	32	35	38	40	43	45
Correction	factor	1.09	1.03	1.00	0.95	0.91	0.85	0.81

Correction factor for inlet air temperature changes:

Inlet air temperature	°C	30	38	42	45	50	55	60	65	70
Correction	factor	1.38	1.11	1.00	0.92	0.80	0.70	0.61	0.53	0.46

Correction factor for dew point changes:

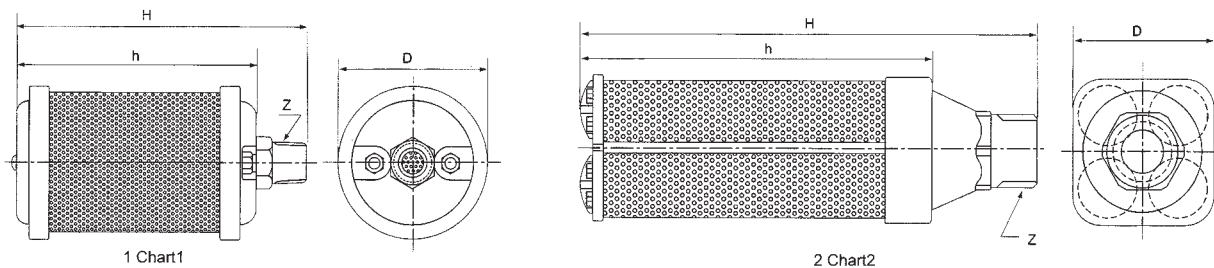
Dewpoint	°C	3	5	7	10
Correction	factor	1.00	1.09	1.19	1.37

Muffler / Silencer



Produced as a kind of unique air exhaust muffler after we researching correlative productions of Allied witan in U.S. Material primary of glass-cotton and the others from U.S. have the same function as the imported ones by reducing noise at heats by 30dB. By-pass safe valve turns on above 2.0 kgf/cm² to point out replacement. Suitable for absorbent dryer whose operation pressure is 1.0 MPa.

Technical & Dimensions



Type	Connections Size	H	h	D	Chart
MF-05	1/2"	159	125	80	Chart 1
MF-07	3/4"	180	156	87	
MF-10	1"	218	183	99	
MF-12	1 1/4"	218	183	99	
MF-15	1 1/2"	340	297	133	
MF-20	2"	470	432	133	
MF-30	3"	588	467	173X173	Chart 2
MF-60	6"	790	619	275X275	

Activated Alumina



Physical Character

White sphere, odorless, tasteless, non-toxic, insoluble in water and alcohol, regular in particle size, smooth at surface, with high mechanical strength and strong absorption of moisture, not expanding and cracking after absorbing water, original shape kept.

Application Field

As an effective concentrated drier for trace moisture, its drying capability could reach to dew-point below -70 under certain operating and recovering conditions. Widely used for drying in electronic, textile and oxidizing industry, also as adsorbent in air-grading industry (Dew point below -55). It's especially suitable for atmospheric temperature recovering equipment. Also could be used as a de-fluorinating agent of drinking water, a de-acidifying-regenerator of transformer oil, and as a dryer, purifying agent, catalyst and carrier in chemical fertilizer, petrochemical industries.

Activated Alumina

Technique Specification

Indicator	Measure unit	Value	Value	Value
Diameter	mm	3-5	4-6	5-8
Surface Area	$\geq m^2/g$	300	300	300
Total Pore Volume	$\geq cm^3/g$	0.38	0.38	0.38
Packed Bulk Density	$\geq g/ml$	0.70±0.02	0.70±0.02	0.70±0.02
Crush Strength	$\geq N$	120	140	180
Abrasion Loss	wt%	0.1	0.1	0.1
Water Adsorption	$\geq wt\%$	170	170	170
Chemical Content				
Al ₂ O ₃	$\geq \%$	93	93	93
SiO ₂	$\leq \%$	0.1	0.1	0.1
Fe ₂ O ₃	$\leq \%$	0.04	0.04	0.04
Na ₂ O	$\leq \%$	0.45	0.45	0.45

Regeneration

Appropriate temperature for regeneration: 120~240°C

The lowest dew point is 70°C, and its regeneration temperature is relative low.

Regeneration: in the air or inert gas, keep the temperature between 120~240°C.

However, exact regenerated temperature should depend on the actual regeneration time and the saturation degree of activated alumina.

In other words, the more saturation degree the alumina is, the higher the regeneration temperature will be. The less the regeneration time is, the higher the regeneration temperature. But the temperature should be within 120~240°C. But please be noted, activated alumina's usage rate and absorption ability will be decreased after regeneration. (However, molecular sieve won't)

Storage

Activated Alumina should be stored at room temperature, in which the relative humidity is not exceed 90%, and be not exposed in air, and prevented against water, acids and alkalies.

Molecular Sieve



General Introduction

Molecular Sieve is a material containing tiny pores of precise and uniform size and shape that is used as an adsorbent for gases and liquids. Molecules small enough to pass through the pores are adsorbed while larger molecules are not. Molecular Sieve is used to selectively adsorb different substances and separate different kinds of liquids or gas; so molecular sieve is a kind of upgrade desiccant made up of aluminosilicate.

Physical Description

Formula: $\text{Na}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot 2.45\text{SiO}_2 \cdot 6.0\text{H}_2\text{O}$

Description: Molecular sieve type 13X APG, the sodium form of the Type X crystal structure, is an alkali metal aluminosilicate.

Molecular Sieve

Application Field

Used commercially for general gas drying;

Air plant feed purification (simultaneous removal of H_2O and CO_2);

Liquid hydrocarbon and natural gas sweetening (H_2S and mercaptan removal);

13X APG molecular sieve can adsorb both the moisture and polymerization by-products such as acetaldehyde and ethylene glycol.

Technique Specification

Indicator	Measure unit	Value	
Diameter	mm	1.6-2.5	3-5
Static Water Adsorption	\geq mg/g	270	270
CO_2 Adsorption	\geq mg/g	180	180
Packed Bulk Density	g/ml	0.67 ± 0.02	0.66 ± 0.02
Crush Strength	\geq N	30	80
Wear Rate	\leq wt%	0.10	0.10
Package Moisture	\leq wt%	1.0	1.0

Storage

It should be stored at room temperature, in which the relative humidity is not exceed 90%, and be not exposed in air, and prevented against water, acids and alkalies.



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