



mikropor

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COMPANY INTRODUCTION



Mikropor began its journey in 1987 with a passion to create “Tomorrow’s Technology” and has become one of the leading manufacturers of atmospheric air filtration solutions and compressed air treatment systems for a variety of industries.

By closely following the latest developments in technology, Mikropor’s “Best in Class” products and solutions are appreciated by customers in more than 100 countries.

The company’s sustainable growth has been provided by its passion for innovation and commitment to quality, as well as its dedication to technology. Mikropor is an environmentally conscious company that values people, while developing products that extend the needs and expectations of customers.

With this mission, Mikropor continues to become one of the most recognized brands in the world by expanding its global penetration in the field of technological filtration and contributes to a healthier planet.

02

FILTRATION AND SEPARATION

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FILTRATION AND
SEPARATION

Air Filters for Air Compressors

Mikropor Air Filters are the first line of defence for any air compressor and have a significant impact on the service life of the compressor, lubricant, air/oil separators and oil filters.

Mikropor offers the highest efficiency air intake filters in the market, outperforming the competition and delivering more value to customers.

Micro-Glass and Mini-Pleat System in Air Filters

Our Micro-Glass Mini-Pleated Air Filters reach a 99.99% efficiency faster than cellulose air filters and provide better protection by allowing fewer contaminants to pass through the media.

Mikropor Nano Media holds up to five times more contaminants than conventional cellulose air filters, making them ideal for extended maintenance periods.



The Mikropor Mini-Pleat system guarantees equal space between each filter pleat and maintains "V" pleated geometry throughout the service life of the filter. As a result, 100% of the surface area performs equally and delivers the expected protection, while minimizing pressure drops.



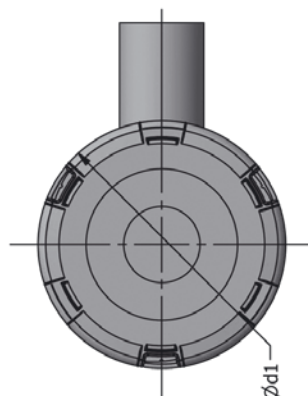
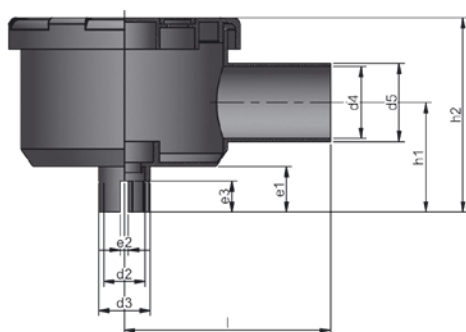
► MIFH SERIES MIKROLINE AIR INTAKE FILTERS

FILTRATION AND SEPARATION ◀

Mikropor's air intake elements are designed for the removal of dust or particulate in the air intake systems of compressors, machines, pumps, blowers, etc. Based on the density of the dust load, Mikropor offers two series with different sizes and capacities: Mikroline and Makroline.

Applications

Mikroline Air Intake Filters are well suited for applications with low dust loads such as power generators, piston compressors, as well as air cleaner ventilation of gear units and the filtration of liquid tanks.



General Working Conditions

Type	Overall Design	Volumetric Flow Range	Continuous Operating Temperature	Short Time Maximum Operating Temperature
Mikroline Air Intake Filters	Highly Reliable Plastic Air Cleaner Housing with High Quality element	1 m ³ /min to 4 m ³ /min	-30°C to +100°C	+120°C

Dimensions

Model	d1	d2	d3	d4	d5	e1	e2	e3	e4	h1	h2	l	Nominal Flow Rate (m ³ /min)	Compressor Connection Type
MIFH-0120	112	20	25	35	38	22	4	15	-	53	94	100	1	Internal Tightened
MIFH-0130	112	30	35	35	38	22	4	15	-	53	94	100	1	Internal Tightened
MIFH-0140	112	40	45	35	38	22	4	15	-	53	94	100	1	Internal Tightened
MIFH-0240	140	40	45	35	38	22	4	15	-	67	114	120	2	Internal Tightened
MIFH-0248	140	48	53	35	38	22	4	15	-	67	114	120	2	Internal Tightened
MIFH-0252	140	52	57	35	38	22	4	15	-	67	114	120	2	Internal Tightened
MIFH-0260	140	60	65	35	38	22	4	15	-	67	114	120	2	Internal Tightened
MIFH-0271	140	71	76	35	38	22	4	15	-	67	114	120	2	Internal Tightened
MIFH-0440	181	40	45	58	60	22	4	15	-	102	164	154.5	4	Internal Tightened
MIFH-0452	181	52	57	58	60	22	4	15	-	102	164	154.5	4	Internal Tightened
MIFH-0460	181	60	65	58	60	22	4	15	-	102	164	154.5	4	Internal Tightened
MIFH-0462	181	62	67	58	60	22	4	15	-	102	164	154.5	4	Internal Tightened
MIFH-0468	181	68	73	58	60	22	4	15	-	102	164	154.5	4	Internal Tightened
MIFH-0471	181	71	76	58	60	22	4	15	-	102	164	154.5	4	Internal Tightened
MIFH-0475	181	75	78	58	60	22	4	15	-	102	164	154.5	4	Internal Tightened
MIFH-0478	181	78	83	58	60	22	4	15	-	102	164	154.5	4	Internal Tightened

Design

Mikropor Makroline Air Intake Filters are designed to provide maximum performance for customers with extremely high dust capacity and low pressure drop air intake filter demands. Makroline filters are also suitable for use in higher temperature environments.

Applications

Mikropor Makroline Air Intake Filters are designed for medium and heavy dust load conditions for applications such as Air Compressors, Construction Machines, Agricultural Machines, Harvesting Machines, etc.

Advantages

The advantages of Makroline Air Intake Filters are:

- Operational reliability,
- Long service life thanks to its highly efficient and reliable filter elements,
- Low pressure drop,
- Impact resistant corrosion free housing polypropylene,
- Excellent price/performance ratio.

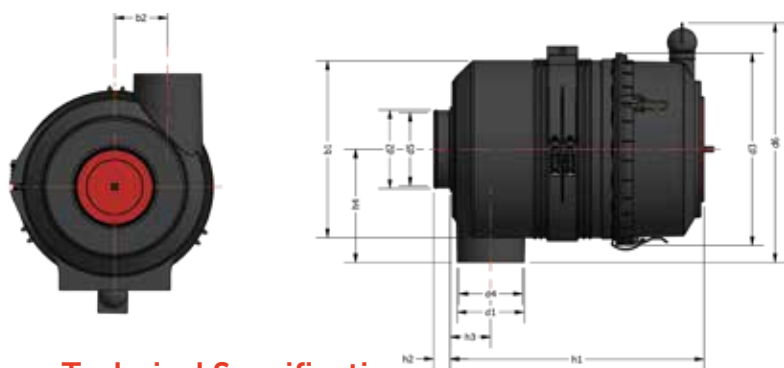
Mikropor Makroline Air Intake Filters' user friendly and flexible bracket system provides the ability for easy installation. The brackets can be turned in various positions, providing numerous fitting possibilities. Mikropor's versatile production offers these brackets in different sizes.



General Working Conditions for Makroline Air Intake Filters

Type	Overall Design	Volumetric Flow Range (m ³ /min)	Continuous Operating Temperature	Short Time Maximum Operating Temperature
Makroline Air Intake Filters	Highly Reliable Plastic Air Cleaner Housing with High Quality Element Center Tube in Housing Radial Seal	3 m ³ /min to 28 m ³ /min	-30°C to +80°C	+100°C

1) Air Intake Filter Models with Single Inlet



Technical Specifications

Model	b1	b2	d1	d2	d3	d4	d5	d6	h1	h2	h3	h4	Nominal Flow Rate (m ³ /min)	Compressor Connection Type
MAFH-0430	164	48	55	30	185	52	23	245	263	27	43	103	1-3	External Clamped
MAFH-0440	164	48	55	40	185	52	33	245	263	27	43	103	1-3	External Clamped
MAFH-0450	164	48	55	50	185	52	43	245	263	27	43	103	1-3	External Clamped
MAFH-05040	179	50	62	40	200	58	34	260	330	27	47	112	2-5	External Clamped
MAFH-05050	179	50	62	50	200	58	44	260	330	27	47	112	2-5	External Clamped
MAFH-05060	179	50	62	60	200	58	54	260	330	27	47	112	2-5	External Clamped
MAFH-05070	179	50	62	70	200	58	63	260	330	27	47	112	2-5	External Clamped
MAFH-0576	179	50	62	76	200	58	70	260	330	27	47	112	2-5	External Clamped

Model	b1	b2	d1	d2	d3	d4	d5	d6	h1	h2	h3	h4	Nominal Flow Rate (m ³ /min)	Compressor Connection Type
MAFH-0350	142	45	52	50	160	49	47	209	292	26	56	94	3-4	External Clamped
MAFH-0360	142	45	52	60	160	49	57	209	292	26	56	94	3-4	External Clamped
MAFH-09070	230	67	82	70	251	78	63	320	388	27	55	145	4-9	External Clamped
MAFH-09090	230	67	82	90	251	78	83	320	263	27	43	103	4-9	External Clamped
MAFH-09100	230	67	82	100	251	78	93	320	263	27	43	103	4-9	External Clamped
MAFH-1270	200	53	94	70	227	89	64	293	330	27	47	112	12-14	External Clamped
MAFH-12100	200	53	94	100	227	89	94	293	330	27	47	112	12-14	External Clamped
MAFH-17100	297	86.5	110	100	323	104	93	399.5	330	27	47	112	17	External Clamped
MAFH-17110	297	86.5	110	110	323	104	103	399.5	292	26	56	94	17	External Clamped
MAFH-17130	297	86.5	110	130	323	104	123	399.5	292	26	56	94	17	External Clamped

2) Air Intake Filter Models with Double Inlet



Technical Specifications

Model	a1	b1	d1	d2	d3	d4	h1	h2	Nominal Flow Rate (m ³ /min)	Compressor Con. Type
MAFH-19100	436	322	132	100	352	424	414.5	42	19	External Clamped
MAFH-19110	436	322	132	110	352	424	414.5	42	19	External Clamped
MAFH-19130	436	322	132	130	352	424	414.5	42	19	External Clamped
MAFH-19150	436	322	132	150	352	424	414.5	42	21	External Clamped
MAFH-21100	436	322	132	100	352	424	444.5	42	21	External Clamped
MAFH-21110	436	322	132	110	352	424	444.5	42	21	External Clamped
MAFH-21130	436	322	132	130	352	424	444.5	42	23	External Clamped
MAFH-21150	436	322	132	150	352	424	444.5	42	23	External Clamped
MAFH-23100	436	322	132	100	352	424	474.5	42	23	External Clamped
MAFH-23110	436	322	132	110	352	424	474.5	42	23	External Clamped
MAFH-23130	436	322	132	130	352	424	474.5	42	25	External Clamped
MAFH-23150	436	322	132	150	352	424	474.5	42	25	External Clamped
MAFH-25100	436	322	132	100	352	424	504.5	42	25	External Clamped
MAFH-25110	436	322	132	110	352	424	504.5	42	25	External Clamped
MAFH-25130	436	322	132	130	352	424	504.5	42	27	External Clamped
MAFH-25150	436	322	132	150	352	424	504.5	42	27	External Clamped
MAFH-27100	436	322	132	100	352	424	534.5	42	27	External Clamped
MAFH-27110	436	322	132	110	352	424	534.5	42	27	External Clamped
MAFH-27130	436	322	132	130	352	424	534.5	42	29	External Clamped
MAFH-27150	436	322	132	150	352	424	534.5	42	29	External Clamped
MAFH-29100	436	322	132	100	352	424	534.5	42	29	External Clamped
MAFH-29110	436	322	132	110	352	424	534.5	42	29	External Clamped
MAFH-29130	436	322	132	130	352	424	534.5	42	29	External Clamped
MAFH-29150	436	322	132	150	352	424	534.5	42	29	External Clamped

Why Mikropor Separators?

With over 3000 Air/Oil Separator designs for compressors, Mikropor offers multiple options for the full range of air flow and performance requirements.

Mikropor Air/Oil Separators

Conventional, pleated, depth construction, spin-on and state-of-the-art "sep-n-sep" design separators allow Mikropor to cover the air/oil separation needs of the entire compressor applications.



Air Flow Rates of Mikropor Air/Oil Separators (m³/min @ 7 bar working pressure)

Dimensions

Air/Oil Separator Overall Height (mm)

		150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	
110	Conventional	1	2	2																
	3S	3	5	5																
	Sep-n-Sep®																			
135	Conventional	2	2	3	3	4	5													
	3S	4	5	6	8	8	9													
	Sep-n-Sep®																			
150	Conventional	2	2.5	3	4	5	5	6	7											
	3S	4	5	7	8	10	11	12	13											
	Sep-n-Sep®																			
170	Conventional	2	3	4	5	5	6	7	8	9	9									
	3S	4	6	8	10	11.5	13	14	16	17	19									
	Sep-n-Sep®																			
200	Conventional		3	5	5	7	7	8	9	10	11	12								
	3S		7	9	11	13	15	17	19	21	23	25								
	Sep-n-Sep®																			
220	Conventional			5	6	7	8	9	11	12	13	14	15	16						
	3S			10	13	15	17	19	22	23	26	28	30	33						
	Sep-n-Sep®																			
270	Conventional			7	8	9	10	12	13	15	16	17	19	20	22	23	24			
	3S			14	15	18	21	24	27	29	32	35	38	41	44	47	49			
	Sep-n-Sep®			21	23	27	31	36	40	44	48	52	56	61	66	70	73			
300	Conventional			8	9	10	12	13	15	17	18	20	21	23	24	26	28	29	31	
	3S			15	18	21	24	27	30	34	37	40	43	46	49	53	57			
	Sep-n-Sep®			24	28	32	37	41	46	53	57	62	66	71	76	82	88			
350	Conventional			10	12	14	16	18	20	22	24	26	28	30	32	34	36	38		
	3S			20	24	28	32	36	40	44	48	52	56	60						
	Sep-n-Sep®			32	38	44	50	56	63	69	75	81	88	94						
375	Conventional			11	13	15	17	19	21	23	25	27	29	32	33	35	37	39		
	3S			22	26	30	34	38	42	46	50	54	58							
	Sep-n-Sep®			34	40	47	54	60	66	72	79	85	91							
400	Conventional				15	17	19	21	23	25	27	29	32	34	36	38	40	42		
	3S				30	34	37	42	46	51	55	59								
	Sep-n-Sep®				47	52	59	67	73	81	88	94								
470	Conventional				20	22	25	27	30	33	35	37	41	43	45	48	51	54	56	
	3S				40	45	50	55												
	Sep-n-Sep®				63	71	79	87												
500	Conventional					24	27	30	33	36	39	42	45	48	51	54	56			
	3S					50	55	60												
	Sep-n-Sep®					82	91	100												

Conwrap Separators

Mikropor "Conwrap" Separators are standard wrapped style separators. These separators are designed for outside to inside flow and can be used with all oil injection Rotary Vane and Rotary Screw Compressors. Conwrap separators operate between 1 to 60 m³/min flow rate at 7 bar with 1 to 3 mg/m³ oil carry over.

"3S" Depth Construction Air/Oil Separators

The revolutionary Mikropor "3S" Separator is designed to fit the smaller separator housings without sacrificing operating performance. The "3S" separator has double to tripled capacity when compared to a conventional separator with the same dimensions. The "3S" separator has 1/2 - 1/3 of the volume of a conventional separator functioning in the same operating conditions. This increased capacity is achieved with specially designed progressive type, deep bed, coalescing media using an increased number of wraps.

Pleated Air/Oil Separators

Pleated separators increase the media surface area to reach higher capacities while maintaining the dimensions. Mikropor manufactures dozens of pleated separator designs.

Zero Spin-On Type Air/Oil Separators

Mikropor Spin-On Type Air/Oil Separators are manufactured as exchangeable elements. Because Spin-Ons do not require a compressor housing, they permit uncomplicated and quick replacement without dismantling the compressor. Spin-On Type Air/Oil Separators are available for 0.5 to 7 m³/min flow rates operating at 7 bar.



CONWRAP

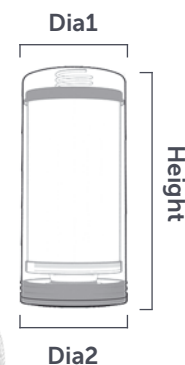


3S - SEPARATORS



PLEATED

Model	Maximum Flow Rate (m ³ /min @ 7 bar)	Dia 1 (mm)	Dia 2 (mm)	Height (mm)
Zero 10	0.5	Ø79	Ø80	84
Zero 20	1	Ø79	Ø83	137
Zero 30	2	Ø97	Ø100	214
Zero 40	1.5	Ø97	Ø100	175
Zero 50	4	Ø110	Ø111	261
Zero 60	3	Ø138	Ø141	192
Zero 70	6	Ø138	Ø141	314
Zero 80	7	Ø138	Ø141	349



▶ AIR FILTER ELEMENTS

Micro-Glass Fiber

High efficiency Micro-Glass nanofiber media (80 times finer than Cellulose Fiber) delivers higher targeted efficiencies, longer service life, wide chemical and synthetic lubricant compatibility even at extreme working temperatures.

Element 4 Levels

Mikropor offers four layers of Superior Protection—from 1 micron to 0.01 micron. Durable element construction and an efficient drain layer ensure continued performance with optimal element change periods.

Helix Tubes for Strength

Mikropor Compressed Air Filters have louvered stainless steel helix tubes providing increased strength and protection against severe pressure drops while improving performance by forcing air to pass diagonally through the element.

Synthetic Compatibility and Durable Epoxy

Mikropor Compressed Air Filters are compatible with all synthetic lubricants in the industry. Durable Epoxy securely bonds the robust end caps to the filter tubes and will not be affected by the synthetic lubricant in compressed air.

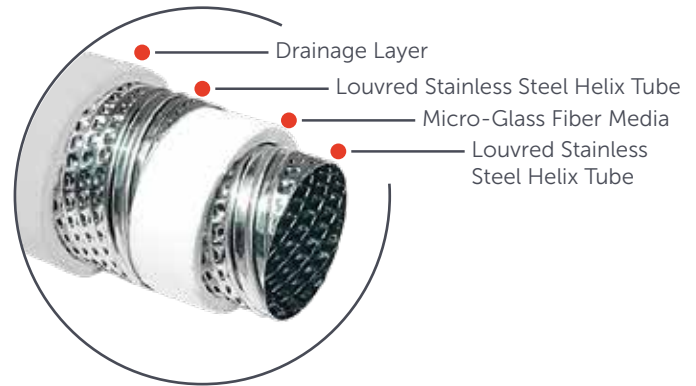
Test

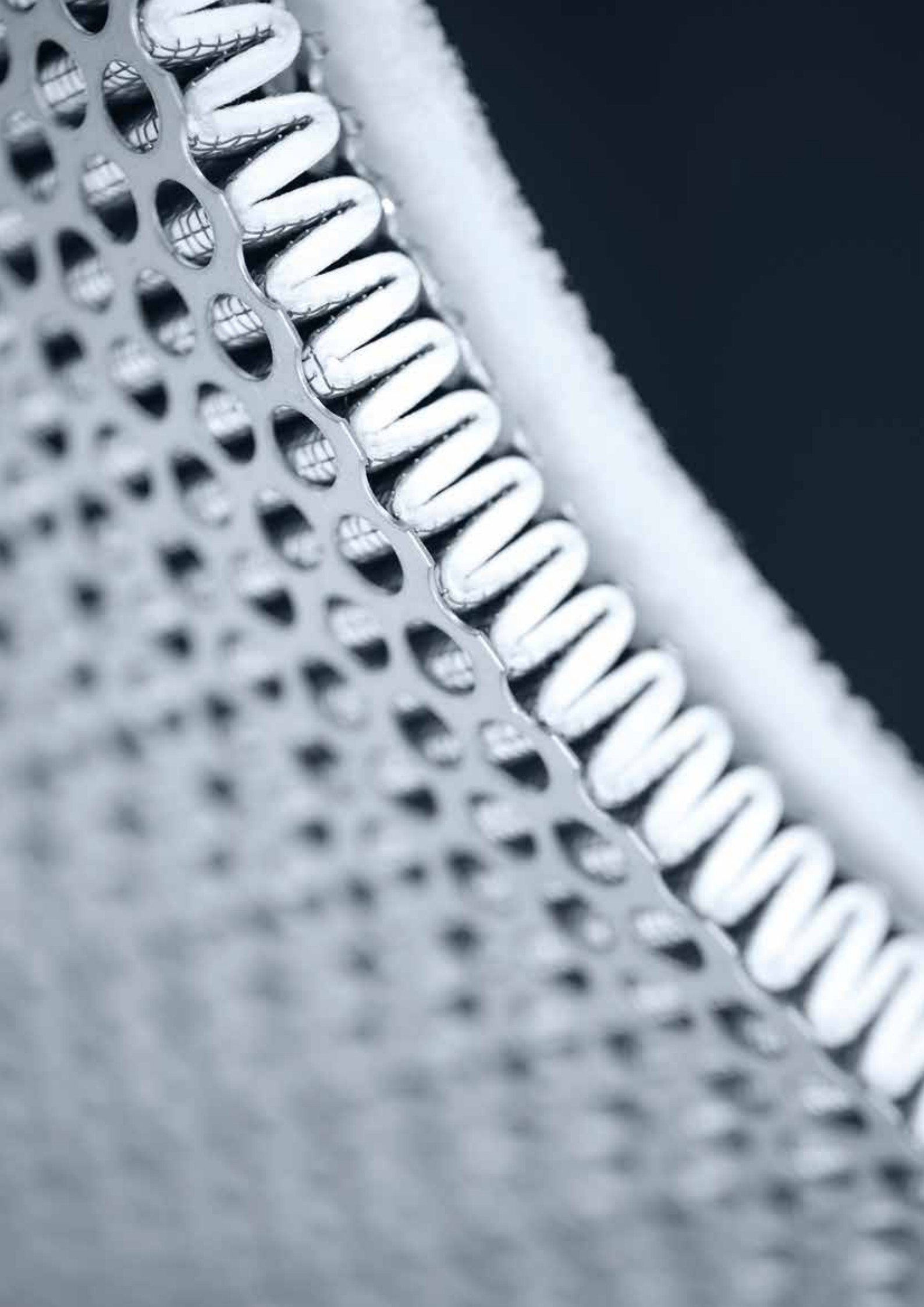
With over 30 years of experience Mikropor manufactures the best performing replacement elements in the industry. Through rigorous testing and validation processes Mikropor assures that the replacement elements perform equal to or better than the original elements. Replacement elements have been designed and tested in our state-of-the-art test laboratories.

Mikropor labs are capable of making the following tests;

- Differential pressure at given flow rates
- Particle efficiency tests
- Oil aerosols measurements
- Pressure dew point

All tests are conducted as per the relevant ISO 12500 test standards.







- ALMIG
- ATLAS COPCO
- BEA
- COMPAIR
- DELTECH
- DOMNICK HUNTER
- DOMNICK HUNTER (Evolution Range)
- FAI FILTER
- HANKISON
- HIROSS
- KAESER
- MTA
- OMI
- ULTRA FILTER
- WALKER
- ZANDER



Mikropor water separators have been designed for the removal of bulk liquid water and particulate from compressed air and gases. Unique centrifugal action removes contaminants at low-pressure drop for maximum energy saving.

Mikropor water separators are available from 1/4"-3" pipe sizes and for flows up to 2200 m³/h (1294 cfm).

Note: While highly efficient, condensate separators will not remove 100% of the oil from the air stream. Additional coalescing and particulate filters downstream may be required to remove the fine traces of oil, water and particles.

Note: Automatic drain valves are fitted as standard. All separator bodies are coated with electrostatic powder paint finish both inside and out.

Correction Factor

For maximum flow rate, multiply model flow rate show in the above table by the correction factor corresponding to the working pressure.

Operating Pressure (bar)	Psi	Correction Factor
1	15	0.5
3	44	0.71
5	73	0.87
7	100	1
9	131	1.12
11	160	1.22
13	189	1.32
15	218	1.44
16	232	1.57
20	290	1.63

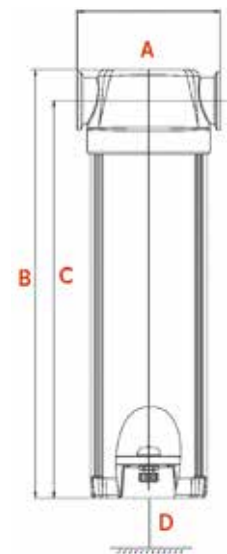


Technical Specifications

For maximum flow rate, multiply model flow rate show in the above table by the correction factor corresponding to the working pressure.

Model	Connection Size	Flow Rate		Housing Dimensions (mm)			
		(m ³ /h)	(cfm)	A	B	C	D
G25WS	1/4"	25	14	103	257.5	236	160
G100WS	1/2"	100	58	103	257.5	236	210
G200WS	3/4"	200	117	123	304	277	285
G300WS	1"	300	176	123	304	277	380
G600WS	1 1/2"	600	353	123	320	285	470
G1200WS	2"	1200	706	160	484	443	560
G2200WS	3"	2200	1294	193	546	490	610

Max. Recommended Operating Temp.	Min. Recommended Operating Temp.	Typical Pressure Loss at Rated Flow	Max. Working Pressure
80°C	1.5°C	50 mbar	20 bar



Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO7183.

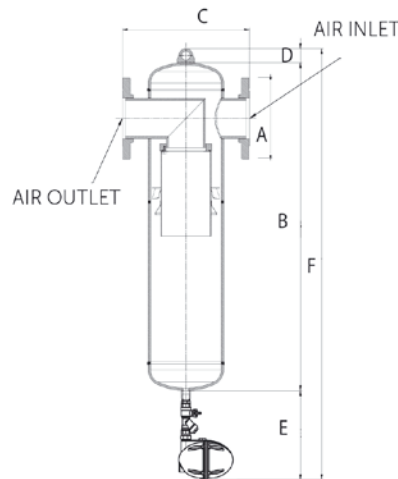
Mikropor flanged water separators have been designed for the removal of bulk liquid water and particulate from compressed air and gases. Unique centrifugal action removes contaminants at low-pressure drop for maximum energy savings. Mikropor flanged water separators are available from DN80-DN200 flange sizes and flows up to 14000 m³/h (8236 cfm) **(For larger sizes please contact our sales team).**

Note: While highly efficient, condensate separators will not remove all of the oil from the air stream. Additional coalescing and particulate filters downstream may be required to remove the fine traces of oil, water and particles.

Correction Factor

For maximum flow rates, multiply model flow rate show in the above table by the correction factor corresponding to the working pressure.

Operating Pressure (bar)	PSI	Correction Factor
1	15	0.5
3	44	0.71
5	73	0.87
7	100	1
9	131	1.12
11	160	1.22
13	189	1.32
14	200	1.38



Max. Recommended Operating Temperature	Min. Recommended Operating Temperature	Typical Pressure Loss at Rated Flow	Max. Working Pressure
80°C	1.5°C	50 mbar	14 bar

Technical Specifications

Model	Connection Size	Flow Rate		Housing Dimensions (mm)					
		(m ³ /h)	(cfm)	A	B	C	D	E	F
F-2500WS	DN80	2500	1407.5	200	934	450	75	280	1289
F-3200WS	DN100	3200	1882.3	220	964	450	75	280	1319
F-4300WS	DN100	4300	2529.4	220	982	530	75	280	1283
F-6500WS	DN150	6500	3823.5	285	1092	580	75	280	1447
F-8500WS	DN150	8500	5000	285	1091	650	75	280	1446
F-11000WS	DN200	11000	6470.5	340	1168	750	75	280	1523
F-14000WS	DN200	14000	8235.2	340	1201	800	75	280	1556

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO7183.





Mikropor Compressed Air Filters have been designed to meet all requirements of the compressed air filtration world. These air filters provide more comfortable usage for end users with an increased endurance, higher efficiency at lower pressure drop and more port size options.

Filtration

Due to our usage of deep pleating technique, the filtration area is significantly increased remarkably, which leads to a better filtration and higher dirt holding capacity. Mikropor Compressed Air Filters have been designed to remove air borne contamination in compressed air stream, delivering energy efficient operation and reliable performance.

Features

The air filters have four efficiency ratings, removing contaminants as small 0.01 micron at up to 290 psi (20 bar)- 1/4" to 3" NPT/BSP pipe sizes. A protected auto float drain (2 mm orifice) is standard for optimal and reliable removal of liquid contaminants.

These air filters have a zero-porosity aluminium and durable epoxy powder-coat finish, along with a corrosion-resistant internal coating for a long service life. Filter combinations are configured to meet specific application requirements. Filters comply with PED and perform as per related ISO 8573 standards. These filters may be equipped with differential pressure gauges for easy maintenance and energy efficiency.

Mikropor compressed air filters are always recommended with this system.

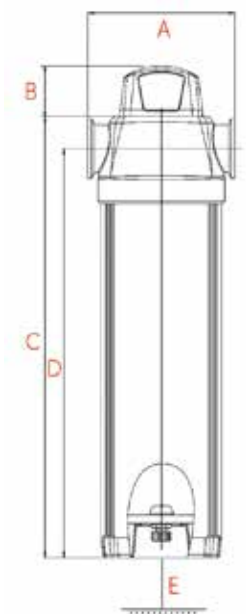
Types of Compressed Air Filters

- P** Pre-Filter / Particulate Filter (Filter/Element air flow direction is outside to inside)
- X** General Purpose Filter / Water Removal (Filter/Element air flow direction is inside to outside)
- Y** Coalescing Filter / Oil Removal (Filter/Element air flow direction is inside to outside)
- A** Activated Carbon Filter / Odor Removal (Filter/Element air flow direction is outside to inside)

Correction Factor

For maximum flow rate, multiply model flow rate show in the above table by the correction factor corresponding to the working pressure.

Operating Pressure (bar)	PSI	Correction Factor
1	15	0.5
3	44	0.71
5	73	0.87
7	100	1
9	131	1.12
11	160	1.22
13	189	1.32
15	218	1.44
16	232	1.50
18	261	1.57
20	290	1.63



Technical Specifications

Model	Connection Size			Flow Rate		Max. Working Pressure (bar)	Element Model	Housing Dimensions (mm)				
				(m ³ /h)	(cfm)			A	B	C	D	E
G20	-	1/4"	-	20	12	20	M20	75	45	193	175	100
G40	-	3/8"	-	40	24	20	M40	75	45	193	175	100
G25	1/4"	3/8"	1/2"	25	15	20	M25	102	45	219.5	197.5	125
G50	1/4"	3/8"	1/2"	50	30	20	M50	102	45	219.5	197.5	125
G100	3/8"	1/2"	-	100	58	20	M100	102	45	257.5	235.5	165
G150	1/2"	3/4"	1"	150	88	20	M150	123	45	302.5	275.5	205
G200	3/4"	1"	-	200	117	20	M200	123	45	366.5	339.5	265
G250	3/4"	1"	-	250	147	20	M250	123	45	406.5	379.5	315
G300	1"	1 1/4"	1 1/2"	300	176	20	M300	123	45	463	427.5	365
G500	1 1/4"	1 1/2"	-	500	294	20	M500	123	45	493	457.5	395
G600	1 1/4"	1 1/2"	-	600	353	20	M600	123	45	538	502.5	440
G851	1 1/4"	1 1/2"	2"	851	500	20	M851	160	45	625.5	583.8	495
G1210	2"	-	-	1210	712	20	M1210	160	45	695.5	653.8	565
G1520	2"	2 1/2"	3"	1520	930	20	M1520	194	45	730	672	445
G1820	2 1/2"	3"	-	1820	1140	20	M1820	194	45	870	813	565
G2220	3"	-	-	2220	1380	20	M2220	194	45	924	867	615
G2620	3"	-	-	2620	1541	20	M2620	194	45	1068	1011	695

Specifications	Pre Filtering	General Purpose	Oil Removal	Activated Carbon	Indicator Type
Grade	P	X	Y	A	Differential Pressure Gauge
Particle Removal (Micron)	5	1	0.01	0.01	Drain Type
Max. Oil Carryover at 21°C (mg/m ³)	5	0.5	0.01	0.003	
Max. Working Temperature (°C)	80	80	80	25	External Float Type
Initial Pressure Loss (mbar)	40	80	100	80	Zero-loss Drain
Pressure Loss for Element Change (mbar)	700	700	700	700	Manual
Element Color Mode	White	White	White	Metal SS	

Notes

- Grade A must not operate in oil saturated conditions.
- Grade A elements should be replaced periodically to suit the applications but must be changed at least every six months.
- Grade A will not remove certain gases including carbon monoxide and carbon dioxide. Please refer to works if in doubt.
- Flow rates are based on a 7 bar operating pressure, for flows at other pressures use correction factor given above.
- All filters are suitable for use with mineral and synthetic oils.
- Gauge type pressure indicators are fitted to models G20 to G2620 as standard.
- All filters are in conformity with the Pressure Equipment Directive (97/23/EC).

Ordering

The complete filter model number contains the size and grade, example - 1" general purpose filter model G250MX with replacement filter element model M250X. 250 Represent 250 m³/h capacity and X represents the general purpose element.

New addition to our G series, Mikropor GO series compressed air filters are designed for easy element replacement for "zero clearance" ability.

Features

The air filters have four efficiency ratings, removing contaminants as small as 0.01 micron at up to 290 psi (20 bar) - 1/4" to 3" NPT/BSP pipe sizes. A protected auto float drain (2 mm orifice) is standard for optimal and reliable removal of liquid contaminants.

These air filters have zero-porosity aluminium and durable epoxy powder-coat finish, along with a corrosion resistant internal coating for a long service life.

Filter combinations are configured to meet specific application requirements. Filters comply with PED and perform as per related ISO 8573 standards.

These filters may be equipped with differential pressure gauges for easy maintenance and energy efficiency. Mikropor compressed air filters are always recommended with this system.

Element Features

Mikropor offers Superior protection - from 1 micron to 0.01 micron. Durable element construction and efficient drain layer ensures continued performance with optimal element change intervals. Elements are also easy to replace with the head clips.

Mikropor Elements Have Been Designed for Easy Handling

- 1- Deep pleating also enables a lower pressure drop.
- 2- Supreme collapse resistance due to usage of fluted stainless tube, providing strength against pressure drops while improving the performance by passing air diagonally through the element.
- 3- PVC impregnated foam favors water/oil drainage.



Head Clamping

Head Clamping provides serial connection of filters without any extra piping

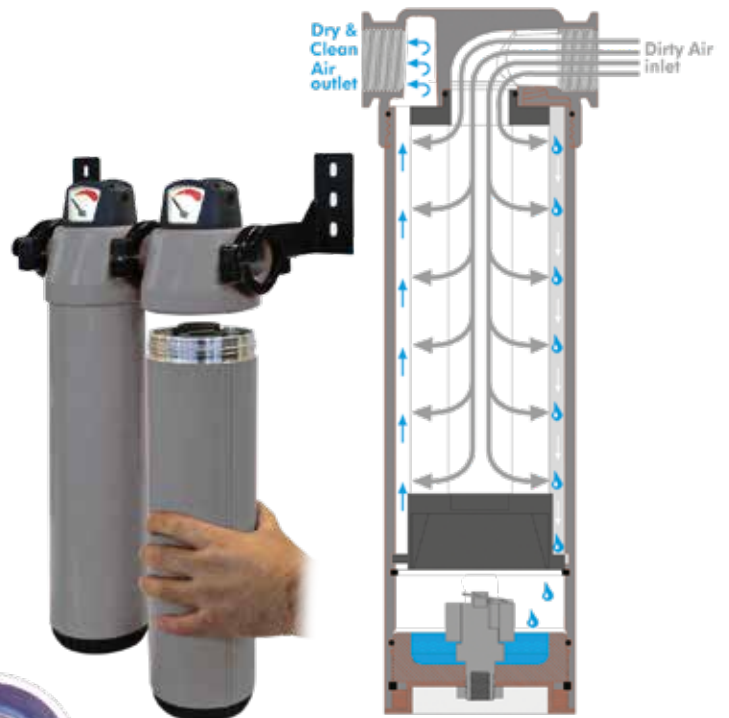
Drainage Ribs

Drainage Ribs favors the humidity flow

Correction Factor

For maximum flow rate, multiply model flow rate show in the above table by the correction factor corresponding to the working pressure.

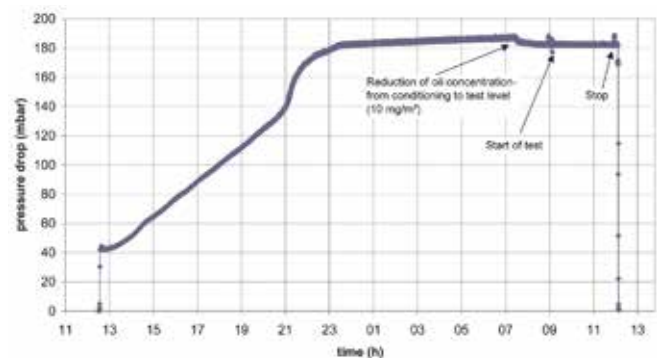
Operating Pressure (bar)	PSI	Correction Factor
1	15	0.5
3	44	0.71
5	73	0.87
7	100	1
9	131	1.12
11	160	1.22
13	189	1.32
15	218	1.44
16	232	1.50
18	261	1.57
20	290	1.63



Independent Test Report as Per ISO 12500-1

Filter element:		M50Y	
Element		002	
Standard parameters and measuring results			
Measuring parameters	unit	standard	Test
Calendar date of test			
			28./29.09.10
Inlet temperature	°C	20 ± 5	18.5 ± 0.5
Inlet pressure	bar (e)	7	7
Ambient temperature	°C	20 ± 5	17.5 ± 0.5
Inlet dew point	°C	< 10 °C	0 - 4
Main flow through the test filter	m³/h		50
Partial flow	m³/h		5,1
Time of conditioning	h		20,38
Measuring time	h		2,75
Inlet oil concentration at conditioning	mg/m³		23 ± 1
Inlet oil concentration at test	mg/m³	10 + 10%	10 ± 1
Residual oil concentration	mg/m³		0.01
Pressure drop filter element	mbar		183
Remarks			mouth of probe oil-free
Test carried out by			
Signature			

**Mikropor M50Y-2 at 50 m³/h ANR - 7 bar(e)
28.-29.09.10**



Zero Clearance

A major innovation for servicing the zero clearance design gives a quicker, easier, simpler filter change, with no need for any specialist tools.

Anodising

Anodising provides supreme corrosion resistance. Anodised surface treatment is proven to be better than other surface treatment methods such as Alchrome coating. Contact Mikropor to get Comparison Test results between competitor filters with Alchrome coating and Mikropor Filters with Anodising treatment.



With Anodising



Without Anodising

Technical Specifications

Model	Connection Size			Flow Rate		Max. Working Pressure (bar)	Element Model	Housing Dimensions (mm)			
				(m ³ /h)	(cfm)			A	B	C	D
GO20	-	1/4"	-	20	12	20	MO20	75	45	193	175
GO25	-	3/8"	-	40	24	20	MO40	75	45	193	175
GO40	1/4"	3/8"	1/2"	25	15	20	MO25	102	45	214.5	192.5
GO50	1/4"	3/8"	1/2"	50	30	20	MO50	102	45	214.5	192.5
GO100	3/8"	1/2"	-	100	58	20	MO100	102	45	252.5	230.5
GO150	1/2"	3/4"	1"	150	88	20	MO150	123	45	297.5	270.5
GO200	3/4"	1"	-	200	117	20	MO200	123	45	361.5	334.5
GO250	3/4"	1"	-	250	147	20	MO250	123	45	401.5	374.5
GO300	1"	1 1/4"	1 1/2"	300	176	20	MO300	123	45	458	422.5
GO500	1 1/4"	1 1/2"	-	500	294	20	MO500	123	45	488	452.5
GO600	1 1/4"	1 1/2"	-	600	353	20	MO600	123	45	533	497.5
GO851	1 1/4"	1 1/2"	2"	851	500	20	MO851	160	45	622.5	581
GO1210	2"	-	-	1210	712	20	MO1210	160	45	692.5	651
GO1520	2"	2 1/2"	3"	1520	930	20	MO1520	194	45	725.5	669
GO1820	2 1/2"	3"	-	1820	1140	20	MO1820	194	45	865	808
GO2220	3"	-	-	2220	1380	20	MO2220	194	45	919.5	863
GO2700	3"	-	-	2700	1541	20	MO2700	194	45	1063.5	1007

Specifications	Pre Filtering	General Purpose	Oil Removal	Activated Carbon
Grade	P	X	Y	A
Particle Removal (Micron)	5	1	0.01	0.01
Max. Oil Carryover at 21°C (mg/m ³)	5	0.5	0.01	0.003
Max. Working Temperature (°C)	80	80	80	25
Initial Pressure Loss (mbar)	40	80	100	80
Pressure Loss for Element Change (mbar)	700	700	700	700
Element Color Mode	White	White	White	Metal SS

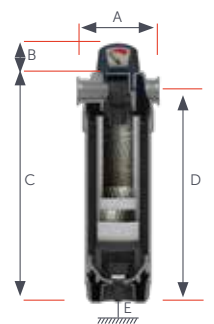
Indicator Type
Differential Pressure Gauge
Drain Type
Electro-Adjustable
External Float Type
Zero-Loss Drain
Manual

Notes

- Grade A must not operate in oil saturated conditions.
- Grade A elements should be replaced periodically to suit the applications but must be changed at least every six months.
- Grade A will not remove certain gases including carbon monoxide and carbon dioxide. Please refer to works if in doubt.
- Flow rates are based on a 7 bar operating pressure, for flows at other pressures use correction factor given above.
- All filters are suitable for use with mineral and synthetic oils.
- Gauge type pressure indicators are fitted to models GO25 to GO2700 as standard.
- All filters are in conformity with the Pressure Equipment Directive (97/23/EC).

Ordering

The complete filter model number contains the size and grade, example - 1" general purpose filter model GO250MX with replacement filter element model MO250X. 250 Represent 250 m³/h capacity and X represents the general purpose element.



GON Series

Mikropor, which constantly develops products beyond expectations and needs, has recently begun manufacturing the brand new GON Series Industrial Air Filters for compressed air users to acquire high efficiency filtration experience at the lowest pressure drops.

The new GON Series have more port sizes and offer a reliable performance by minimizing airborne contamination in Compressed Air Systems to the maximum possible extent. With the GON Series, the compressed air users will have the opportunity to replace the inner element and assemble the filter in any compressed air unit extremely easily by means of an innovative design concept which basically puts its unique **"Zero Clearance"** feature forward.

The GON Series are incredibly economical and also manufactured according to **ISO 8573** standards along with its eligibility for PED due to their sustainable and durable structure which is formed up with aluminium construction.

Features

- 35 m³/h- 1200 m³/h air flow range
- NPT/BSP pipe sizes ranging from 1/4 "to 4"
- Aluminium construction without any pores
- **Options:**
 - "Standard Drain" having 1/2" connection size or
 - "Drainless" having 1/2 connection size with adapter.
- Elegantly designed connection clips and wall apparatus
- Production in accordance with ISO8573
- Zero Clearance
- Anodising
- Lock System Indicator

GON-HC Series

In Addition to GON Series, Mikropor has also developed the GON-HC Series in order to respond to high capacity air pressure needs.

High capacity GON-HC Series Filters are designed to increase the capacity of air filters used in compressed air systems. Thus, the utilization of compressed air volume can be easily pushed up to 5400 m³/h.

Compressed air users will be able to install GON-HC Series in their systems without any need for ASME Standards eligibility requirements.



14 Models Between
35 m³/h - 1200 m³/h



6 Models Between
1550 m³/h - 5400 m³/h

Features

- 1550 m³/h- 5400 m³/h air flow range
- NPT/BSP pipe and DN Flange sizes ranging from ¼ to 4
- Aluminium construction without any pores
- **Options:**
 - "Standard Drain" having ½ connection size or
 - "Drainless" having ½ connection size with adapter.
- Elegantly designed connection clips and wall apparatus
- Production in accordance with ISO8573
- Zero Clearance
- Anodising
- Lock System Indicator

GON Series Advantages

- Low initial investment costs
- Low maintenance costs
- Compact design
- Easy to use and install
- High performance
- Third party tested



Purity Class	ISO 8573.1: 2010 Compressed Air Quality Standard							
	Solid Particulate					Water		Oil
	Max. number of Particles per m ³			Particle Size (micron)	Concentration (mg/m ³)	Vapor Pressure Dew Point	Liquid (g/m ³)	Total Oil (Aerosol, Liquid v Vapor) (mg/m ³)
	0.1-0.5 micron	0.5-1 micron	1-5 micron					
0	As specified and determined by equipment user and supplier							
1	≤20000	≤400	≤10	-	-	≤-70°C	-	≤0.01
2	≤400000	≤6000	≤100	-	-	≤-40°C	-	≤0.1
3	-	≤900000	≤1000	-	-	≤-20°C	-	≤1
4	-	-	≤10000	-	-	≤+3°C	-	≤5
5	-	-	≤100000	-	-	≤+7°C	-	-
6	-	-	-	5	5	≤+10°C	-	-
7	-	-	-	40	10	-	0.5	-
8	-	-	-	-	-	-	5	-
9	-	-	-	-	-	-	10	-

for Solid Particles	for Water	for Oil
Element Type P - Class 3	Mikropor Refrigerated Air Dryers are Class 4	Element Type P - Class 3
Element Type X - Class 2		Element Type X - Class 2
Element Type Y - Class 1	Mikropor Desiccant Air Dryers are Class 1 and 2	Element Type Y - Class 1
Element Type A - N/A		Element Type A - Class 1 (when used with Y)

Element Features

Mikropor offers Superior protection - from 1 micron to 0.01 micron. Durable element construction and efficient drain layer ensures continued performance with optimal element change intervals. Elements are also easy to replace with the plastic handles.

Mikropor Elements Have Been Designed for Easy Handling

- 1- Depth media construction offers higher coalescing performance.
- 2- Supreme collapse resistance due to usage of fluted stainless tube, providing strength against pressure drops while improving the performance by passing air diagonally through the element.
- 3- PVC impregnated foam favors water/oil drainage.



Element Advantages

- High energy efficiency due to low pressure drops
- Durability under high pressure conditions (20 bar)
- 4 different ranges of filtration efficiency which offers an opportunity to operate at various different filtration applications.
- High filtration capacity, which can target the smallest contaminants (0.01 micron and above) at 20 bar pressure.
- Minimization of valuable compressed air loss with Zero-Loss Drain option
- Third Party tested

Head Clamping

Head Clamping provides serial connection of filters without any extra piping, connection clamps are used for connecting multiple filters to each other. Wall mounting clamps are used to connect the filters to the wall easily.

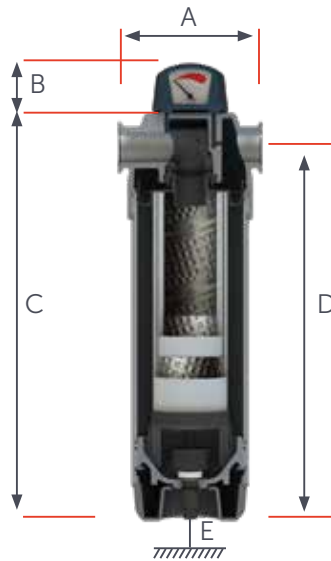
Drainage Ribs

Drainage Ribs favors the humidity flow.

Correction Factor

For maximum flow rate of the filter model, multiply model flow rate shown in the below table by the correction factor corresponding to the working pressure.

Operating Pressure (bar)	PSI	Correction Factor
3	44	0.71
5	73	0.87
7	100	1
9	131	1.12
11	160	1.22
13	189	1.32
15	218	1.44
16	232	1.50
18	261	1.57
20	290	1.63



Zero Clearance

A major innovation for servicing the zero clearance design gives a quicker, easier, simpler filter change, with no need for any special tools.

Anodising

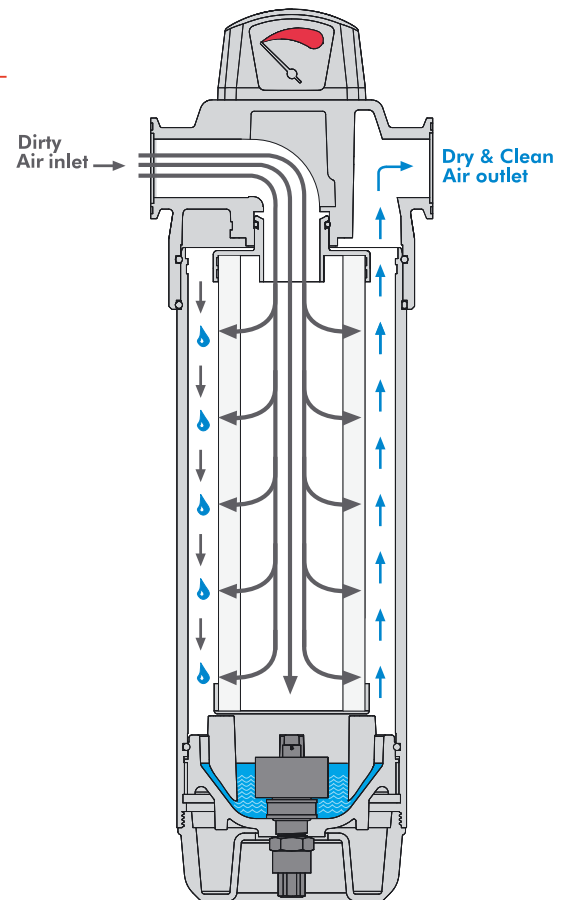
Anodising provides supreme corrosion resistance. Anodised surface treatment is proven to be better than other surface treatment methods such as Alocrome coating. Contact Mikropor to get comparison test results between competitor filters with Alocrome coating and Mikropor filters with anodising treatment.

Options

- Drains: Automatic / Manuel / Zero Loss
- Indicator or No indicator
- O-rings: Viton

Alternative Filters

- "S" Grade: Sterile Filter
- "H" Grade: Hopcalite Filter
- "T" Grade: 25 micron Coarse Dust Filter
- "HT" Grade: High Temperature Filters



The reliability of GON Series is guaranteed by the results obtained from "Third Party Tests" which is renowned worldwide in the Compressed Air Industry.

Technical Specifications

Model	Connection Size			Flow Rate		Max. Working Pressure (bar)	Element Model	Housing Dimensions (mm)				
				(m ³ /h)	(cfm)			A	B	C	D	E
GON-35	1/4"	3/8"	1/2"	35	21	20	MON35	90	36.5	214	192	19
GON-55	1/4"	3/8"	1/2"	55	33	20	MON55	90	36.5	251.5	230	19
GON-70	3/8"	1/2"	-	70	42	20	MON70	128	45	273	249.5	32
GON-100	3/8"	1/2"	-	100	60	20	MON100	128	45	302.5	279	32
GON-125	3/8"	1/2"	-	125	75	20	MON125	128	45	343	319.5	32
GON-150	3/4"	1"	-	150	90	20	MON150	140	45	369	334.5	31
GON-225	3/4"	1"	-	225	135	20	MON225	140	45	398	364.5	31
GON-300	1 1/4"	1 1/2"	-	300	180	20	MON300	140	45	474	432	31
GON-400	1 1/4"	1 1/2"	-	400	240	20	MON400	140	45	564	522	31
GON-500	1 1/4"	1 1/2"	2"	500	300	20	MON500	151	45	511	464.5	25
GON-600	1 1/2"	1 1/2"	2"	600	360	20	MON600	151	45	626	579.5	25
GON-800	1 1/4"	1 1/2"	2"	800	480	20	MON800	151	45	696	649.5	25
GON-1000	1 1/4"	1 1/2"	2"	1000	600	20	MON1000	151	45	851	804.5	25
GON-1200	1 1/4"	1 1/2"	2"	1200	720	20	MON1200	151	45	976	929.5	25
GON-HC-1550	2 1/2"	3"	-	1550	930	20	MONHC1550	240	45	707	659.5	25
GON-HC-2000	2 1/2"	3"	-	2000	1200	20	MONHC2000	240	45	862	814.5	25
GON-HC-2700	2 1/2"	3"	-	2700	1620	20	MONHC2700	240	45	987	939.5	25
GO-HC-3400	DN100	-	-	3400	2040	16	MO3400	360	45	871	810	30
GO-HC-4500	DN100	-	-	4500	2700	16	MO4500	360	45	926	865	30
GO-HC-5400	DN100	-	-	5400	3240	16	MO5400	360	45	1070	1009	30

Specifications	Pre Filtering	General Purpose	Oil Removal	Activated Carbon	Indicator Type
Grade	P	X	Y	A	Differential Pressure Gauge
Particle Removal (Micron)	5	1	0.01	0.01	Drain Type
Max. Oil Carryover at 21°C (mg/m ³)	5	0.5	0.01	0.003	
Max. Recommended Temperature (°C)	80	80	80	50	Electro-Adjustable
Initial Pressure Loss (mbar)	40	80	100	80	External Float Type
Pressure Loss for Element Change (mbar)	700	700	700	700	Zero-Loss Drain
Element Color Code	White	White	White	Metal SS	Manual

For 0.003 mg/m³ quality oil in the air, the inlet temperature should be 25°C.

Notes

- 1) Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183. In order to calculate the flow capacities at other pressures please refer to the correction factor table on page 9.
- 2) Grade A must not operate in oil saturated conditions.
- 3) Grades P, X and Y elements need to be replaced periodically to suit applications but must be changed at least every 8000 hours.
- 4) Grade A elements should be replaced periodically to suit the applications but must be changed at least every six months.
- 5) Grade A will not remove certain gases including carbon monoxide and carbon dioxide.
- 6) Flow rates are based on a 7 bar operating pressure, for flows at other pressures use correction factor given above.
- 7) All filters are suitable for use with mineral and synthetic oils.
- 8) Gauge type pressure indicators are fitted to all models as standard except Activated Carbon Filters.
- 9) All filters are in conformity with the 2014/68/EU Pressure Equipment Directive.

Ordering

The complete filter model number contains the size and grade, example – GON-150-1-X represents 150 m³/h capacity and 1" connection general purpose filter model with replacement filter element model X.



Features

- Elements are assembled with a tie rod system
- Two external float drains for maximum drainage
- Unique design for pre-separation zone
- Strong welded design
- CE and ASME tanks available
- Design for easy element change from top flange

External Float Drain

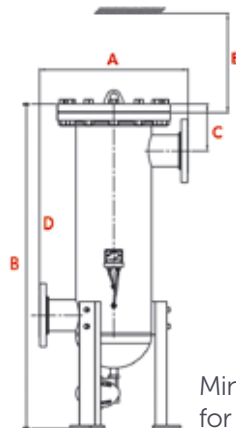
Mikropor external drain is designed to remove liquid condensation from collection points in a Compressed Air System.

Durable epoxy powder-coat finish and corrosion resistant internal anodised coating for longer service life.

Correction Factor

For maximum flow rate, multiply model flow rate show in the above table by the correction factor corresponding to the working pressure.

Operating Pressure (bar)	PSI	Correction Factor
1	15	0.5
3	44	0.71
5	73	0.87
7	100	1
9	131	1.12
11	160	1.22
13	189	1.32
14	200	1.38



Minimum clearance for element change



Minimum clearance for element change

High Performance Elements Inside



Technical Specifications

Model	Drain Port Size	Inlet/Outlet Port Size	Flow Rate		Max. Working Pressure (bar)	Element Model	Number of Elements	Housing Dimensions (mm)				
			(m ³ /h)	(cfm)				A	B	C	D	E
F2500	1/2"	DN80	2500	1470	14	M1200	2	450	1287	277	747	650
F3200	1/2"	DN100	3200	1880	14	M1200	3	450	1317	277	767	650
F4300	1/2"	DN100	4300	2530	14	M1200	4	530	1344	279	769	650
F6500	1/2"	DN150	6500	3825	14	M1200	6	580	1425	331	796	650
F8500	1/2"	DN150	8500	5000	14	M1200	8	650	1439	333	798	650
F11000	1/2"	DN200	11000	6470	14	M1200	10	750	1504	365	825	650
F14000	1/2"	DN200	14000	8235	14	M1200	14	800	1545	383	833	650
F17000	1/2"	DN250	17000	10000	14	M1200	16	850	1583	417	862	650
F21000	1/2"	DN300	21000	12350	14	M1200	17	850	1680	447	887	650
F25500	1/2"	DN350	25500	15000	14	M1200	23	850	1778	487	917	650
F30000	1/2"	DN350	30000	17650	14	M1200	28	850	1778	487	917	650

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO7183.

Specifications	Pre Filtering	General Purpose	Oil Removal	Activated Carbon	Drain Type
Grade	P	X	Y	A	Electro - Adjustable
Particle Removal (Micron)	5	1	0.01	0.01	External Float Type
Max. Oil Carryover at 21°C (mg/m ³)	5	0.5	0.01	0.003	Zero-loss Drain
Max. Working Temperature (°C)	80	80	80	50	Manual
Initial Pressure Loss (mbar)	40	80	100	80	
Pressure Loss for Element Change (mbar)	700	700	700	700	
Element Color Mode	White	White	White	Metal SS	

For 0.003mg/m³ quality oil in the air, the inlet temperature should be 25°C.

Notes

- Grade A must not operate in oil saturated conditions.
- Grade A elements should be replaced periodically to suit the applications but must be changed at least every six months.
- Grade A will not remove certain gases including carbon monoxide and carbon dioxide. Please refer to works if in doubt.
- Flow rates are based on a 7 bar operating pressure, for flows at other pressures use correction factor given above.
- All filters are suitable for use with mineral and synthetic oils.
- Other standards for flanged connections are available.
- Direction of air flow is inside to out, through filter element.

Ordering

The complete filter model number contains the size and grade, Example - pipe size NW100 oil removal filter with model filter F3200MY replacement filter element model M1200Y.



▶ ELM SERIES MIST ELIMINATOR AIR FILTERS

- Ultra low pressure drop reduces energy costs
- Positive gasket seals eliminate media bypass
- Filter change out differential 170 mbar (2.5 psi)
- True Air/Oil Separator
- Long service life

Applications Include

- Capturing oil fog, mist, or smoke from exhaust and pressure unloading vents on oil flooded compressors, vacuum pumps and blowers
- Any application requiring Low Delta P coalescing of large air volumes
- Vacuum Freeze Drying
- Vacuum Out-Gassing and Vacuum Coating
- Food Processing
- Nailers/Staplers
- Industrial Vacuum Processes
- Cement & Paper Processing

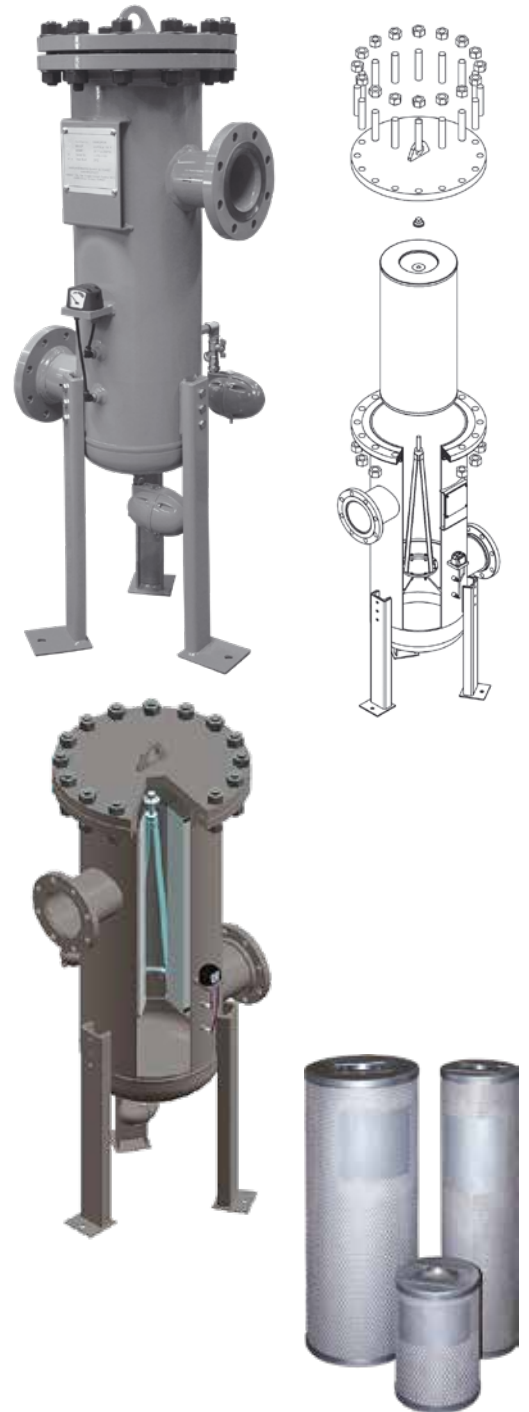
Design

Mist Eliminators are designed to meet the demand for:

- Efficient removal of oil-mist carryover from piston or oil flooded rotary compressors
- Long service life
- Protection from oil slugs or compressor Air/Oil separator failure

Features

- Very low pressure drop
- High oil removal efficiency
- Easy field changing
- Positive sealing O-rings
- Temperature (continuous) 4°C (40°F) min. 80°C (176°F) max.
- Auto Float Drain is standard
- Multiple drain style options available
- Pressure rating of 14 bar (200 psi)
- Removal of particles down to 0.01 micron including coalesced liquid water and oil, providing a maximum remaining oil aerosol content of 0.01 ppm
- Increased surface area in a given volume allows low velocity separation of ultra fine oil mist
- Elements are grounded to canister, minimizing static electricity problems

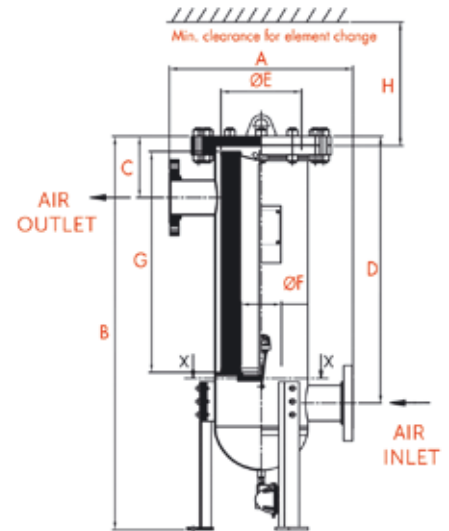
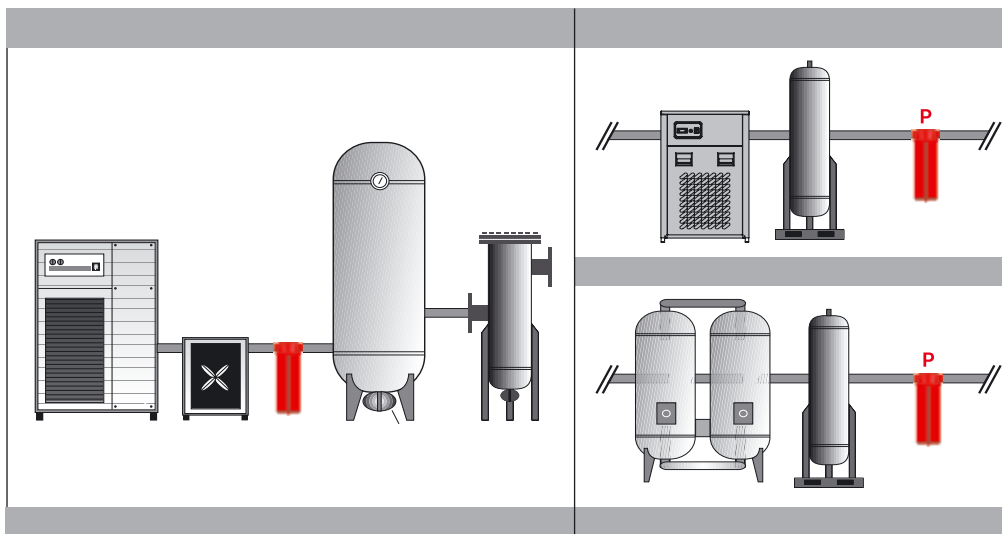


Correction Factor

For maximum flow rate, multiply model flow rate show in the above table by the correction factor corresponding to the working pressure.

Operating Pressure (bar)	PSI	Correction Factor
1	15	0.5
3	44	0.71
5	73	0.87
7	100	1
9	131	1.12
11	160	1.22
13	189	1.32
14	200	1.38

Drain Type
Electro - Adjustable
External Float Type
Zero-loss Drain
Manual



Technical Specifications

Model	Drain Port Size	Inlet/Outlet Port Size	Flow Rate		Max. Working Pressure (bar)	Housing Dimensions (mm)							
			(m³/h)	(cfm)		A	B	C	D	ØE	ØF	G	H
ELM-150	1/2"	DN50	255	150	14	500	1003	209	459	203	103	305	330
ELM-300	1/2"	DN50	510	300	14	500	1105	209	559	203	103	407	435
ELM-600	1/2"	DN50	1020	600	14	500	1461	209	916	203	103	762	790
ELM-800	1/2"	DN80	1360	800	14	500	1655	279	1084	203	103	915	950
ELM-1200	1/2"	DN80	2040	1200	14	600	1520	281	931	254	103	762	790
ELM-1600	1/2"	DN80	2720	1600	14	600	1671	281	1086	254	103	915	950
ELM-2100	1/2"	DN100	3570	2100	14	700	1575	335	953	300	129	762	790
ELM-2750	1/2"	DN100	4675	2750	14	700	1726	335	1100	300	129	915	950
ELM-4200	1/2"	DN150	7140	4200	14	800	1670	393	983	365	181	762	790
ELM-6000	1/2"	DN150	10200	6000	14	800	1925	393	1238	365	181	950	1045
ELM-8000	1/2"	DN200	13600	8000	14	850	2020	417	1277	386	233	1016	1045
ELM-10000	1/2"	DN250	17000	10000	14	1000	2118	417	1307	407	337	1016	1045
ELM-12000	1/2"	DN300	20400	12000	14	1000	2688	497	1847	437	337	1524	1550

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO7183.

Oil mist contaminates the air supply and can ruin plant equipment. Removing oil-mist, and particles will protect your plant equipment and improve your product quality. To eliminate these problems Mikropor recommends our G-ELM Mist Eliminator Air Filters.

The G-ELM series is designed to remove oil mist from compressed air by using a coalescing filter. When wet/oily compressed air enters the eliminator, the inner layer of the filter captures the oil and oil droplets that are produced. Oil droplets accumulate on the filter outer surface and, as these droplets increase in size, they fall and collect at the bottom of the filter where they are then drained from the system.

Standard Features

- Low-pressure drop
- High oil removal efficiency
- Removal of coalesced liquid water and oil down to 0.01 micron, providing a maximum remaining oil aerosol content of 0.01 ppm
- Auto Float Drain
- Long service life
- Customer-friendly changing procedure

Technical Specifications

Models	Max. Remaining Oil Content	Flow Rate (Nm ³ /h@ 7barg)	Inlet-Outlet Flange Size	Drain Connection	Lenght (mm)	Width (mm)	Height (mm)
G-100 ELM	0.01 ppm	35	1/2"	1/8"	102	86.8	257.5
G-150 ELM	0.01 ppm	45	1/2"	1/8"	123	108.5	305
G-200 ELM	0.01 ppm	50	1"	1/8"	123	108.5	369
G-250 ELM	0.01 ppm	70	1"	1/8"	123	108.5	409
G-300 ELM	0.01 ppm	85	1 1/2"	1/8"	123	108.5	463
G-500 ELM	0.01 ppm	100	1 1/2"	1/8"	123	108.5	493
G-600 ELM	0.01 ppm	130	1 1/2"	1/8"	123	108.5	538
G-851 ELM	0.01 ppm	170	1 1/2"	1/8"	160	138	625.5
G-1210 ELM	0.01 ppm	200	2"	1/8"	160	138	695.5

Max. Operating Pressure (barg)	16
Max. Working Temp. (°C)	80
Min. Operating Temp. (°C)	4





CLASS 0 ISO 8573-1

There are contaminant effects that could be contained within the compressed air such as oil, water, and particles. This causes damage to compressed air system lines, pneumatic systems and equipment. The main reason is high oil and water content in compressed air systems. The ambient air is compressed by 7 times in order to achieve the desired pressure value and it gets down into smaller volumes. That means if the pressure is higher when the air is compressed, the concentration gets higher. Therefore compressors produce almost 7 times more oil or water-containing air than atmospheric air. In addition to these contaminants, oil can also enter the compressed air system through the ambient air even if it is oil-free.

Oil is carried by the compressed air in two forms: as an aerosol that is formed by the mechanical shearing in the compressor, and also as a vapor that is formed during the oil vaporization and compressor intake air. These oil forms have to be prevented in order to increase the product quality and pneumatic equipment lifespan. The main working principle for the separation of these oil contents is about coalescing of the aerosol form by filter and separator and is about adsorption of the vapor form by desiccants.

There are some filters to remove liquid oil. However, an aerosol form of the oil can not be separated from those filters. Mikropor's patented product Carbolescer can remove both forms of the oil. Carbolescer is a combination of a mist eliminator and a media impregnated activated carbon. It has plated coalescing media, carbon layer, and wrapped particulate media. Liquid formed oil is eliminated with the coalescing method in the plated media. As oil-flooded compressed air enters the unit, oil droplets accumulate and fall through the filter media. Collected liquid oil is drained from the egg drain. With plated coalescing media 0.01-micron-sized oil contaminants can be removed. In addition to the plated media, the activated carbon layer is adsorbed the oil vapor. Oil vapor adheres physically through the active carbon media and in that way, the remaining oil content can be decreased to 0.003 ppm. Then, the layer of particulate media helps to remove particles that possible to remained. Finally, oil-free compressed air can be achieved even after the screw compressors that is "Class 0" according to ISO 8573 standard.



Models	ELM-C	G-ELM-C
Max. Remaining Oil Aerosol Content (20°C) (ppm)	0.003	0.003
Max Operating Pressure (barg)	14	16
Max. Operating Temp. (°C)		80
Min. Operating Temp. (°C)		4

Correction Factor

For maximum flow rate, multiply model flow rate shown in the below table by the correction factor corresponding to the working pressure.

Operating Pressure (bar)	Operating Pressure (psi)	Correction Factor
1	15	0.5
3	44	0.71
5	73	0.87
7	100	1
9	131	1.12
11	160	1.22
13	189	1.32
14	200	1.38



Standard Features

- Very low-pressure drops (80 mbar)
- Maximum remaining oil aerosol content 0.003 ppm
- Equal air distribution
- Long service life
- User-friendly changing procedure

Optional Feature

- Oil indicator



**OIL-FREE APPROVED
BY THIRD PARTY**

Technical Specification

Models	Max Remaining Oil Aerosol Content (@20°C)	Recommended Flow Rate (Nm ³ /h @7 barg)	Inlet-Outlet Flange Size	Length (mm)	Height (mm)
G-100 ELM-C	0.003 ppm	35	1/2"	102	302
G-150 ELM-C	0.003 ppm	45	1/2"	123	352
G-200 ELM-C	0.003 ppm	50	1"	123	412
G-250 ELM-C	0.003 ppm	70	1"	123	454
G-300 ELM-C	0.003 ppm	85	1 1/2"	123	507
G-500 ELM-C	0.003 ppm	100	1 1/2"	123	537
G-600 ELM-C	0.003 ppm	130	1 1/2"	123	583
G-850 ELM-C	0.003 ppm	170	1 1/2"	160	668
G-1210 ELM-C	0.003 ppm	200	2"	160	740
ELM-150-C	0.003 ppm	255	DN 50	500	1065
ELM-300-C	0.003 ppm	510	DN 50	500	1165
ELM-600-C	0.003 ppm	1020	DN 50	500	1523
ELM-800-C	0.003 ppm	1360	DN 80	500	1743
ELM-1200-C	0.003 ppm	2040	DN 80	600	1606
ELM-1600-C	0.003 ppm	2720	DN 80	600	1747
ELM-2100-C	0.003 ppm	3570	DN 100	700	1651
ELM-2750-C	0.003 ppm	4675	DN 100	700	1798
ELM-4200-C	0.003 ppm	7140	DN 150	800	1750
ELM-6000-C	0.003 ppm	10200	DN 150	800	1997
ELM-8000-C	0.003 ppm	13600	DN 200	850	2095
ELM-10000-C	0.003 ppm	17000	DN 250	1000	2208
ELM-12000-C	0.003 ppm	20400	DN 300	1000	2775

High Pressure & High Performance

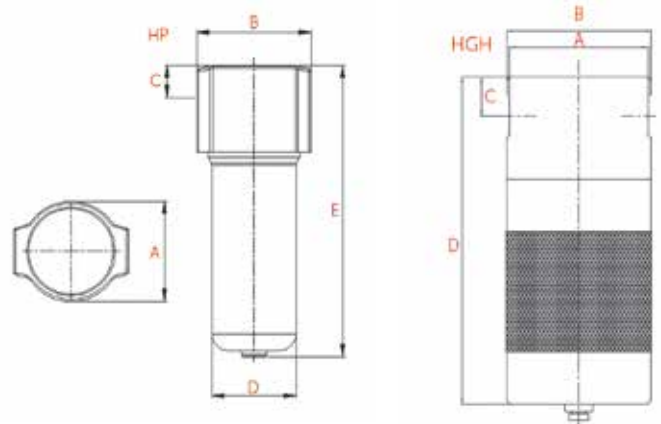


Features

Mikropor manufactures a line of High Performance Compressed Air Filters, Moisture Separators in two different ranges; 50 bar range made of Aluminium. No welding, strong and reliable design. 350 bar range made of Steel. No welding and designed for reliability at very high pressure applications.

Anodised Aluminium Design with High Performance

Mikropor High Pressure Range Compressed Air Filters are NO-weld design. These Filters are built with ample wall thickness and as a result are extremely robust. In-house high pressure test facilities assure the performance. All inner and outer surfaces of 50 bar Aluminium design Filters are Anodised, where 350 bar Carbon Steel design Filters are epoxy electro powder coated.



Technical Specifications

Model	Connection Size	Flow Rate at 50 bar		Max. Working Pressure (bar)	Element Model	Housing Dimensions (mm)				
		(m ³ /h)	(cfm)			A	B	C	D	E
HP100	1/4"	71	42	50	M25	106	119	30	88	201
HP300	1/2"	212	125	50	M50	106	119	30	88	201
HP600	3/4"	425	250	50	M100	106	119	30	88	201
HP850	1"	595	350	50	M150	123	140	39.5	103	357
HP1200	1"	850	500	50	M200	123	140	39.5	103	357
HP1600	1 1/2"	1600	940	50	M250	123	140	39.5	103	357
HP2500	2"	2500	1470	50	M2500	159	179	56	133	380
HP3000	2 1/2"	3000	1765	50	M3000	159	179	56	133	380

Model	Connection Size	Flow Rate at 350 bar		Max. Working Pressure (bar)	Element Model	Housing Dimensions (mm)			
		(m ³ /h)	(cfm)			A	B	C	D
HGH100	1/4"	102	60	350	M25	113.4	115.4	25.75	155
HGH300	1/2"	298	175	350	M50	113.4	115.4	25.75	158.5
HGH600	3/4"	595	350	350	M100	109.4	115.4	32.25	207
HGH850	1"	850	500	350	M150	133	138	37.35	250
HGH1200	1"	1190	700	350	M200	133	138	37.35	314
HGH1600	1 1/2"	2240	1317	350	M250	128	138	44.4	368
HGH2500	2"	3500	2058	350	M2500	145	158	51.5	393
HGH3000	2 1/2"	4200	2470	350	M3000	160	178	57.6	386

Specifications	Pre Filtering	General Purpose	Oil Removal	Activated Carbon	Drain Type
Grade	P	X	Y	A	HP - Manual Brass Drain
Particle Removal (Micron)	5	1	0.01	0.01	HGH - Manual Brass Drain
Max. Oil Carryover at 21°C (mg/m ³)	5	0.5	0.01	0.003	
Max. Working Temperature (°C)	80	80	80	50	
Initial Pressure Loss (mbar)	40	80	100	80	
Pressure Loss for Element Change (mbar)	700	700	700	700	
Element Color Mode	White	White	White	Metal SS	

For 0.003mg/m³ quality oil in the air, the inlet temperature should be 25°C

Notes

- Grade A must not operate in oil saturated conditions.
- Grade A elements should be replaced periodically to suit the applications but must be changed at least every six months.
- Grade A will not remove certain gases including carbon monoxide and carbon dioxide.
- Flow rates are based on 50 bar for HP and 350 bar for HGH filters.
- All filters are suitable for use with mineral and synthetic oils.
- Other standards for flanged connections are available.
- Direction of air flow is inside to out, through filter element.

Ordering

The complete filter model number contains the size and grade, example – GON-150-1-X represents 150 m³/h capacity and 1" connection general purpose filter model with replacement filter element model X.

03

COMPRESSED AIR DRYERS

COMPRESSED AIR DRYERS

MKE SERIES NON CYCLING INTEGRATED FILTRATION	42
MH SERIES HIGH TEMPERATURE	48
MCY SERIES THERMAL MASS/CYCLING INTEGRATED FILTRATION	49
MK-DS SERIES DIGITAL SCROLL INTEGRATED FILTRATION	55
MK-HP SERIES HIGH PRESSURE	59
MTD SERIES HIGH-CAPACITY TURBO DRYER	61
ISO STANDARDS	64
MMD SERIES MODULAR DESICCANT	65
MMD-P SERIES PNEUMATIC MODULAR DESICCANT	67
MMD-VP SERIES VACUUM MODULAR DESICCANT	69
MDA SERIES HEATLESS DESICCANT	74
MBP SERIES HEATED DESICCANT	75
MEHD SERIES EXTERNALLY HEATED TYPE COMPRESSED AIR DRYERS	76
MHOC SERIES HEAT OF COMPRESSION COMPRESSED AIR DRYERS	80
MRD SERIES RAILWAY DRYER	82

A close-up photograph of a metal surface, likely part of a compressed air dryer. The surface has a perforated pattern of oval-shaped holes. The word "mikropor" is printed in a bold, black, sans-serif font on the metal. Above the text, there are several vertical, elongated oval shapes, possibly representing the perforations or a specific design element. The lighting is dramatic, with strong shadows and highlights, creating a textured appearance. The background is dark and out of focus, showing some structural elements of the machine.

mikropor

COMPRESSED
AIR DRYERS

► **MKE SERIES** NON CYCLING INTEGRATED FILTRATION

COMPRESSED AIR COOLERS ◀

Mikropor is aware of the importance of high quality compressed air and guarantees to provide customers with the highest quality of air. Using clean, dry air is extremely important for all kinds of air powered applications. Moisture or contamination in the air which will come from the standard compressor outlet will cause complicated system errors. These complications will decrease productivity and may affect the production quality of final products.

Advantages

- Low pressure drop saves compressor power
- Quick start and reaction time provides additional production time
- Every dryer is specially designed with the right components to consume the lowest energy
- Highly energy efficient and environmentally friendly R513a refrigerant across all models.
- R513a refrigerant is optional.
- A state-of-the-art heat exchanger design provides the highest cost saving in the industry
- Best in class refrigerant compressors consume less energy against competition dryers
- Pressure switches control the condenser's fan motor for saving energy and letting the system operate at desired conditions
- This is not only a dryer, but an air treatment package that delivers an air quality of class 1.4.1 as per ISO 8573:2010 due to integrated filtration

Applications

Mikropor provides an entire range of products for filtration and air purification applications at a cost effective price.

Applications Include

Food production, dairies, breweries, clean conveying air, chemical plants, pure air and cleanroom technology, pharmaceutical industry, weaving machines, photo labs, paint spraying, powder coating, packaging, control and instrument air, sand and/or shot blasting, general air works, microchip production, optics, process air as well as many other markets.

The MKE Series Refrigerant Circuit and Insulation

Mikropor only uses environmentally friendly R513a refrigerant gas in the dryers. This refrigerant is suitable for both low and high temperature applications. R513a has excellent thermodynamic properties and can operate at very low pressure compared to other refrigerants. This will in turn increase the refrigerant compressor's service life. With R513a Mikropor dryers can operate at very high ambient temperatures. Mikropor engineers add extra power to the heat exchangers with excellent and extraordinary no loss insulation system. Mikropor dryers supply constant dew point at all flow ranges. This perfect insulation idea continues on the refrigeration circuit side as well. With this insulation concept and oversized condensers (Even for ultra-high ambient temperatures) Mikropor Refrigerated Air Dryers offer the highest technology with its custom solutions.



Digital Controllers

Digi-Pro digital controller is standard on MKE23-MKE3915

ESD digital controller is standard on MKE5085-MKE12500

Digi-Pro Digital Controller

Mikropor now produces a new generation of air dryers with Digi-Pro series controllers. With the Digi-Pro series controllers, air dryers have outstanding technology for both functionality and dynamism, as well as appearance. New controller design offers users the possibility of making adjustments with one finger, thus easier accessibility. The touch keys have taken the design and dynamism to a top level of technology. The multi-functional display provides an accurate digital dew point display as well as coded alarm monitoring of the refrigerant dryer.

Digital controller with embedded features,

- Digital dew point monitoring
- Energy-saving mode display
- Periodic maintenance interval display
- Status report
- Hours run meter
- Fahrenheit and Centigrade selection

ESD Digital Controller

Mikropor Refrigerated Air dryers with ESD Digital controller have a lot of economy features and alarm capabilities. Refrigeration dryers are usually the most efficient dryer solution for the compressed air applications. With the help of the highly engineered ESD, Mikropor Refrigerated Air Dryers will reduce your energy consumption. ESD helps the service technicians to monitor many useful parameters on the dryer and guides them to troubleshoot any problem very easily. ESD is extremely useful when there is no air coming into the dryer when the dryer is running. Especially during the nights, weekends and holidays many companies do not stop their dryers although they do not run compressed air. ESD saves huge amount of money by simply shutting the dryer down automatically when it is not in use.



Electrical Wires are Separated From Refrigerant Side

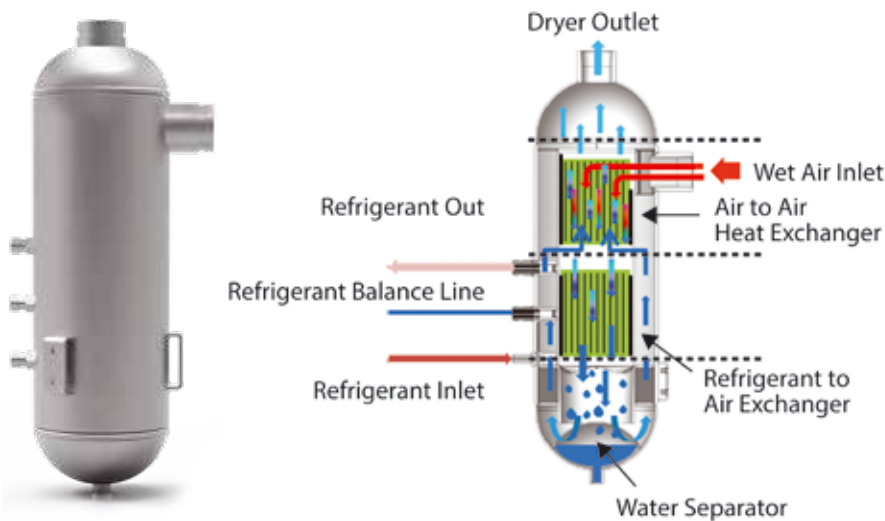
There are very few electrical wires inside the refrigerant side of the dryer. Electrical box has an external cover with access from the outside of the dryer. Therefore there is no need to open dryer panels electrical access.

Compact Design

Mikropor dryers are highly reliable, efficient and have small space demands and offer low cost ownership. Mikropor Refrigerated Air Dryers are suitable for the smallest installation spaces. Having two filters integrated into the dryer frame offers a huge advantage to the service technicians and end users. The integrated filters save labor time, piping cost and space at the facilities where the Mikropor Dryer is used. The compact size also offers flexibility and economy during their transport.

Aluminium Plate Heat Exchanger is Standard

- Very low pressure drop
- Thin aluminium plate thickness
- High heat transfer surface area
- Strong due to external thick cylindrical wall
- Water separator is optimized for best performance



Scroll Compressors

Scroll Compressors are energy efficient and strong against liquid shocks. For energy saving, scroll compressors are used for 400 m³/h and above MKE Dryers.

Easy Access

Easy access to the cooling components in seconds by the help of screw free panels and plastic handles. Easy for service and offers more working space. Service technicians save time by not having to remove fasteners.



Zero Clearance Compressed Air Filters with High Performance Elements

Compressed Air Filter kit is standard on the Mikropor Dryers. The filter with X Element (coalescing filter for water removal) is used for up to 1 micron particles and the Filter with Y Element (coalescing filter for oil removal) is used to remove oil down to 0.01 ppm. Zero clearance design helps service technicians to replace the element in minutes. Mikropor Refrigerated Air Dryers are designed by engineers who have received all of the design feedback from field engineers and service technicians. This service friendly design makes Mikropor dryers very unique in the industry. Dryer Filter kit which has two elements, two viton o-rings helps the customers to operate the dryer at its best performance until the next planned maintenance.



Grooved Couplings and Fittings

On compressed air lines, grooved couplings and fittings are commonly used in the industry. These couplings increase flexibility on connections, help the service technician to dismantle and assemble pipes easily and quickly.

Excessive Water Droplet Drains

Liquid water droplets coming from the line to the inlet of the dryer are separated by the inlet filter and drained. The automatic timer drain can be open manually. This allows the system to be depressurized at maintenance service.



Replacement Filter Element

Pressure drop is a huge concern in compressed air. In many applications high pressure drops will cause a decrease in the pressure at the point of use. Sometimes this low pressure is not enough for the machines or processes to perform correctly. In addition, dirt particles and oil in the compressed air system may block the filters quickly. It is important for the end users and service technicians to recognize if there is a problem in the system. The performance of the filters directly affects the pressure drop and system performance. Therefore, it is very important that the filter elements are changed at the filter service time. An alarm/warning indicating that the filters are changed periodically is provided by a digital controller on the Mikropor Air Dryer. When this alarm triggers, the filter must be changed to avoid loss of performance and pressure drop.



Correction Factor for MKE Series

Inlet Temperature (°C)	F1	Ambient Temperature (°C)	F2	Pressure (bar)	F3
30	1.29	20	1.05	4	0.80
35	1	25	1	6	0.94
40	0.92	30	0.98	7	1
45	0.78	35	0.93	8	1.04
50	0.65	40	0.84	10	1.11
60	0.45	45	0.76	12	1.16
-	-	50	0.7	14	1.22
-	-	-	-	16	1.25

Example for Choosing the Correct Dryer;

If a compressor delivers 200 m³/h at 6 bar the dryer inlet temperature is 40°C and ambient temperature is 30°C
 Please choose your Dryer as follows;
 $200 / 0.94 / 0.92 / 0.98 = 236 \text{ m}^3/\text{h}$
 The correct dryer for this application is MKE305

Nominal Working Pressure	7 barg	Minimum Inlet Temperature	5°C
Maximum Working Pressure	16 barg	Nominal Ambient Temperature	25°C
Minimum Working Pressure	4 barg	Maximum Ambient Temperature	50°C
Nominal Inlet Temperature	35°C	Minimum Ambient Temperature	5°C
Maximum Inlet Temperature	60°C	Refrigerant	R513a

Technical Specifications

Model	Capacity (m ³ /h)	Voltage	Connection Size	Filter Quantity and Type	Element Type	Pressure Drop (mbar)	Control Type	Dimensions		
								Length (mm)	Width (mm)	Height (mm)
MKE-23	23	230V / 1 Ph / 50 Hz	1/2"	1*GKON65X + 1*GKON65Y	MKON65 KIT	95	Digi-Pro	372	369	706
MKE-38	38	230V / 1 Ph / 50 Hz	1/2"	1*GKON65X + 1*GKON65Y	MKON65 KIT	150	Digi-Pro	372	369	706
MKE-53	53	230V / 1 Ph / 50 Hz	1/2"	1*GKON65X + 1*GKON65Y	MKON65 KIT	250	Digi-Pro	372	369	706
MKE-70	70	230V / 1 Ph / 50 Hz	1/2"	1*GKON65X + 1*GKON65Y	MKON65 KIT	220	Digi-Pro	372	369	706
MKE-100	100	230V / 1 Ph / 50 Hz	3/4"	1*GKON155X + 1*GKON155Y	MKON155 KIT	80	Digi-Pro	454	473	832
MKE-155	155	230V / 1 Ph / 50 Hz	3/4"	1*GKON155X + 1*GKON155Y	MKON155 KIT	195	Digi-Pro	453	473	832
MKE-190	190	230V / 1 Ph / 50 Hz	3/4"	1*GKON155X + 1*GKON155Y	MKON155 KIT	290	Digi-Pro	453	473	832
MKE-210	210	230V / 1 Ph / 50 Hz	1 1/2"	1*GKON405X + 1*GKON405Y	MKON405 KIT	195	Digi-Pro	506	556	875
MKE-305	305	230V / 1 Ph / 50 Hz	1 1/2"	1*GKON405X + 1*GKON405Y	MKON405 KIT	290	Digi-Pro	506	556	875
MKE-375	375	230V / 1 Ph / 50 Hz	1 1/2"	1*GKON405X + 1*GKON405Y	MKON405 KIT	180	Digi-Pro	506	556	875
MKE-495	495	230V / 1 Ph / 50 Hz	2"	1*GKON805X + 1*GKON805Y	MKON805 KIT	280	Digi-Pro	648	678	1157
MKE-623	623	230V / 1 Ph / 50 Hz	2"	1*GKON805X + 1*GKON805Y	MKON805 KIT	210	Digi-Pro	648	678	1157
MKE-930	930	230V / 1 Ph / 50 Hz	2"	1*GKON1205X + 1*GKON1205Y	MKON1205 KIT	130	Digi-Pro	947	727	1369
MKE-1200	1200	230V / 1 Ph / 50 Hz	2"	1*GKON1205X + 1*GKON1205Y	MKON1205 KIT	160	Digi-Pro	947	727	1369
MKE-1388	1388	400V / 3 Ph / 50 Hz	3"	1*GKON-HC-1805X + 1*GKON-HC-1805Y	MKON-HC-1805 KIT	320	Digi-Pro	948	798	1459
MKE-1800	1800	400V / 3 Ph / 50 Hz	3"	1*GKON-HC-1805X + 1*GKON-HC-1805Y	MKON-HC-1805 KIT	260	Digi-Pro	948	798	1459
MKE-2500	2500	400V / 3 Ph / 50 Hz	3"	1*GKON-HC-2775X + 1*GKON-HC-2775Y	MKON-HC-2775 KIT	170	Digi-Pro	1163	778	1722
MKE-2775	2775	400V / 3 Ph / 50 Hz	3"	1*GKON-HC-2775X + 1*GKON-HC-2775Y	MKON-HC-2775 KIT	320	Digi-Pro	1163	778	1722
MKE-3330	3330	400V / 3 Ph / 50 Hz	DN100 Flange	1*GKO5850X + 1*GKO5850Y	GKO5850 KIT	240	Digi-Pro	1577	993	1906
MKE-3915	3915	400V / 3 Ph / 50 Hz	DN100 Flange	1*GKO5850X + 1*GKO5850Y	GKO5850 KIT	350	Digi-Pro	1577	993	1906
MKE-5085	5085	400V / 3 Ph / 50 Hz	DN100 Flange	1*GKO5850X + 1*GKO5850Y	GKO5850 KIT	295	ESD-3	1647	1077	2005
MKE-5850	5850	400V / 3 Ph / 50 Hz	DN100 Flange	1*GKO5850X + 1*GKO5850Y	GKO5850 KIT	320	ESD-3	1647	1077	2005
MKE-6975	6875	400V / 3 Ph / 50 Hz	DN150 Flange	** Externally Connected - F6500 X / Y	6*M1200 KIT	295	ESD-3	2188	1062	2024
MKE-7875	7875	400V / 3 Ph / 50 Hz	DN150 Flange	** Externally Connected - F8500 X / Y	8*M1200 KIT	320	ESD-3	2188	1062	2024
MKE-9000	9000	400V / 3 Ph / 50 Hz	DN150 Flange	** Externally Connected - F11000 X / Y	10*M1200 KIT	320	ESD-3	2247	1200	2044
MKE-10500	10500	400V / 3 Ph / 50 Hz	DN200 Flange	** Externally Connected - F11000 X / Y	10*M1200 KIT	320	ESD-3	2247	1200	2044
MKE-12500	12500	400V / 3 Ph / 50 Hz	DN200 Flange	** Externally Connected - F14000 X / Y	14*M1200 KIT	320	ESD-3	2550	1550	2100

Note: Water condenser is available for all models

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO7183.

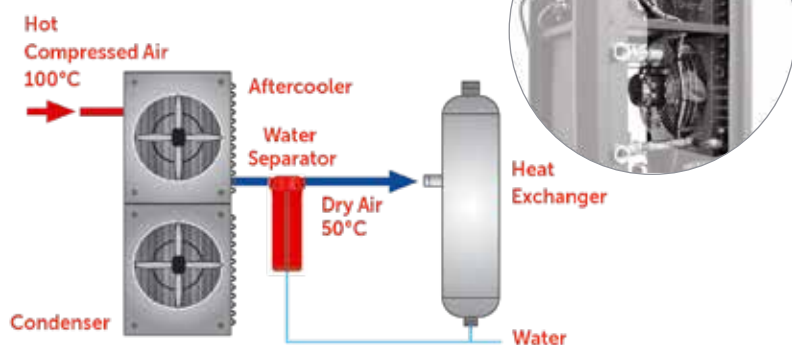
** Not integrated and not included in standard package.

► MH SERIES HIGH TEMPERATURE

COMPRESSED AIR DRYERS ◀

Most compressor manufacturers do not use an aftercooler on their piston type compressors. Therefore compressed air exits the compressor at about 100°C temperature. Mikropor's High Temperature Dryer has an aftercooler to reduce the inlet temperature.

After Cooler Condenser Inside



Technical Specifications

Model	Capacity (m ³ /h)	Voltage	Connection Size	Dimensions (mm)		
				Width	Length	Height
MH-31	31	230V / 1 Ph / 50 Hz	1/2"	447	448	957
MH-52	52	230V / 1 Ph / 50 Hz	1/2"	447	448	957
MH-75	75	230V / 1 Ph / 50 Hz	1/2"	447	448	957
MH-106	106	230V / 1 Ph / 50 Hz	3/4"	447	448	957
MH-160	160	230V / 1 Ph / 50 Hz	3/4"	512	627	877
MH-212	212	230V / 1 Ph / 50 Hz	3/4"	512	627	877

Correction Factor for MH Series

Required Flow / F1 / F2 / F3 / F4 = Corrected Flow

Pressure (bar)	F1	Inlet Temperature (°C)	F2	Ambient Temperature (°C)	F3	Dew Point (°C)	F4
4.1	0.70	4	1.40	4	1.10	3.3	0.65
5	0.75	10	1.40	10	1.10	5	0.73
6	0.80	16	1.40	16	1.10	7.2	0.80
7	0.83	21	1.40	24	1.10	10	1
7.9	0.86	26	1.35	29	1.07	12.8	1.10
8.5	0.90	32	1.30	35	1.03	15.5	1.22
10	0.93	38	1.27	38	1	-	-
11	0.96	65	1.06	40	0.96	-	-
12	1	82	1	45	0.82	-	-
13	1.10	93	0.85	-	-	-	-
14	1.12	98	0.78	-	-	-	-
16	1.15	104	0.75	-	-	-	-

Nominal Working Pressure	12 barg	Minimum Inlet Temperature	5°C
Maximum Working Pressure	16 barg	Nominal Ambient Temperature	38°C
Minimum Working Pressure	4 barg	Maximum Ambient Temperature	43°C
Nominal Inlet Temperature	82°C	Minimum Ambient Temperature	5°C
Maximum Inlet Temperature	104°C	Refrigerant	R513a

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO7183.

Mikropor Air Quality Focus

Mikropor knows the importance of high-quality compressed air and provides customers with the highest quality air possible. Using clean, dry air is extremely important for most air powered applications. Moisture or contamination in the air from the compressor discharge will result in many complications to production equipment. These complications will decrease productivity and may affect the production quality of final product.

Applications

Mikropor provides an entire range of products for filtration and air purification applications to fit various market requirements (ISO 8573.1: 2010 standard). Applications include: Food production, dairies, breweries, chemical plants, pure air and clean room technology, pharmaceutical industry, weaving machines, photo labs, paint spraying, powder coating, packaging, control and instrument air, sand and / or shot blasting, general air works, microchip production, optics, process air as well as many other industries

The Refrigerant Circuit and Insulation

Mikropor exclusively uses environmentally friendly R513a refrigerant gas in the dryers. This refrigerant is suitable for both low and high temperature applications. R513a has excellent thermodynamic properties and can operate at very low pressure compared to other refrigerants.

Also, similar to the R134a on thermodynamic properties but with the lower GWP (Global Warming Potential) than R134a. Which is suitable with the F-Gas Regulation. This will in turn increase the refrigerant compressor's service life. With R513a Mikropor dryers can operate at very high ambient temperatures. Mikropor engineers add extra capability to the heat exchangers with a superior no loss insulation system. This perfect insulation philosophy continues to the refrigeration circuit side also. Superior insulation and oversized condensers (for ultra-high ambient temperatures) enable the MCY Series Dryers to offer continuous air quality.

Mikropor MCY Series Cycling air dryers supply constant dewpoint at all flow ranges.



▶ MCY SERIES THERMAL MASS/CYCLING INTEGRATED FILTRATION



COMPRESSED AIR DRYERS ◀

Compact Design

MCY Series Air Dryers are highly reliable, efficient, have small space requirements and offer low cost ownership. Integration of pre / post filtration within the dryer cabinet saves labour time, installation cost and valued production space. The compact size also offers flexibility and economy during transportation.

SAFETY - Electrical Cabinet Isolation

- Electrical panel separated from service areas of the dryer.
- Minimization of electrical components from refrigerant side of dryer.
- Electrical controls access without exposure high heat areas.



MCY Advantages

- "Best in Class" low package pressure drop saves energy consumption from the supplying air compressor.
- Thermal mass technology offers stable pressure dewpoint at varying loads.
- Mikropor state of the art "3 in 1" cast aluminium heat exchanger provides unmatched longevity & cooling.
- Glycol cooling components are all stainless steel.
- 60°C Max inlet temp.

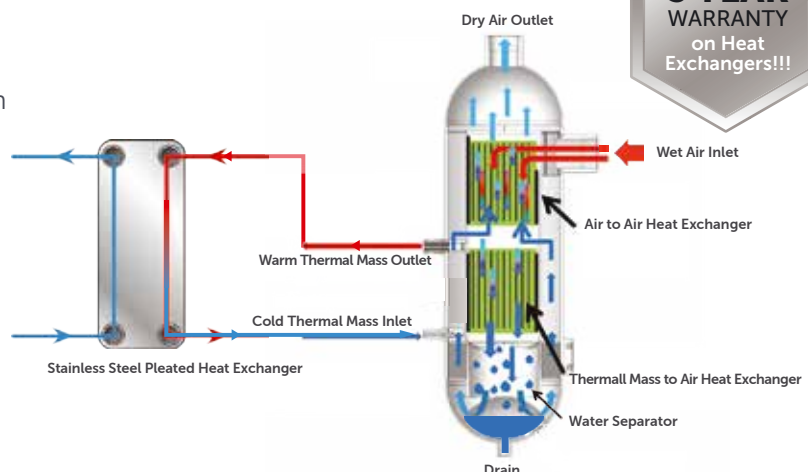


Mikropor Advanced "3 in 1" Heat Exchanger

Thermally Optimized Encapsulated Design

- Air to Air Exchanger
- Thermal Mass to Air
- Multistage Moisture Separation

High Strength Aluminium Design
Large Surface Area for Heat Transfer
Robust Cylindrical Casing



Scroll Refrigerant Compressors:

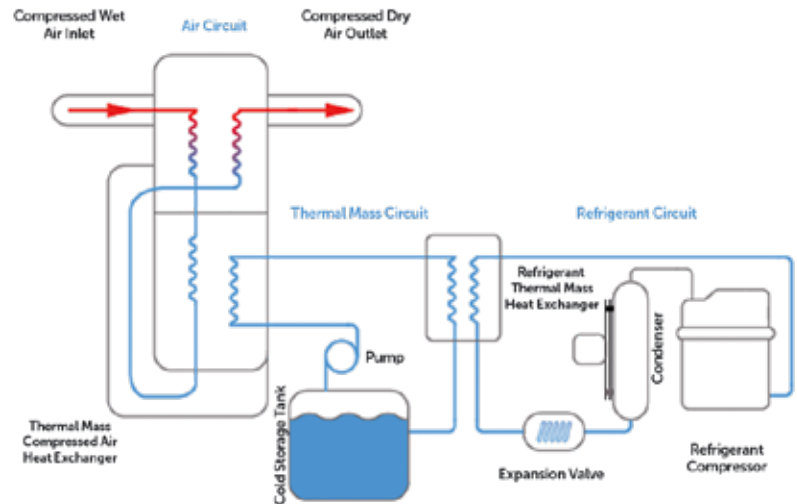
- Have fewer moving parts
- Offer smoother and quieter operation
- And are more reliable and more efficient than reciprocating types.

Moisture saturated Compressed Air from the Air Compressor enters a Particulate Pre-Filter then into the Thermal Mass Dryer-Compressed Air Travels through a Coalescing Pre Filter and then 3 in 1 Heat Exchanger.

As the compressed air passes through, it is then cooled by the cold Thermal Mass System and water vapor then condenses into liquid and is removed with the drain system.

Cold compressed air then passes by the incoming hot air to re-heat in order to prevent plant air pipes from sweating – then the dried compressed air passes through a Coalescing Post Filter and out to the customers application.

MCY Cycling Series-Working Principle



kW-CY Controllers (495Nm³/h to 930 Nm³/h units)

Mikropor MCY Series Air Dryers incorporate exclusive Digi-Pro series controller. The kW-CY digi-Pro controllers have outstanding technology for both functionality and durability in addition to visual appeal. The new controller design offers ease of adjustment with one finger, with accurate digital dew point display. In addition to coded alarm monitoring of the dryer.

Digital Controller with Embedded Features

- Digital dew point monitoring
- Periodic maintenance interval display
- Status report
- Hours run meter
- Fahrenheit and Centigrade selection



Easy Service

Easy access into the cooling components in seconds by the help of "easy lift" panels with integrated finger slots. Simplifies service access with quick access by technicians (no screws / fasteners to remove).



Easy Service



kW-CY ESD Controller (1200 Nm³/h to 12500 Nm³/h units)

Mikropor MCY Series Air Dryers of larger capacity have ESD Digital Controller. With the help of the highly engineered kW-CY ESD Controller on the MCY Series Cycling Air dryers reduce energy consumption. The ESD interface assists the users to monitor many useful parameters on the dryer and guides them to troubleshoot any problem very easily. During the nights, weekends and holidays many companies do not stop their dryers although the compressors may be stopped. kW-CY ESD Controller saves huge amounts of money by simply shutting the dryer down automatically when it is not in use.



Grooved Couplings and Fittings

- The compressed air circuit utilizes grooved couplings and fittings to ensure a positive connection without leaks.
- These couplings assist the service technician to dismantle and assemble pipes easily and quickly.



Service Safety

- The GO Series Filter integration features.
- Zero Loss Drain system integration features.
- Manual valves allow the system to be depressurized safely when service is needed.
- Integral zero air loss drain
- No compressed air Loss
- Low maintenance design
- Reliable
- Robust low operating cost
- Simple installation

Zero Clearance Compressed Air Filters with High Performance Elements

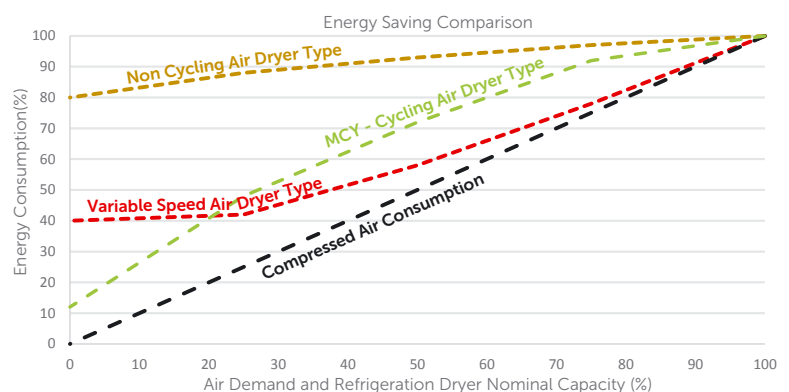
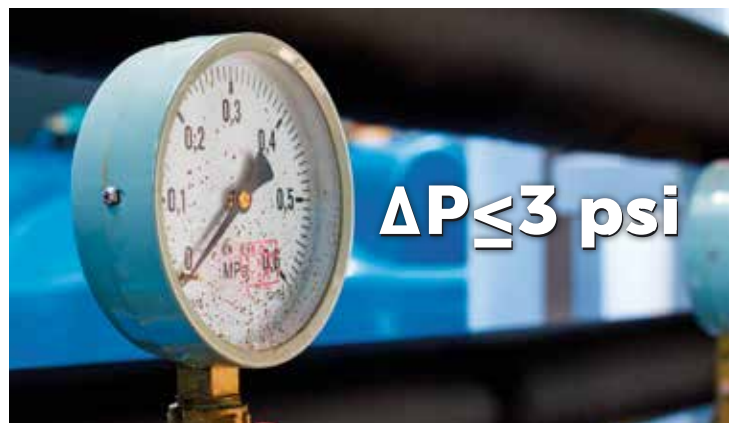
Mikropor GKON Series compressed air filters are a MCY Series dryer standard. The X Pre-Filter (coalescing filter for water removal) is used for up to 1-micron particles and the Y Post Filter (coalescing filter for oil removal) is used to remove oil down to 0.01 ppm. Listening to customer needs our engineers created a service friendly design. The Zero clearance design helps service technicians to replace the element in just a few minutes.

The MCY Series dryer / filter combination has 2 elements and 2 Viton O-rings to ensure operation of the dryers at its best performance until the next planned maintenance.



Process Air Quality Protection

Pressure drop is a large concern in compressed air. In many applications high pressure drops will cause a decrease in the pressure at the point of use which results the machines or processes not operating correctly. Presence of dirt particles and oil in the compressed air system may result in filter blockage. It is important for the end users and service technicians to recognize if there is a problem in the system. The performance of the filters directly affects the pressure drops and system performance. Therefore, it is very important that the filter elements are changed at the filter service time. MCY Series Digital Controls feature an alarm/warning indicating the appropriate time to change the filter elements. When the indication should occur, the element change will assist to avoid loss of performance and pressure drop.



Correction Factor for MCY Air Dryers

Inlet Temperature (°C)	F1	Ambient Temperature (°C)	F2	Pressure (bar)	F3
30	1.29	20	1.05	4	0.80
35	1	25	1	6	0.94
40	0.92	30	0.98	7	1
45	0.78	35	0.93	8	1.04
50	0.65	40	0.84	10	1.11
60	0.45	45	0.76	12	1.16
-	-	50	0.7	14	1.22
-	-	-	-	16	1.25

Example for Choosing the Correct Dryer

If an air compressor delivers 500 m³/h at 6 bar, the dryer inlet temperature is 45°C and ambient temperature is 30°C

Please choose your dryer model as follows;
 $500 / 0.94 / 0.78 / 0.98 = 695 \text{ m}^3/\text{h}$

The correct dryer model for this application is MCY930

MCY Series - Technical Specifications

Model	Capacity (m ³ /h)	Voltage	Connection Size	Filter Quantity and Type	Replacement Filter Element Kit	Dimensions (mm)		
						Length	Width	Height
MCY-210	210	230V / 1Ph / 50Hz	1 1/2"	1*GKON405X + 1*GKON405Y	MKON405 KIT	777	747	1378
MCY-305	305	230V / 1Ph / 50Hz	1 1/2"	1*GKON405X + 1*GKON405Y	MKON405 KIT	777	747	1378
MCY-375	375	230V / 1Ph / 50Hz	1 1/2"	1*GKON405X + 1*GKON405Y	MKON405 KIT	777	747	1378
MCY-495	495	230V / 1 Ph / 50 Hz	2"	1*GKON805X + 1*GKON805Y	MKON805 KIT	857	727	1505
MCY-623	623	230V / 1 Ph / 50 Hz	2"	1*GKON805X + 1*GKON805Y	MKON805 KIT	828	728	1763
MCY-930	930	230V / 1 Ph / 50 Hz	2"	1*GKON1205X + 1*GKON1205Y	MKON1205 KIT	828	728	1763
MCY-1200	1200	230V / 1 Ph / 50 Hz	2"	1*GKON1205X + 1*GKON1205Y	MKON1205 KIT	828	728	1763
MCY-1388	1388	400V / 3 Ph / 50 Hz	3"	1*GKON-HC-1805X + 1*GKON-HC-1805Y	MKON-HC-1805 KIT	1148	798	1739
MCY-1800	1800	400V / 3 Ph / 50 Hz	3"	1*GKON-HC-1805X + 1*GKON-HC-1805Y	MKON-HC-1805 KIT	1148	798	1739
MCY-2500	2500	400V / 3 Ph / 50 Hz	3"	1*GKON-HC-2775X + 1*GKON-HC-2775Y	MKON-HC-2775 KIT	1313	878	1788
MCY-2775	2775	400V / 3 Ph / 50 Hz	3"	1*GKON-HC-2775X + 1*GKON-HC-2775Y	MKON-HC-2775 KIT	1313	878	1788
MCY-3330	3330	400V / 3 Ph / 50 Hz	DN100 Flange	1*GKO5850X + 1*GKO5850Y	GKO5850 KIT	1577	993	1976
MCY-3915	3915	400V / 3 Ph / 50 Hz	DN100 Flange	1*GKO5850X + 1*GKO5850Y	GKO5850 KIT	1577	993	1976
MCY-5085	5085	400V / 3 Ph / 50 Hz	DN100 Flange	1*GKO5850X + 1*GKO5850Y	GKO5850 KIT	1797	1077	2075
MCY-5850	5850	400V / 3 Ph / 50 Hz	DN100 Flange	1*GKO5850X + 1*GKO5850Y	GKO5850 KIT	1797	1077	2075
MCY-6875	6875	400V / 3 Ph / 50 Hz	DN150 Flange	** Externally Connected - F6500 X / Y	6*M1200 KIT	2188	1062	2024
MCY-7875	7875	400V / 3 Ph / 50 Hz	DN150 Flange	** Externally Connected - F8500 X / Y	8*M1200 KIT	2188	1062	2024
MCY-9000	9000	400V / 3 Ph / 50 Hz	DN150 Flange	** Externally Connected - F11000 X / Y	10*M1200 KIT	2247	1551	2114
MCY-10500	10500	400V / 3 Ph / 50 Hz	DN200 Flange	** Externally Connected - F11000 X / Y	10*M1200 KIT	2247	1551	2114
MCY-12500	12500	400V / 3 Ph / 50 Hz	DN200 Flange	** Externally Connected - F14000 X / Y	14*M1200 KIT	2547	1547	2172

** Not integrated and not included in standard package

Nominal Working Pressure	7 barg	Minimum Inlet Temperature	5°C
Maximum Working Pressure	16 barg	Nominal Ambient Temperature	25°C
Minimum Working Pressure	4 barg	Maximum Ambient Temperature	50°C
Nonnal Inlet Temperature	35°C	Minimum Ambient Temperature	5°C
Maximum Inlet Temperature	60°C	Refrigerant	R513a



▶ MK-DS SERIES DIGITAL SCROLL INTEGRATED FILTRATION



COMPRESSED AIR DRYERS ◀

Each and every compressed air user around the world has been looking for a complete solution to associate the best practices of energy management with their refrigerated air dryers, not just to protect the environment, but also to save money on operating costs.

Mikropor is proud to announce that the new MK-DS series explicitly prevails over any other type of refrigerated air dryer by achieving everyone's goal to lower energy costs.

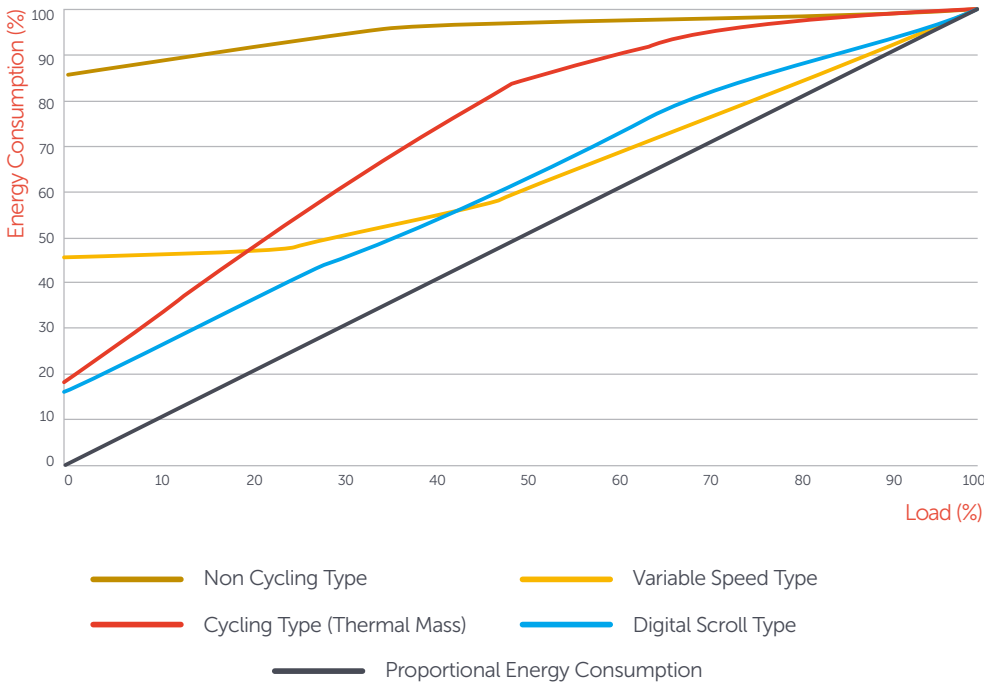
The MK-DS Series, with a specially designed heat exchanger and digital scroll compressor, provides unrivalled energy efficiency in a refrigerated air dryer.

The challenge of maintaining a stable dewpoint and saving energy can be overcome with this latest technological development.

Combining Mikropor's expertly designed heat exchanger, leading filtration technology and digital scroll compression in Mikropor's MK-DS dryers provides the ultimate energy efficiency solution for compressed air systems with varying levels of air demand.



Energy Comparison



▶ MK-DS SERIES DIGITAL SCROLL INTEGRATED FILTRATION

COMPRESSED AIR DRYERS ◀

- **Best in Class** energy saving
- Refrigeration systems are designed with digital scroll compressors and have an automatic switch to control loaded and unloaded states according to real-time air load demand during system operation in order to maximize energy savings.
- Advanced and user friendly electronic control system
- Electronic expansion valve
- Fan speed control
- Integrated filters
- Low pressure drop
- Energy efficiency is maximized through the design of the exclusive aluminium plate type heat exchangers.
- The advanced digital scroll compression technology not only improves efficiency, durability and reliability but also lowers the decibel sound levels compared to a standard refrigerated air dryer.
- Environmentally friendly low-pressure R-513a refrigerant gas is used in digital scroll compressor to pressurize the system.
- The smart control unit named kW-DS Controller provides high energy efficiency with electricity consumption optimized for variable capacities.



kW Saver



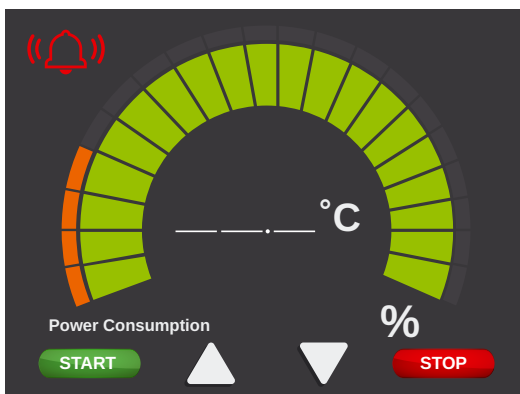
STABILITY



PERFORMANCE



**ECO
FRIENDLY**



The advanced digital scroll technology utilized in Mikropor's MK-DS Series dryers maintains a stable pressure dew point while performing **up to 91% energy savings** during operation.

How It Works?

Unlike most refrigerated dryers in the industry, Mikopor's MK-DS series utilize a proprietary digital evaporator technology to deliver significant energy savings over traditional cycling and variable speed designs.

This brand new technological breakthrough offers a vital opportunity to save the highest amount of energy possible in a refrigerated air dryer. The digital compressor operates with various different ranges of inlet flow conditions which also makes it by far the most energy efficient compressor to be utilized in a refrigerated air dryer.

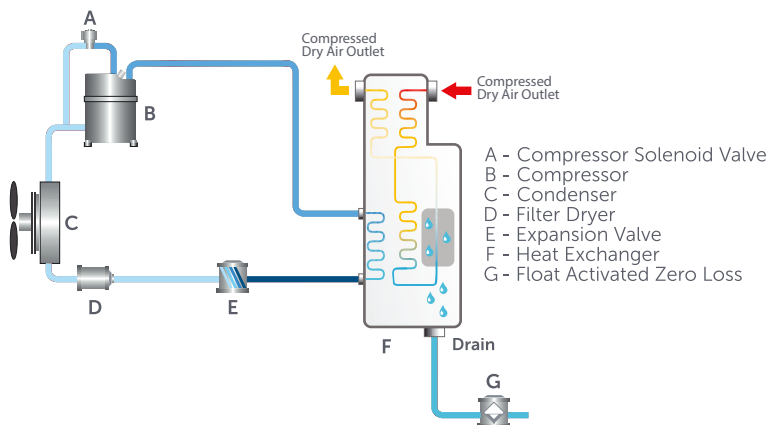
MK-DS Dryers are equipped with a true no-loss condensate drain which provides effective condensate removal without any loss of (valuable) compressed air.

Maximum energy savings are achieved by establishing continuous communication with the temperature probe in the evaporator which adjusts the refrigeration pressure to the temperature of the air exiting the evaporator.



Fundamental Components of the MK-DS Series

- Digital Scroll Compressor
- Electronic Expansion Valve
- Variable Speed Fan Motor
- Highly Engineered Control Algorithm
- Cutting-Edge Technology Electronic Controller



Mikopor's latest MK-DS series refrigerated dryer technology saves the highest amount of energy possible on the market.



Why is MK-DS so energy efficient and cost effective ?

Non-cycling refrigerated dryers are designed to run continuously and consume almost 100% of the nominal power at all loads. Hence, it makes no difference if a facility is operational or not - A non-cycling dryer will just keep running, regardless of the air demand at any given time. As mentioned above, digital scroll technology equipped dryers can be loaded or unloaded automatically depending upon the real-time air load demand and this feature simply makes the MK-DS range much more energy efficient than any other type of refrigerated air dryer.

MK-DS Series - Technical Specifications

Model	Capacity (m ³ /h)	Voltage	Connection Size	Filter Quantity and Type	Replacement Filter Element Kit	Control Type
MK-DS-120	930	400V / 3 Ph / 50 Hz	2"	1*GKON1205X + 1*GKON1205Y	MKON1205 KIT	μPc
MK-DS-130	1200	400V / 3 Ph / 50 Hz	2"	1*GKON1205X + 1*GKON1205Y	MKON1205 KIT	μPc
MK-DS-140	1388	400V / 3 Ph / 50 Hz	3"	1*GKON-HC-1805X + 1*GKON-HC-1805Y	MKON-HC-1805 KIT	μPc
MK-DS-150	1800	400V / 3 Ph / 50 Hz	3"	1*GKON-HC-1805X + 1*GKON-HC-1805Y	MKON-HC-1805 KIT	μPc
MK-DS-170	2775	400V / 3 Ph / 50 Hz	3"	1*GKON-HC-2775X + 1*GKON-HC-2775Y	MKON-HC-2775 KIT	μPc
MK-DS-180	3330	400V / 3 Ph / 50 Hz	DN100 Flange	1*GKO5850X + 1*GKO5850Y	GKO5850 KIT	μPc
MK-DS-190	3915	400V / 3 Ph / 50 Hz	DN100 Flange	1*GKO5850X + 1*GKO5850Y	GKO5850 KIT	μPc
MK-DS-200	5085	400V / 3 Ph / 50 Hz	DN100 Flange	1*GKO5850X + 1*GKO5850Y	GKO5850 KIT	μPc
MK-DS-210	5850	400V / 3 Ph / 50 Hz	DN100 Flange	1*GKO5850X + 1*GKO5850Y	GKO5850 KIT	μPc
MK-DS-220	6975	400V / 3 Ph / 50 Hz	DN150 Flange	** Externally Connected - F6500 X / Y	6*M1200 KIT	μPc
MK-DS-230	7875	400V / 3 Ph / 50 Hz	DN150 Flange	** Externally Connected - F8500 X / Y	8*M1200 KIT	μPc
MK-DS-240	9000	400V / 3 Ph / 50 Hz	DN150 Flange	** Externally Connected - F11000 X / Y	10*M1200 KIT	μPc
MK-DS-250	10500	400V / 3 Ph / 50 Hz	DN200 Flange	** Externally Connected - F11000 X / Y	10*M1200 KIT	μPc
MK-DS-260	12500	400V / 3 Ph / 50 Hz	DN200 Flange	** Externally Connected - F14000 X / Y	14*M1200 KIT	μPc

Nominal Working Pressure	7 barg	Minimum Inlet Temperature	5°C
Maximum Working Pressure	16 barg	Nominal Ambient Temperature	25°C
Minimum Working Pressure	4 barg	Maximum Ambient Temperature	45°C
Nominal Inlet Temperature	35°C	Minimum Ambient Temperature	5°C
Maximum Inlet Temperature	50°C	Refrigerant	R513a

Correction Factor for MK-DS Series

Inlet Temperature (°C)	F1	Ambient Temperature (°C)	F2	Pressure (bar)	F3
30	1.29	20	1.05	4	0.80
35	1	25	1	6	0.94
40	0.92	30	0.98	7	1
45	0.78	35	0.93	8	1.04
50	0.65	40	0.84	10	1.11
60	0.45	45	0.76	12	1.16
-	-	50	0.7	14	1.22
-	-	-	-	16	1.25

Example for Choosing the Correct MK-DS Series

If an air compressor delivers 500 m³/h at 6 bar, the dryer inlet temperature is 45°C and ambient temperature is 30°C

Please choose your dryer model as follows;
 $500 / 0.94 / 0.78 / 0.98 = 695 \text{ m}^3/\text{h}$

The correct dryer model for this application is MK DS 120

▶ MK-HP SERIES HIGH PRESSURE

COMPRESSED AIR DRYERS ◀

This design achieves a hyper-efficient 100% contact between the air and refrigerant circuits, delivering state-of-the-art performance and great cooling efficiency.

The state-of-the-art 3-in-1 design features very low differential pressure delivering significant energy savings. The 3-in-1 Heat-Exchanger is compact and allows the dryer to be smaller and reduces the space required for the dryer. Mikropor offers a variety of 3-in-1 dryers equipped with the 3-in-1 Heat-Exchanger to meet a full range of capacity and power requirements.

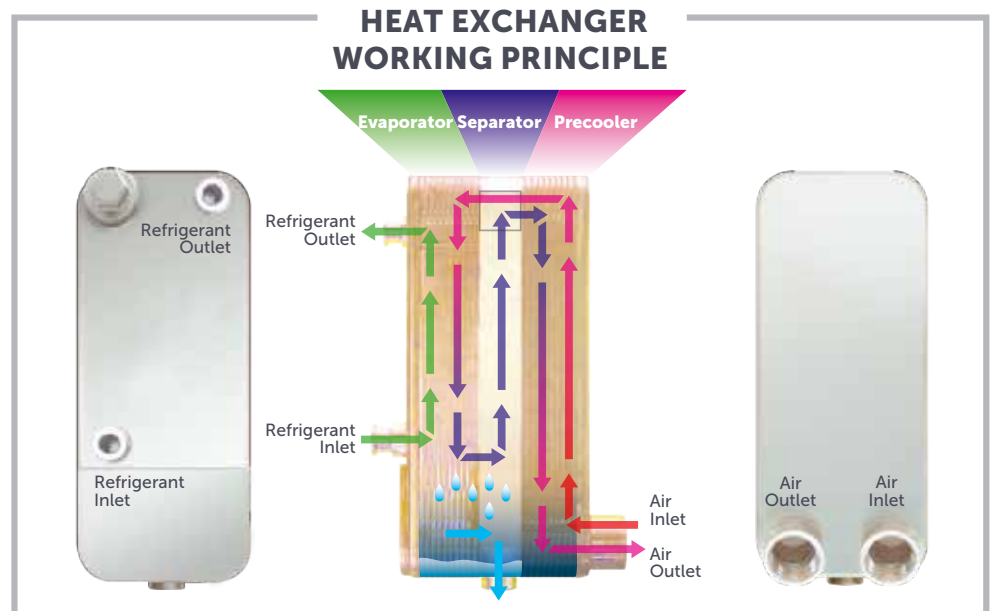


40 bar



Mikropor High Pressure Dryers have stainless steel brazed plate heat exchangers.

- Size Reduced by 50%
- Dewpoint 3°C
- Stainless Steel, Anti-corrosion
- Working Pressure Up to 45 bar
- Inlet/Outlet Temp. Difference <10°C



Mikropor MK-HP range High Pressure Air Dryer Series have state of the art stainless steel brazed plate heat exchanger. It is designed for high pressure air dryers. The heat exchanger has the following sections in one module;

- Air/Air heat exchanger (Economizer)
- Air/Refrigerant heat exchanger (Evaporator)
- Water separator

With reliable stainless steel and optimized efficiency design, Mikropor MK-HP heat exchangers supply size reduction, anti corrosion and great heat transfer.

Technical Specifications

Model	Capacity (m ³ /h)	Voltage	Connection Size	Dimensions (mm)		
				Width	Length	Height
MK-HP-50	50	230V / 1 Ph / 50 Hz	3/4"	454	361	553
MK-HP-90	90	230V / 1 Ph / 50 Hz	3/4"	454	361	553
MK-HP-150	150	230V / 1 Ph / 50 Hz	3/4"	453	401	623
MK-HP-220	220	230V / 1 Ph / 50 Hz	3/4"	453	401	623
MK-HP-300	300	230V / 1 Ph / 50 Hz	1 1/4"	505	451	762
MK-HP-400	400	230V / 1 Ph / 50 Hz	1 1/4"	505	451	762
MK-HP-500	500	230V / 1 Ph / 50 Hz	1 1/4"	505	451	812
MK-HP-575	575	230V / 1 Ph / 50 Hz	1 1/4"	505	451	812
MK-HP-775	775	230V / 1 Ph / 50 Hz	1 1/4"	675	501	1044
MK-HP-910	910	230V / 1 Ph / 50 Hz	1 1/4"	675	501	984
MK-HP-1000	1000	230V / 1 Ph / 50 Hz	DN50 PN63	947	727	1169
MK-HP-1160	1160	230V / 1 Ph / 50 Hz	DN50 PN63	947	727	1169
MK-HP-1500	1500	230V / 1 Ph / 50 Hz	DN50 PN63	947	727	1169
MK-HP-1600	1600	400V / 3 Ph / 50 Hz	DN50 PN63	947	797	1459
MK-HP-1800	1800	400V / 3 Ph / 50 Hz	DN50 PN63	947	797	1459
MK-HP-2200	2200	400V / 3 Ph / 50 Hz	DN65 PN63	1162	797	1495
MK-HP-2500	2500	400V / 3 Ph / 50 Hz	DN65 PN63	1162	797	1495
MK-HP-2700	2700	400V / 3 Ph / 50 Hz	DN65 PN63	1162	797	1495
MK-HP-3000	3000	400V / 3 Ph / 50 Hz	DN65 PN63	1162	797	1495
MK-HP-3300	3300	400V / 3 Ph / 50 Hz	DN65 PN63	1162	797	1495
MK-HP-3600	3600	400V / 3 Ph / 50 Hz	DN65 PN63	1162	797	1495
MK-HP-5000	5000	400V / 3 Ph / 50 Hz	DN80 PN63 Flange	997	1697	1493
MK-HP-6000	6000	400V / 3 Ph / 50 Hz	DN100 PN63 Flange	1076	1645	1645

Correction Factor for MK-HP Series

Inlet Temp. (°C)	F1	Ambient Temp. (°C)	F2	Pressure (bar)	F3
-	-	-	-	7	0.20
-	-	-	-	10	0.28
-	-	-	-	13	0.34
-	-	-	-	15	0.40
-	-	-	-	20	0.50
-	-	-	-	25	0.60
-	-	-	-	30	0.75
-	-	-	-	35	0.85
35	1	25	1	40	1
40	0.85	30	0.93	45	1.10
45	0.72	35	0.87	-	-
50	0.63	40	0.82	-	-
-	-	45	0.79	-	-

Nominal Working Pressure	40 barg	Minimum Inlet Temperature	5°C
Maximum Working Pressure	45 barg	Nominal Ambient Temperature	25°C
Minimum Working Pressure	7 barg	Maximum Ambient Temperature	45°C
Nominal Inlet Temperature	35°C	Minimum Ambient Temperature	5°C
Maximum Inlet Temperature	50°C	Refrigerant	R513a

▶ MTD SERIES HIGH-CAPACITY TURBO DRYER

COMPRESSED AIR DRYERS ◀

Water in the pneumatic system can be problematic. While the air is compressed the moisture inside the air is also densified and this remaining water damages the system components in time. For that reason, compressed air treatments have been used for a very long time.

Mikropor brings an innovative approach to compressed air drying systems by producing Mikropor Turbo Dryer (MTD) units. It is tremendously effective to use this unit in the high- capacity drying process which is in the range of 10.000 Nm³/h - 30.000 Nm³/h. The large capacity drying system is often problematic and very expensive due to the lack of available space in the equipment room. Mikropor solved these problems with its new compact design of MTD series. In MTD series all components are placed in one unit. Even in a very large capacity compressed air system 3°C dew point achieved. In addition, with used thermal mass technology drying process can be done with energy-saving even in the fluctuating compressed air usage.



Working Principle

Wet compressed air enters the 3 in 1 aluminum heat exchangers. In the beginning, the wet compressed air, is pre-cooled by coming counter-current dried air in the air-to-air part of the heat exchanger. Then it comes across with the thermal mass to decrease the dew point up to 3°C with the bottom of the heat exchanger condensate water droplets are collected and drained. Heated thermal mass gets colder with cold refrigerant gas and send to the heat exchanger again. This circulation continued to sustain dry compressed air in the system.

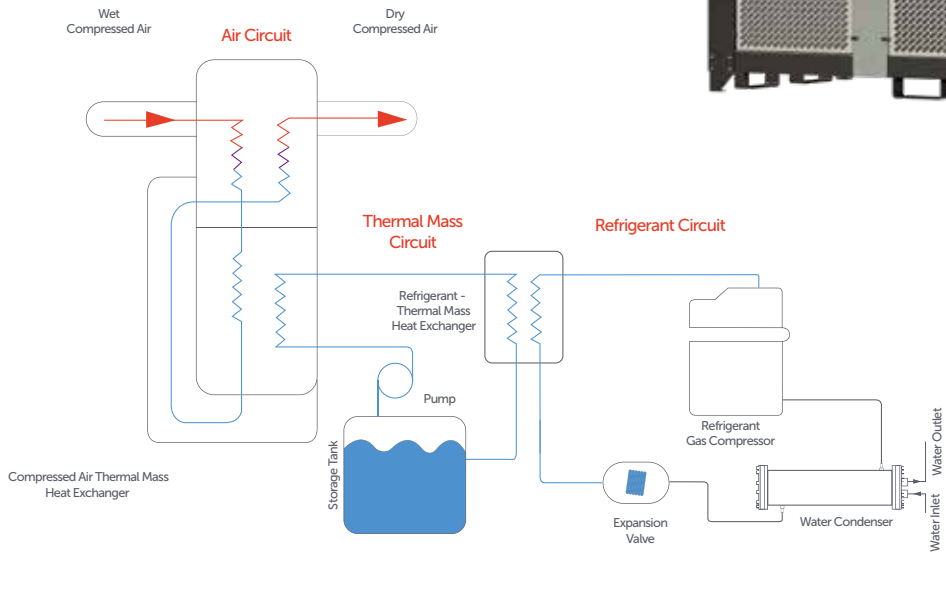
Standard Features

- 7" Touch Screen (MTD 25000 - 30000)
- 4.3" Touch Screen (MTD 10000 - 20000)
- Standard Modbus RS485 Communication
- High Strength Aluminium Design 3in 1 Heat Exchanger
- High Efficiency Scroll (MTD 10000 - 20000) and Screw (25000 - 30000) Refrigerant Compressor
- Stable Dew Point with Thermal Mass Technology
- Stainless Steel Cooling Components Mass-Refrigerant Evaporator, Pump
- Compact Design
- 10 barg Maximum Working Pressure
- Water Cooled Condenser

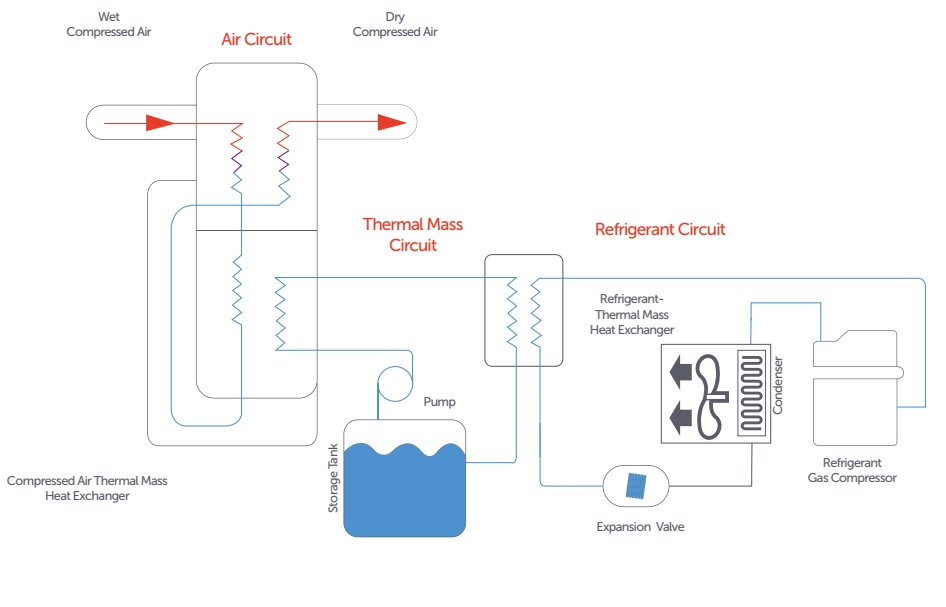


Optional Features

- Air-Cooled Condenser
- IP Communication with pCoWEB
- WebServer Feature
- BACNET, SNMP, MODBUS TCP/IP Communication



MTD Unit – Water Condenser



MTD Unit – Air Cooled

MTD Series - Technical Specifications

Model	Capacity (Nm ³ /h)	Pressure Drop (mbarg)	Power	Compressed Air Connection Size	Cooling Water Connection Size (For Water Cooled Units)	Drain Connection Size	Refrigerant	Water Cooled* Dimensions		
								Length (mm)	Width (mm)	Height (mm)
MTD 10000	10000	150	400V/3Ph/50 Hz	DN200 Flange	1 1/2"	1"	R410a	1362	2340	2341
MTD 12500	12500	150	400V/3Ph/50 Hz	DN200 Flange	1 1/2"	1"	R410a	1569	3438	2225
MTD 15000	15000	130	400V/3Ph/50 Hz	DN250 Flange	1 1/2"	1"	R410a	1579	3438	2335
MTD 20000	20000	150	400V/3Ph/50 Hz	DN300 Flange	DN50 PN10 Flange	1"	R410a	1578	3441	2362
MTD 25000	25000	150	400V/3Ph/50 Hz	DN300 Flange	DN50 PN10 Flange	1"	R407c	3292	2067	2375
MTD 30000	30000	130	400V/3Ph/50 Hz	DN350 Flange	DN65 PN10 Flange	1"	R407c	3292	2067	2397

Nominal Working Pressure	7 barg	Maximum Inlet Temperature	60°C
Maximum Working Pressure	10 barg	Minimum Inlet Temperature	5°C
Minimum Working Pressure	4 barg	Nominal Ambient Temperature	25°C
Nominal Inlet Temperature	35°C	Maximum Ambient Temperature	50°C
		Minimum Ambient Temperature	5°C

*All models have air cooled option.

MTD Series - Correction Factors

Inlet Temp. (°C)	F1	Ambient Temp. (°C)	F2	Pressure (barg)	F3
30	1.29	20	1.05	4	0.80
35	1	25	1	6	0.94
40	0.92	30	0.98	7	1
45	0.78	35	0.93	8	1.04
50	0.65	40	0.84	10	1.11
60	0.45	45	0.76	-	-
-	-	50	0.7	-	-

To determine the correct model, the compressor flow rate should be divided by the related F1, F2, and F3 values.

Example for Choosing the Correct Dryer

If an air compressor delivers 14 370 Nm³/h at 6 barg, the dryer inlet temperature is 45°C and ambient temperature is 30°C.

Please choose your dryer model as follows;

$14\ 370 / 0.94 / 0.78 / 0.98 = 19999\ \text{Nm}^3/\text{h}$. The correct dryer model for this application could be MTD 20000 Model.

AIR LINE DESIGN	AIR LINE DESIGN 1	APPLICATION	ISO 8573.1: 2010 CLASS
	<p>COMPRESSED AIR FILTERS</p>	SIMPLE	2.-3
	<p>COMPRESSED AIR FILTERS</p> <p>REFRIGERANT AIR DRYER</p> <p>COMPRESSED AIR FILTERS</p>	GENERAL PURPOSE	1.4.1
	<p>COMPRESSED AIR FILTERS</p> <p>REFRIGERANT AIR DRYER</p> <p>COMPRESSED AIR FILTERS</p>	ODORLESS	1.4.1
	<p>COMPRESSED AIR FILTERS</p> <p>COMPRESSED AIR FILTERS</p> <p>COMPRESSED AIR FILTERS</p> <p>DESICCANT DRYER</p> <p>COMPRESSED AIR FILTERS</p>	CRITICAL	1.2.1 (-40 °C / -40°F) 1.1.1 (-70 °C / -94 °F)

Purity Class	ISO 8573.1: 2010 Compressed Air Quality Standard							
	Solid Particulate				Water		Oil	
	Max. number of Particles per m ³			Particle Size (micron)	Concentration (mg/m ³)	Vapor Pressure Dew Point	Liquid (g/m ³)	Total Oil (Aerosol, Liquid and Vapor) (mg/m ³)
	0.1-0.5 micron	0.5-1 micron	1-5 micron					

0	As specified and determined by equipment user and supplier							
1	≤20000	≤400	≤10	-	-	≤-70°C	-	≤0.01
2	≤400000	≤6000	≤100	-	-	≤-40°C	-	≤0.1
3	-	≤900000	≤1000	-	-	≤-20°C	-	≤1
4	-	-	≤10000	-	-	≤+3°C	-	≤5
5	-	-	≤100000	-	-	≤+7°C	-	-
6	-	-	-	5	5	≤+10°C	-	-
7	-	-	-	40	10	-	0.5	-
8	-	-	-	-	-	-	5	-
9	-	-	-	-	-	-	10	-

for Solid Particles	for Water	for Oil
Element Type P - Class 3	Mikropor Refrigerated Air Dryers are Class 4	Element Type P - Class 3
Element Type X - Class 2		Element Type X - Class 2
Element Type Y - Class 1	Mikropor Desiccant Air Dryers are Class 1 and 2	Element Type Y - Class 1
Element Type A - N/A		Element Type A - Class 1 (when used with Y)

The light weight modular design desiccant dryer series brings a new concept in compressed air technology, offering total installation flexibility to meet specific needs.

Mikropor's Modular Desiccant Dryers are less than half the weight and size of a traditional twin tower design, allowing even the largest models to be easily moved through a standard doorway. Mikropor's innovative Modular Air Dryers make it easier and more affordable than ever to deliver high-quality compressed air for virtually wherever it's needed.

Mikropor Modular Desiccant Dryers have cosmetic beauty and can be located in clean, pleasant environments eyesore. Offered in sizes from 5 m³/h to 400 m³/h with dew point of -40°C to -70°C (optional) these dryers are equipped with everything you need, requiring only air inlet/outlet connections.

Using a highly engineered inlet and purge manifold design, Mikropor proudly offers one of the lowest pressure drop desiccant dryer in the industry.

- Small footprint, lightweight, advanced compact design
- Corrosion protected Aluminium construction
- Hassle-free, reliable electronic controls
- Can be floor, bench or wall mounted
- Quiet enough to be placed in any work environment
- Easy installation, easy maintenance



The new Modular Desiccant Dryers combine proven traditional dryer principles with the latest technology to provide unsurpassed efficiency, flexibility and world-renowned Mikropor reliability for your critical dry air applications.

Various Application Options

Modular Desiccant Air Dryers can be mounted to the wall with easy-to-use mounting brackets to free up additional space and can also be secured to the ground very easily.

Correction Factor for MMD Series

Pressure (bar)	F1	Inlet Temp. (°C)	F2
4.5	0.69	20	1
5	0.75	25	1
6	0.88	30	1
7	1	35	1
8	1.12	40	0.80
9	1.25	45	0.73
10	1.37	50	0.59
11	1.50	-	-
12	1.62	-	-
13	1.74	-	-
14	1.87	-	-
15	1.99	-	-
16	2.11	-	-



Technical Specifications

Model	Capacity		Voltage	Connection Size	Max. Working Pressure (bar)	Dimensions			
	(m ³ /h)	(cfm)				Width (mm)	Length (mm)	Height (mm)	Weight (kg)
MMD3	5	3	115-240V/50-60 Hz.	1/2"	16	320	336	558	17
MMD5	10	5	115-240V/50-60 Hz.	1/2"	16	320	320	633	19
MMD10	20	10	115-240V/50-60 Hz.	1/2"	16	320	320	908	27
MMD15	25	15	115-240V/50-60 Hz.	1/2"	16	370	350	808	31
MMD20	35	20	115-240V/50-60 Hz.	1/2"	16	370	350	1108	42
MMD25	45	25	115-240V/50-60 Hz.	1/2"	16	370	350	1258	48
MMD30	50	30	115-240V/50-60 Hz.	1/2"	16	370	350	1508	54
MMD40	70	40	115-240V/50-60 Hz.	1 1/2"	16	410	495	1250	71
MMD50	85	50	115-240V/50-60 Hz.	1 1/2"	16	410	495	1400	78
MMD60	100	60	115-240V/50-60 Hz.	1 1/2"	16	410	495	1750	92
MMD75	130	75	115-240V/50-60 Hz.	1 1/2"	16	430	622	1300	120
MMD100	170	100	115-240V/50-60 Hz.	1 1/2"	16	430	622	1450	133
MMD120	200	120	115-240V/50-60 Hz.	1 1/2"	16	430	622	1750	152
MMD180	300	180	115-240V/50-60 Hz.	1 1/2"	16	410	734	1499	186
MMD240	400	240	115-240V/50-60 Hz.	1 1/2"	16	410	889	1497	235
MMD HC 340	575	340	115-240 V / 50-60 Hz	2"	16	232	995	378	1654
MMD HC 400	680	400	115-240 V / 50-60 Hz	2"	16	232	1335	378	1554
MMD HC 500	850	500	115-240 V / 50-60 Hz	2"	16	232	1505	378	1654
MMD HC 590	1000	590	115-240 V / 50-60 Hz	2"	16	232	1675	378	1754
MMD HC 735	1250	735	115-240 V / 50-60 Hz	3"	16	232	1675	378	2054
MMD HC 890	1500	890	115-240 V / 50-60 Hz	3"	16	232	1845	378	2054
MMD HC 1060	1800	1060	115-240 V / 50-60 Hz	3"	16	232	2015	378	2054

HIGH CAPACITY MMD-HC SERIES

Pressure Dew Point	Nominal Inlet Temperature	Nominal Working Pressure	Maximum Inlet Temperature	Maximum Working Pressure	Maximum Ambient Temperature
-40°C / -70°C (opt)	35°C	7 bar	50°C	16 bar	50°C

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO7183.

PLC Monitor

The Mini PLC is a user-friendly controller and shows the working action simultaneously. It is possible to get an alarm signal. Dew point control and monitoring are possible with a dew point sensor.



The water inside the compressed air is always a problem. Atmospheric air includes water vapor, oil, and dust particles inside it. When the air is compressed the particles inside the air are also densified and produced unwanted condensate inside the compressed air. This condensate is generally acidic, and it could easily harm the pneumatic component of the system. It can damage the piping line and cause gas leakage, damage the end-product quality, or create undesired maintenance costs. For preventing these kinds of problems compressed air dryers should be used.

Mikropor Modular Pneumatic Compressed Air Dryer- MMD-P produces -40°C dew point compressed dry air without needing any power supply. MMD-P doesn't need any electrical connection for producing dry compressed air. For that reason, it can install in any place.

Advantages

- **No Electricity Required**
 - It could be installed in almost any industrial location as they do not require additional energy to operate. It could also be used in a hazardous area.
- **Low Cost**
 - Require no electricity thus lowering operating costs. Also, it needs only pre-defined maintenance.
- **High Efficiency**
 - It can supply dry compressed air immediately. It removes the water vapor and lowers the dew point to -40°C (optionally -70°C).
- **Compact Design**
 - It could be placeable in narrow spaces due to its modular design.



As operating in environments prone to explosive substances, it is imperative to adhere to the EU ATEX directives. The entities in charge must evaluate the premises for potential areas where explosive gas or dust mixtures could form. If deemed necessary, these areas should be categorized into specific zones. This zone classification enables the selection of appropriate machinery and equipment suitable for operation in those designated areas. The labels provided below outline the zone classifications within an installation where potentially explosive atmospheres might arise and labeling of hazardous locations, the classification of explosion groups and temperature classes, differentiation of gases, mists, and dusts.

		User	Appropriate machinery and equipment		
Gas Zone	Dust Zone	Presence of a potentially explosive atmospheric environment	Equipment group*	Equipment category	Application Area (not mining)
0		Constantly, often, approx. >1000 h/year	II	1G	Gases, mist, vapor
	20		II	1D	Dust
1		Occasionally, sometimes, approx. 10 – 1000 h/year	II	2G	Gases, mist, vapor
	21		II	2D	Dust
2		Rarely, infrequently, in the event of an error, approx. <10 h/year	II	3G	Gases, mist, vapor
	22		II	3D	Dust

* Equipment group states that the equipment is for use in areas that might be dangerous due to an explosive atmosphere/conditions.

In this context, Mikropor kindly states that the MMD-P Series is approved according to ATEX 2014/34/EU Directive with the scopes stated below. The classifications shown below show the approved protection classes of the MMD-P Series.



II 2G Exh IIC T6
II 2D Exh IIC T85

Technical Specifications

Model	Capacity		Connection Size
	(Nm ³ /h)	(scfm)	
MMD-P-3	5	3	1/2"
MMD-P-5	10	5	1/2"
MMD-P-10	20	10	1/2"
MMD-P-15	25	15	1/2"
MMD-P-20	35	20	1/2"
MMD-P-25	45	25	1/2"
MMD-P-30	50	30	1/2"
MMD-P-40	70	40	1 1/2"
MMD-P-50	85	50	1 1/2"
MMD-P-60	100	60	1 1/2"
MMD-P-75	130	75	1 1/2"
MMD-P-100	170	100	1 1/2"
MMD-P-120	200	120	1 1/2"
MMD-P-180	300	180	1 1/2"
MMD-P-240	400	240	1 1/2"

Pressure Dew Point	Nominal Inlet Temperature	Nominal Working Pressure	Maximum Inlet Temperature	Maximum Working Pressure	Maximum Ambient Temperature
-40°C / -70°C (opt)	35°C	7 bar	50°C	16 bar	50°C

* Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO7183.

Correction Factor for MMD-P Series

Pressure (bar)	F1	Inlet Temp. (°C)	F2
4.5	0.69	20	1
5	0.75	25	1
6	0.88	30	1
7	1	35	1
8	1.12	40	0.80
9	1.25	45	0.73
10	1.37	50	0.59
11	1.50	-	-
12	1.62	-	-
13	1.74	-	-
14	1.87	-	-
15	1.99	-	-
16	2.11	-	-

▶ **MMD-VP SERIES VACUUM MODULAR DESICCANT**



COMPRESSED AIR DRYERS ◀

It is highly crucial to have clean and dry air in the system to have profitable and efficient manufacturing worldwide. Mikropor MMD-VP Series Modular Vacuum Purge Heatless Desiccant Air Dryers remove water vapor from compressed air, stop corrosion, and inhibit the growth of micro-organisms in critical applications.

Mikropor MMD-VP Series Modular Vacuum Purge Heatless Desiccant Air Dryers supply high-quality dry air which has $-40\text{ }^{\circ}\text{C}$ dew point or optionally $-70\text{ }^{\circ}\text{C}$ dew point to the system with affordable prices and reliable way. In that way, the production machine has a longer life, minimum maintenance costs, and processed product is produced in a healthy and safe way. The new vacuum purge technology decreased air loss during the regeneration process and make the production more cost-efficient way.

Application Areas

- Food & Beverage
- Pharmaceutical
- Automotive
- Electronic
- All industries which needs air quality is $-40\text{ }^{\circ}\text{C}$ dew point or optionally $-70\text{ }^{\circ}\text{C}$ dew point

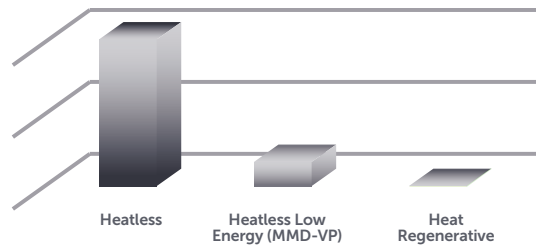
Advantages

- **High-Quality Dry Air according to Standards**
 - Includes pre and post air line filtration
 - Dew point in Class 1 and Class 2 quality in accordance with ISO8573.1
 - Suitable for all industrial applications
 - $-40\text{ }^{\circ}\text{C}$ dew point can be achieved (optional $-70\text{ }^{\circ}\text{C}$)
- **Modular Design**
 - It has a lightweight and compact design compared to traditional dryers
- **Low Energy Heatless Technology**
 - 13% more air can be usable due to new vacuum technology
 - Energy consumption can be lower 60% compared to the heatless dryers and 40% lower energy consumption against heat regenerative dryer
- **Lower Total Cost of Ownership**
 - Low operation costs
 - Longer lifetime of parts and shorter maintenance times

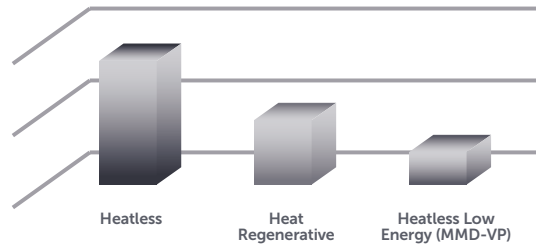




Dry Compressed Air Loss



Power Consumption



Features

• Standard Properties

- Corrosion protected aluminum construction
- Lightweight with a compact design
- High-efficiency regeneration due to the vacuum pump addition
- High crush strength adsorption material
- User-friendly controller
- Easy installation and maintenance

• Optional Properties

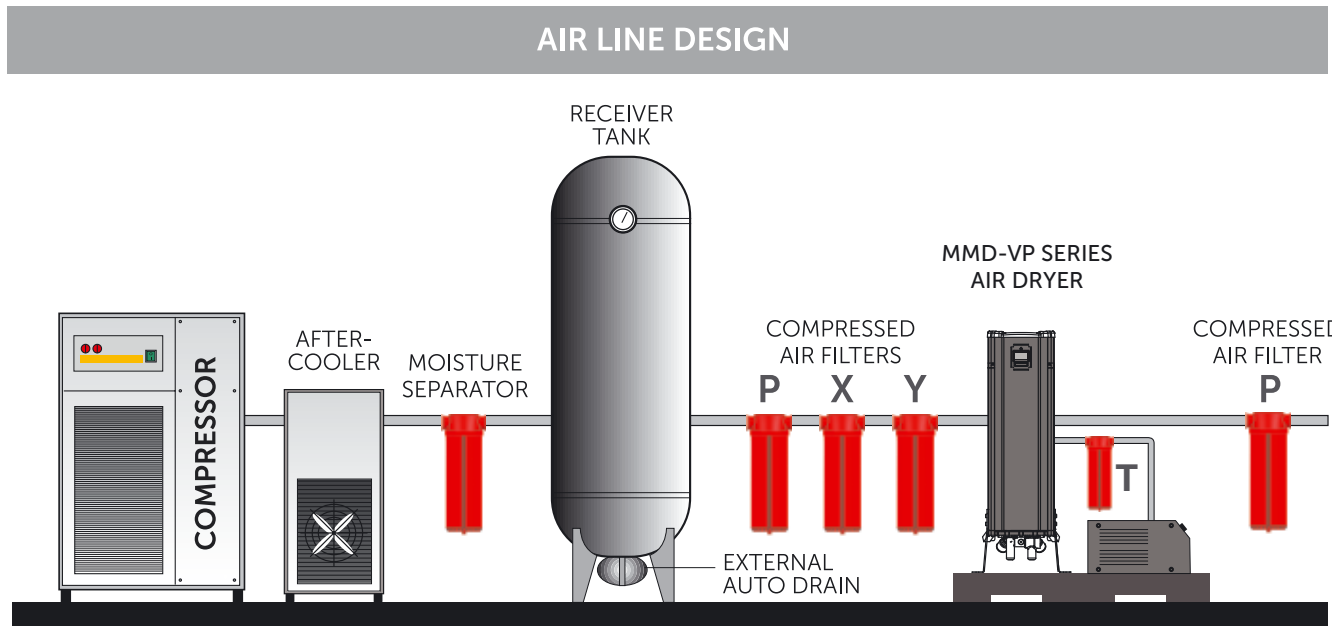
- PLC touch screen monitoring and controller
- Dew point sensor

Working Principle

In that MMD-VP system, two towers allow for continuous adsorption of water vapor from compressed air by using the hygroscopic desiccant with high crush strength and a high surface/ volume ratio. Firstly, pre-filtered compressed air flows into one of the towers. In that tower, water is held at high pressure. After the adsorbent has been saturated. Then, the adsorption of water vapor is switch over to the other tank and the second tank starts to adsorption. Meanwhile, the regeneration process started in the first tank by depressurizing the tower without the use of heat.

The wet bed is dried by a small portion of dry air from the outlet at near atmospheric pressure and with help of a vacuum pump. The output of the dried air efficiency is increased by using the vacuum pump. Just only 2% of dried air need to be used for the regeneration process of dried air. After the regeneration process will be finished and the adsorption process will be taken over in the first tank again. With that cycle -40°C (-70°C optional) dew point can be achieved continuously.

Working Principle



Technical Specifications

Model	Flow Rate (m³/h)	Vacuum Pump (kW)	Connection Size	Voltage	Max. Working Pressure (bar)	T Filter Model
MMD-VP-60	100	1.1	1 1/2"	400/3/50	16	GON-150 T
MMD-VP-75	130	1.1	1 1/2"	400/3/50	16	GON-150 T
MMD-VP-100	170	1.25	1 1/2"	400/3/50	16	GON-150 T
MMD-VP-120	200	2.2	1 1/2"	400/3/50	16	GON-150 T
MMD-VP-180	300	2.2	1 1/2"	400/3/50	16	GON-150 T
MMD-VP-240	400	2.2	1 1/2"	400/3/50	16	GON-150 T
MMD-VP-340	575	3	2"	400/3/50	16	GON-150 T
MMD-VP-400	680	3	2"	400/3/50	16	GON-150 T
MMD-VP-500	850	4	2"	400/3/50	16	GON-300 T
MMD-VP-590	1000	4	2"	400/3/50	16	GON-300 T
MMD-VP-735	1250	5.5	3"	400/3/50	16	GON-300 T

Correction Factor for MMD-VP Series

Inlet Temperature (°C)	F1	Pressure (bar)	F2
20	1	4.5	0.69
25	1	5	0.75
30	1	6	0.88
35	1	7	1
40	0.8	8	1.12
45	0.73	9	1.25
50	0.59	10	1.25
-	-	11	1.5
-	-	12	1.62
-	-	13	1.74
-	-	14	1.87
-	-	15	1.99
-	-	16	2.11

To determine the correct model, dryer flow rate should be divided by multiplication of the related F1 and F2 values.

$$\text{Correct Model} = (\text{Dryer Flow Rate}) / [(F1) \cdot (F2)]$$

Example for Choosing the Correct Dryer:

If a compressor delivers 400 m³/h at 6 bar and the inlet temperature is 40°C. Please choose your dryer as follows;

$$400 / (0.88 \cdot 0.8) = 568 \text{ m}^3/\text{h}$$

So, the correct dryer for this application is MMD-VP 340.

Mikropor MDA Heatless Desiccant Air Dryers provide constant -40°C (-70°C Optional) pressure dew point. These dryers are designed to supply clean and very dry compressed air for critical applications. Pre-filters and after-filters are standard on all Mikropor Heatless Air Dryers to keep the air stream clean and maintain the integrity of the desiccant medium. A very reliable electronic controller is utilised so the dryer operates perfectly through its service life. MDA Heatless Desiccant Dryers are equipped with special valves and high quality desiccants in order to assure performance and provide the lowest pressure drops available in the market.



Principle of Operation

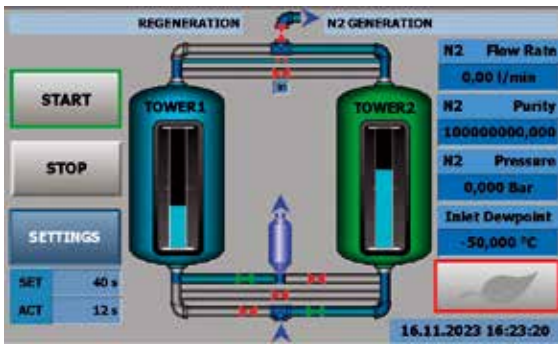
The twin tower design allows for continuous adsorption of water vapor from compressed air by using the hygroscopic desiccant with high crush strength and a high surface/volume ratio. Drying is accomplished by passing compressed air through one desiccant bed adsorbing moisture while the other is being simultaneously regenerated with the expanded purge air.

Regeneration of desiccant is accomplished without the use of heat. The wet bed is dried by diverting a small portion of the super-dry air from the outlet at near atmospheric pressure. The purge flow rate is adjustable to suit the specific outlet conditions (desired dew point). The super dry air flows in a counter direction through the wet bed, sweeping all the water vapor previously absorbed by the desiccant. MDA ensures pressure equalization in the twin towers prior to switching.

This prevents line surge and minimizes desiccant attrition. The tower being reactivated will be gradually re-pressurized at the end of its reactivation cycle before switch over takes place. Purge flow and de-pressurization are in downward direction, counter to the drying air flow.

This saves ENERGY and helps the world become more "GREEN"





HMI Touch Screen PLC



Mini PLC

PLC is Standard

The standard controller of the series is Mini PLC with capable of displaying PSA working parameters. The touch screen HMI, as optional controller, is capable of displaying the cycles as well as the valves as they operate in real-time. This is also capable of showing dew points. User-friendly multi-lingual HMI helps the end users understand the system's operation and identify any issues easily.

Correction Factor for MDA Series

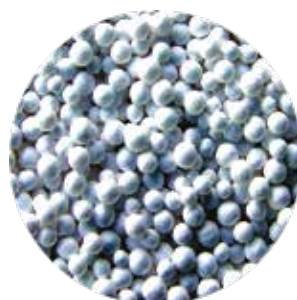
Pressure (bar)	F1	Inlet Temp. (°C)	F2
4.5	0.69	20	1
5	0.75	25	1
6	0.88	30	1
7	1	35	1
8	1.12	40	0.80
9	1.25	45	0.73
10	1.37	50	0.59

All desiccant dryers are designed according to Pneurop conditions as per ISO 7183.



Ordering

If a compressor delivers 850 m³/h at 9 bar pressure and 45°C inlet temperatures please choose your dryer as follows; $850/1.25/0.73 = 931 \text{ m}^3/\text{h}$ the correct dryer for this is MDA1000



Activated Alumina

In order to achieve consistent dew point, Mikropor uses a mixture of adsorption media in its heatless range of desiccant dryers. Activated Alumina, Molecular Sieve and Silica Gel are used in varying ratios depending on the application.

Technical Specifications

Model	Connection Size	Inlet Flow Rate		Voltage	Max. Working Pressure (bar)	Pressure Drop (mbar)	Total Weight (Packed) (kg)	Activated Alumina (kg)	Dimensions (mm)		
		(m ³ /h)	(cfm)						Width	Length	Height
MDA 130	1"	130	80	230/1/50-60	10	≤130	160	40	600	814	1312
MDA 185	1"	185	100	230/1/50-60	10	≤130	180	54	600	808	1566
MDA 250	1"	250	150	230/1/50-60	10	≤130	200	75	760	772	1580
MDA 300	1 1/2"	300	200	230/1/50-60	10	≤130	250	100	690	900	1558
MDA 360	1 1/2"	360	215	230/1/50-60	10	≤130	250	100	690	900	1558
MDA 440	1 1/2"	440	250	230/1/50-60	10	≤130	340	1250	698	900	1759
MDA 575	1 1/2"	575	300	230/1/50-60	10	≤130	500	151	680	900	1991
MDA 680	2"	680	400	230/1/50-60	10	≤130	535	202	680	960	2216
MDA 850	2"	850	500	230/1/50-60	10	≤130	750	264	857	1016	2277
MDA 1000	2"	1000	600	230/1/50-60	10	≤130	755	357	1010	1075	2386
MDA 1250	DN80/PN16	1250	700	230/1/50-60	10	≤130	1000	404	1100	1294	2413
MDA 1500	DN80/PN16	1500	800	230/1/50-60	10	≤130	1050	454	1010	1300	2547
MDA 1800	DN80/PN16	1800	1000	230/1/50-60	10	≤130	1215	566	1110	1513	2479
MDA 2200	DN80/PN16	2200	1250	230/1/50-60	10	≤130	1550	708	1110	1460	2793
MDA 2700	DN80/PN16	2700	1500	230/1/50-60	10	≤130	1890	852	1252	1533	2831
MDA 3200	DN100/PN16	3200	1750	230/1/50-60	10	≤130	2240	954	1212	1653	3054
MDA 3600	DN100/PN16	3600	2000	230/1/50-60	10	≤130	2330	1070	1210	1653	3268
MDA 4400	DN100/PN16	4400	2500	230/1/50-60	10	≤130	3000	1436	1535	1905	2910
MDA 5000	DN150/PN16	5000	3000	230/1/50-60	10	≤130	3180	1670	1714	1843	3382
MDA 6300	DN150/PN16	6300	4000	230/1/50-60	10	≤130	3450	2016	1693	2114	3328
MDA 7200	DN150/PN16	7200	4500	230/1/50-60	10	≤130	3600	2446	1795	2518	3047
MDA 8800	DN150/PN16	8800	5000	230/1/50-60	10	≤130	3850	2906	1795	2518	3341
MDA 10800	DN200/PN16	10800	6000	230/1/50-60	10	≤130	4200	3354	1875	2583	3747
MDA 12500	DN200/PN16	12500	7360	230/1/50-60	10	≤130	6470	3894	1935	2545	4175

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO7183.

Efficiency Rating	X Pre Filter	Y Pre Filter	P After Filter
		1 micron particle removal and 0.5 mg/m ³ oil removal	0.01 micron particle removal and 0.1 mg/m ³ oil removal

Pressure Dew Point	Nominal Inlet Temperature	Nominal Working Pressure	Maximum Inlet Temperature	Maximum Working Pressure	Maximum Ambient Temperature
-40°C / -70°C (opt)	35°C	7 bar	50°C	10 bar	50°C

*For special requirements please contact the Technical Teams.

A centrifugal blower and high efficiency heater eliminate the use of valuable compressed air for desiccant regeneration. The completely automatic drying system uses blower to pull ambient air and pass it through the heater. This hot air stream flows opposite to drying flow direction. Hot air above 200°C regenerates the moisture inside desiccant bed and strips it completely of all moisture. The advanced control system monitors the dew point and adjusts the heating/regeneration accordingly thereby providing valuable energy savings.



- Dew point monitoring and control
- Computer Control-Display Status
- Display Alarms-Display Pressure
- Remote Start/Stop-Low Pressure Alarm
- Minimum pressure monitoring valve
- High pressure switches and alarms
- Externally heated or heatless dryer functions integrated to the MBP

Correction Factor for MBP Series

Pressure (bar)	F1	Inlet Temp. (°C)	F2
4.5	0.69	20	1
5	0.75	25	1
6	0.88	30	1
7	1	35	1
8	1.12	40	0.80
9	1.25	45	0.73
10	1.37	-	-



Technical Specifications

Model	Capacity (m ³ /h)	Connection Size	Max. Working Pressure (bar)	Pressure Drop (mbar)	Voltage	Average Power (kw)	Fuse Amp.	Activated Alumina (kg)	Dimensions (mm)		
									Width	Length	Height
MBP 850	850	2"	10	≤130	400/3/50	10.49	36	264	1290	1180	2299
MBP 1000	1000	2"	10	≤130	400/3/50	11.28	36	357	1200	1310	2415
MBP 1250	1250	DN80	10	≤130	400/3/50	10.83	50	404	1610	1270	2468
MBP 1500	1500	DN80	10	≤130	400/3/50	12.14	50	454	1610	1270	2563
MBP 1800	1800	DN80	10	≤130	400/3/50	15.21	65	566	1563	1515	2479
MBP 2200	2200	DN80	10	≤130	400/3/50	19.31	70	708	1563	1455	2789
MBP 2700	2700	DN80	10	≤130	400/3/50	26.06	87	852	1615	1514	2836
MBP 3200	3200	DN100	10	≤130	400/3/50	25.04	87	954	1710	1660	3054
MBP 3600	3600	DN100	10	≤130	400/3/50	33.90	121	1070	1710	1660	3268
MBP 4400	4400	DN100	10	≤130	400/3/50	37.84	121	1436	1975	2492	2910
MBP 5000	5000	DN125	10	≤130	400/3/50	46.25	136	1670	2045	2560	3382
MBP 6300	6300	DN150	10	≤130	400/3/50	62.29	170	2016	2090	2963	3328
MBP 7200	7200	DN150	10	≤130	400/3/50	69.38	170	2446	2020	3363	3047
MBP 8800	8800	DN150	10	≤130	400/3/50	75.15	250	2906	2020	3363	3341
MBP 10800	10800	DN200	10	≤130	400/3/50	94.60	280	3354	2492	3481	3765

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO7183.

Pressure Dew Point	Nominal Inlet Temp.	Nominal Working Pressure	Max. Inlet Temp.	Max. Working Pressure	Max. Ambient Temp.
-40°C	35°C	7 bar	45°C	10 bar	40°C

-70°C (optional)

Externally heated compressed air dryers are highly advantageous for high-performance dry air production. Since dry air is used in the regeneration process at a much lower rate (~6%) than in heatless dryers, energy consumption is optimized. In this way, production and operating costs are reduced. Thanks to high strength and long-life components and high-engineered design, the pressure drop is kept at a minimum level. However, it increases system efficiency. The advanced controller helps to optimize the dryer's performance and provides instant display and operation. They are available in different capacities, allowing them to adapt to various industrial applications. In addition, their low energy consumption makes them a sustainable option. It performs high performance even in applications with critical levels such as $-40\text{ }^{\circ}\text{C}$ dew point and performs drying efficiently. Externally heated compressed air dryers are ideal systems for industrial applications requiring energy efficiency, low production costs, and high performance.



Working Principle

Externally heated compressed air dryers are systems based on the PSA operating principle, using an external heater to dry the compressed air. The working principle of these dryers can be explained as follows respectively:

- 1. Drying of Compressed Air:** During the drying process, the compressed air enters the active regeneration tower where it is dried by the adsorption method. The adsorbent in the tanks absorbs the moisture in the air and the compressed air is dehumidified and dried to $-40\text{ }^{\circ}\text{C}$ dewpoint levels.
- 2. Regeneration:** After the adsorbent in the drying tower is saturated with moisture, it needs to be renewed (regeneration). For this process, the towers are switched between the towers, while the drying tower switches to regeneration, the other tower in regeneration switches to drying. In the regeneration process of the externally heated dryers, the compressed air is heated using an external heater, and the regeneration process is started.
- 3. Cooling:** The heated tank is cooled by passing compressed dry air and the tank is ready for the next process again. This cycle continues throughout the production.
- 4. Tower Change and Continuous Operation:** After the regeneration process is completed, the towers are switched again. In this way, a continuous cycle is provided between the two towers, thus achieving uninterrupted dry air flow.

Advantages

High Energy Efficiency: In externally heated systems, on average less than 6% less compressed dry air is used, as the air used for regeneration is heated. This results in higher energy savings and lower operating costs for externally heated dryers than heatless dryers.

Low Pressure Drop: During regeneration processes, the pressure drop is kept to a minimum thanks to the optimized and tested design.

Instant PSA Monitoring with Advanced Controller System: Advanced controller system optimizes PSA performance and provides management with instant monitoring.

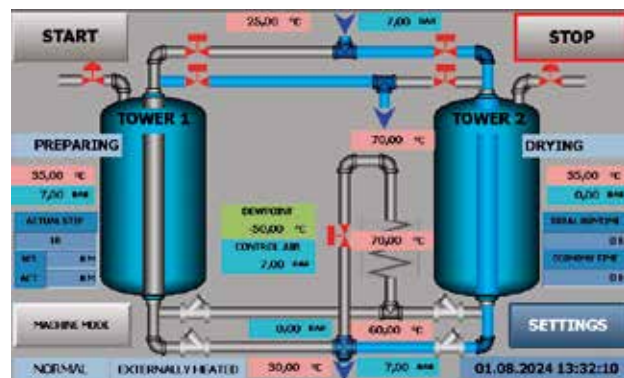
Flexible Use Capacity: Flow rate performance is available in various capacities (850 Nm³/h (500 scfm)-10800 Nm³/h (6000 scfm)), thus adapting to different application needs.

Long Life and Durable Components: Durable stainless steel components designed for high-temperature applications ensure long life and reliability.

High Performance in Critical Applications: Provides high performance in a variety of applications at critical levels, such as -40 °C dew point, thus virtually eliminating moisture in the system.

Advanced Controller System

HMI touch screen PLC system is used as a standard controller system for MEHD Externally Heated Dryers. Instant display and control of PSA parameters and production performance can be provided with high reliability.



HMI Touch Screen PLC



Technical Data

Model	Capacity	
	(m ³ /h)	(cfm)
MEHD-500	850	500
MEHD-600	1000	600
MEHD-800	1500	800
MEHD-1000	1800	1000
MEHD-1250	2200	1250
MEHD-1500	2700	1500
MEHD-1800	3200	1800
MEHD-2000	3600	2000
MEHD-2500	4400	2500
MEHD-3000	5000	3000
MEHD-4000	7200	4000
MEHD-5000	8800	5000
MEHD-6000	10800	6000

* The capacity flow values given are based on a pressure of 7 barg and atmospheric air suction reference conditions of 20 °C and 1 bar according to ISO7183 standard.

Performance Data		
Max. Working Pressure (bar)	Pressure Drop (mbar)	Voltage
10	≤ 130	460 V/3 Ph/60 Hz
		400 V/3 Ph/50 Hz

Mikropor MHOC Series Compressed Air Dryers Mikropor MHOC Series Heat of Compression Air Dryer is energy-efficient by using the heat generated in the oil-free compressors and without any heaters or blowers, zero-purge, pressure swing adsorption (PSA) dryer engineered to remove water vapor from compressed air with the twin tower engineered design. Specifically designed for compatibility with oil-free compressors, this dryer ensures optimal performance. It offers compressed dry air production with the highest energy efficiency in the dryer technology. It provides the compressed dry air production required for the compressed air system with the lowest energy costs thanks to zero-purge (no purge air).

There is a regeneration option with compressed air to ensure dew point stabilization. The MHOC dryer's design allows it to achieve a -40°C (-40°F) dew point with stripping and cooling cycles. It has also a design to minimize pressure drop.

MHOC Series compressed air dryers eliminate the need for users to use any heater or provide the desired performance with an additional heater at way down kW values. In this way, it stands out as the most economical and environmentally friendly solution for compressed air lines and equipment.



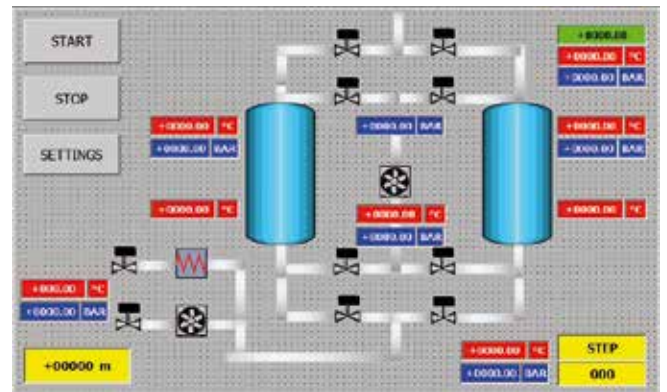
The drying process is now greener for everyone!

Features & Advantages

- Highest energy-saving dryer technology
- No loss of compressed air at normal mode
- Max. 2% loss of compressed air at stripping mode
- Easy to install and user-friendly
- High-efficient production
- -40°C (-40°F) dew point by using generated heat from the compressor
- No external electric regeneration heating requirement
- Rapid return on investment (ROI)
- Monitoring of operating modes instantly with an advanced controller system
- Minimized pressure drop

**Advanced Standard PLC
Controller System**

HMI Touch Screen PLC is the standard controller system for MHOC Desiccant Dryers. Instant monitoring and controlling of PSA parameters can be provided and optimal performance can be checked by this controller system with high reliability.



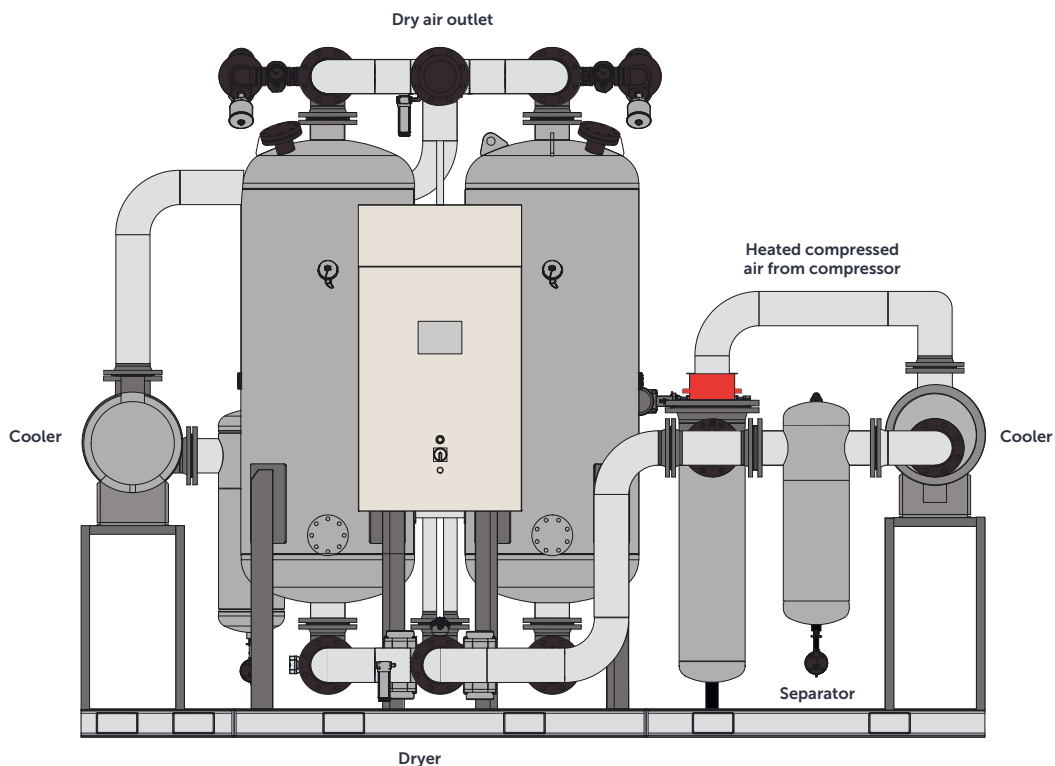
Working Principle

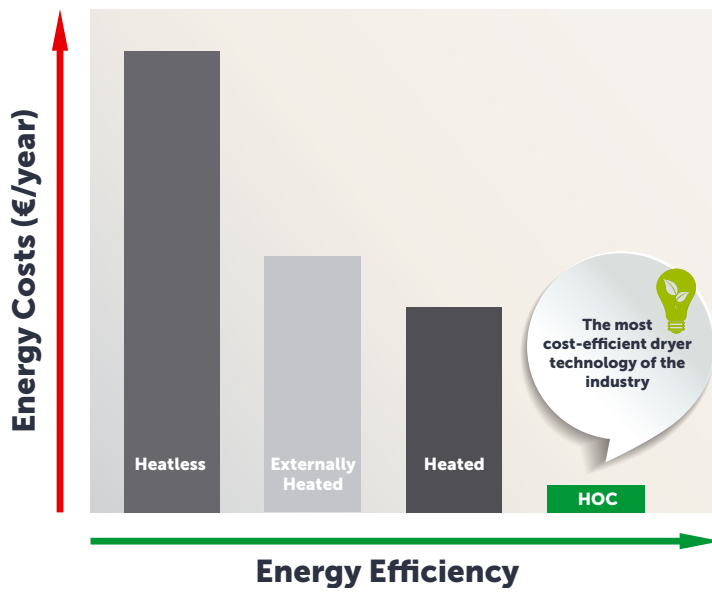
Mikropor HOC Series Compressed Air Dryers offer the opportunity to reduce energy costs with highly efficient compressed dry air production. Thanks to zero-purge, it provides the production of compressed dry air required for the compressed air system with very low energy costs.

In order to ensure dew point stabilization, there is a regeneration method with high temperature compressed air coming out of the compressor. The design of MHOC Dryers provides -40°C/-40°F dew point stabilization with high performance option (stripping) and cooling cycles.

High temperature compressed air coming out of the compressor enters the MHOC dryer and is directed to the regeneration tower. The compressor aftercooler outlet is used for the cooling process and the regeneration is completed relatively. During the regeneration, compressed air is also transferred to the dry air production tank to reach the -40°C/-40°F dew point without loss.

MHOC Dryer





Technical Specifications

Model	Capacity	
	(m ³ /h)	(cfm)
MHOC 575	575	340
MHOC 680	680	400
MHOC 850	850	500
MHOC 1000	1000	590
MHOC 1250	1250	735
MHOC 1500	1500	885
MHOC 1800	1800	1060
MHOC 2200	2200	1295
MHOC 2700	2700	1590
MHOC 3200	3200	1885
MHOC 3600	3600	2120
MHOC 4400	4400	2590
MHOC 5000	5000	2940
MHOC 6300	6300	3705
MHOC 7200	7200	4235
MHOC 8800	8800	5180
MHOC 10800	10800	6350

Performance Data		
Max. Working Pressure (bar)	Pressure Drop (mbar)	Voltage
10	≤130	400V/3Ph/50Hz

* Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction per ISO7183.

Usage of compressed dryer air is highly important for sustaining reliable, cost-effective, and trouble-free working conditions in railway systems.

In railway systems compressors generally stayed underneath the train. Naturally, they intake the air from the surrounding which contains dust, water, and oil as a contaminant. When the air is compressed, the contaminants also stay inside the compressed air and with subsequent cooling water condensate in the airline system. That liquid form of water and dust particles coming from the surrounding area, mixed with lubricating oil of compressor or the oil which comes from the surrounding air and create sludgy acidic condensate. That condensate follows the airline and directly goes through the pneumatic systems like pneumatic train doors, brakes, horns, and pantographs. The importance of the dryer and filter become predominated at that point. Without these drying and filtration procedures create malfunctioning of the system followed by unwanted maintenance procedures.

Mikropor overcomes these problems with the new engineered Mikropor Railway Dryer - MRD Series. Modular type desiccant air dryer supply -40°C dew point compressed air with a help of high-efficiency pre-filtration and dust filtration system after the adsorption chambers. At the very beginning, the water separator removes excess liquified water from the compressed air. The remaining water, oil, and particles inside the air will be removed by the relative pre-filter. With these pre-filters particles can down to 1 micron and oil removed down to 0.01-micron level.

After the filtration, compressed air enters one of the modules which is filled with adsorbent granules. These special granules absorb the water and water vapor in the compressed air and help to supply -40 °C dew point dry compressed air to the system. After a while, these granules are getting saturated, and it requires regeneration. At that point drying procedure switch to the other adsorbent chamber and the first chamber regenerates the granules using the pressure swing adsorption method (PSA). With continuing this cycle continuous dried compressed air is supplied to the system.



Modular type desiccant air dryer: Supply -40°C dew point compressed dry air with PSA method.



Most of the liquid water, oil and dust contaminations are removed with pre-filtration system.

Application Areas

MRD System is applicable to use in metros, high-speed trains, regional & commuter trains, locomotives, etc. It could be used in the system like;

- Braking System
- Pneumatically Operated Doors
- Pantograph Operation
- Track Cleaning
- Maintenance

Advantages of MRD Series

- High-efficiency air treatment system with pre-filtration for bulk water, oil and particles
- Compact, lightweight modular design
- Low noise emission
- Wide operating temperature range
- Immediately ready for operation even in cold conditions
- It could be used oil-free compressors and also oil-lubricated compressor

MRD Series - Technical Specifications

Nominal Air Flow Rate	0.75 Nm ³ /min	Heater	24 W
Max. Operating Pressure	10 bars	Supply Voltage	24 VDC
Min. Operating Pressure	2 bars	Connection Size	1/2"
Max. Working Temperature	50°C @10 bar	X-Y-P Filters- GO	GO100
Min. Working Temperature	-40°C	Water Separator-GWS	G100WS

Reference Conditions

Inlet Compressed Air Pressure (bar)	Inlet Compressed Air Temp. (°C)	Ambient Temp. (°C)
7 bar g	35°C	25°C

Correction Factors for MRD Series

Inlet Temperature (°C)	F1	Pressure (bar)	F2
20	1	4.5	0.69
25	1	5	0.75
30	1	6	0.88
35	1	7	1
40	0.80	8	1.12
45	0.73	9	1.25
50	0.59	10	1.25
-	-	11	1.50
-	-	12	1.62
-	-	13	1.74
-	-	14	1.87
-	-	15	1.99
-	-	16	2.11



04

GAS GENERATION SYSTEMS

MNG-PRO SERIES PSA NITROGEN GENERATORS	86
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MDX SERIES NITROGEN PURIFIER SYSTEMS	98
MGD SERIES GAS DRYER SYSTEM	100
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GAS GENERATION
SYSTEMS

▶ MNG-PRO SERIES PSA NITROGEN GENERATORS

Pressure Swing Adsorption (PSA) type Nitrogen Generation System that is used to separate and enrich nitrogen from oxygen employs CMS (Carbon Molecular Sieve) as adsorbent.

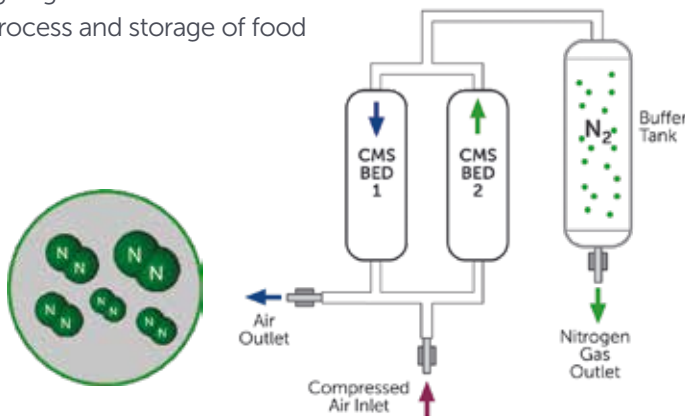
CMS adsorbs oxygen and water vapor molecules under a certain pressure while allowing nitrogen to pass through in the line.

The Nitrogen Generator is a Two-Bed Adsorber System

The Nitrogen Generator consists of two adsorber vessels filled with CMS. Clean and dry air is directed to one of the adsorber beds where oxygen and water vapor are adsorbed faster than nitrogen in the pore structure of the CMS, resulting in increased nitrogen purity of the product gas stream to the desired level (95-99.999% as required by customer).

Applications

- Electronic industry
- Metal industry
- Chemical industry
- Cleaning process
- Plastic industry
- Charge nitrogen gas in tires
- Production process and storage of food



FEATURES

Standard

- Nitrogen Tanks
- Silencer
- Mini PLC
- Tank Manometers
- Pressure Transmitter
- ECO Mode
- T Filter
- Piston Valves
- Valve Control Regulator

Optional

- Dew Point Sensor Kit
- Flowmeter Kit
- Carbolescer
- Oxygen Analyzer Kit
- Proportional Valve
- 3-Way By-Pass Valve Kit
- HMI Color Touch Screen PLC
- Buffer Tank
- Oil Indicator

Advantages

- Simple structure, compact design, full automated operation
- Replaces manifold usage (see pic. 1)
- PLC Controllers for monitoring and controlling the complete system (see pics. 2 & 3)
- PLC Screen for monitoring and visualizing the progress
- Rapid start-up and safety system
- Superior silencer design gives low noise levels during depressurization and purge
- Durable piston valves for long-life operation (see pic. 6)
- On-demand production with low costs
- High performance
 - *The purity and capacity of nitrogen gas is designed to meet customer requirements (Nitrogen Purity 95%~99.999% is available)
- Minimum maintenance cost
- Lower air-to-nitrogen (A/N) ratios and energy consumption
- Superior air distribution for the high-quality nitrogen gas production
- High-sensitive sensor technologies (see pic. 4)
- Effective Integrated Filtration (see pic. 5)



Replaces Manifold Usage - Pic. 1



Touch Screen PLC - Pic. 2



Mini PLC - Pic. 3



Dew Point Sensor - Pic. 4



Air Filter - Pic. 5



Long Life Piston Valve - Pic. 6

Reference Conditions

Pressure Drop	Inlet Compressed Air Pressure	Outlet Nitrogen Pressure	Ambient Temperature	Inlet Air Dew Point
1.5 bar	7.5 bar	6 bar	25 °C	≤ 3 °C

Technical Specifications

Mikropor Model	Air Demand @ Following Purity Level (m ³ /h)									
	95%	97%	98%	99%	99.50%	99.90%	99.95%	99.99%	99.995%	99.999%
MNG-PRO-140	51.3	48.1	46.7	37.1	34.3	30.7	29.9	27.2	22.8	22.5
MNG-PRO-185	68.5	64.3	62.3	49.5	45.9	41.0	40.0	36.3	30.5	30.0
MNG-PRO-225	83.9	78.7	76.3	60.6	56.1	50.2	48.9	44.4	37.3	36.7
MNG-PRO-360	133.4	125.1	121.4	96.4	89.3	79.8	77.8	70.7	59.4	58.4
MNG-PRO-475	176.6	165.6	160.6	127.6	118.2	105.6	103.0	93.5	78.5	77.3
MNG-PRO-640	238.7	223.9	217.1	172.5	159.7	142.8	139.2	126.4	106.2	104.5
MNG-PRO-700	273.4	256.4	248.7	197.6	183.0	163.5	159.4	144.8	121.6	119.7
MNG-PRO-810	303.6	284.8	276.2	219.4	203.2	181.6	177.0	160.8	135.1	133.0
MNG-PRO-1065	397.4	372.7	361.5	287.2	266.0	237.7	231.7	210.4	176.8	174.1
MNG-PRO-1300	486.1	455.9	442.2	351.3	325.3	290.8	283.5	257.4	216.2	212.9
MNG-PRO-1580	591.0	554.3	537.6	427.1	395.5	353.5	344.6	313.0	262.9	258.8
MNG-PRO-1750	651.9	611.4	593.1	471.1	436.3	390.0	380.1	345.2	290.0	285.5
MNG-PRO-1940	722.4	677.5	657.2	522.0	483.5	432.1	421.2	382.5	321.3	316.4
MNG-PRO-2610	976.7	916.1	888.6	705.8	653.7	584.2	569.5	517.2	434.5	427.8
MNG-PRO-3050	1139.1	1068.3	1036.2	823.2	762.2	681.2	664.6	603.3	506.8	499.1
MNG-PRO-3660	1365.5	1280.7	1242.2	986.8	913.8	816.8	796.2	723.1	607.4	598.1
MNG-PRO-4500	1684.2	1579.6	1532.2	1217.1	1127.2	1007.4	982.1	891.9	749.2	737.7
MNG-PRO-5290	1973.9	1851.2	1795.7	1426.4	1321.0	1180.7	1151.0	1045.3	878.0	864.5
MNG-PRO-6100	2276.1	2134.7	2070.6	1644.9	1523.3	1361.5	1327.2	1205.3	1012.5	996.9
MNG-PRO-7340	2740.0	2569.8	2492.7	1980.1	1833.7	1638.9	1597.7	1451.0	1219.1	1200.8
MNG-PRO-9060	3382.1	3172.0	3076.8	2444.1	2263.4	2023.0	1972.1	1791.0	1504.4	1481.3
MNG-PRO-10780	4023.5	3773.6	3660.3	2907.6	2692.7	2406.7	2346.1	2130.6	1789.7	1762.2
MNG-PRO-12100	4519.4	4238.3	4111.1	3265.7	3024.3	2703.1	2635.1	2393.1	2010.2	1979.3
MNG-PRO-14780	5519.5	5176.6	5022.2	3988.7	3693.8	3301.8	3218.4	2922.8	2455.2	2417.4

Technical Specifications

Mikropor Model	Free Nitrogen Delivery @ Following Purity Level (m ³ /h)									
	95%	97%	98%	99%	99.50%	99.90%	99.95%	99.99%	99.995%	99.999%
MNG-PRO-140	32.1	26.7	24.6	16.9	13.7	10.6	9.7	5.2	4.1	3.1
MNG-PRO-185	42.8	35.7	32.8	22.5	18.3	14.1	12.9	7.0	5.4	4.1
MNG-PRO-225	52.4	43.7	40.2	27.6	22.5	17.3	15.8	8.5	6.7	5.0
MNG-PRO-360	83.4	69.5	63.9	43.8	35.7	27.5	25.1	13.6	10.6	8.0
MNG-PRO-475	110.4	92.0	84.6	58.0	47.3	36.4	33.2	18.0	14.0	10.6
MNG-PRO-640	149.2	124.4	114.3	78.4	63.9	49.2	44.9	24.3	19.0	14.3
MNG-PRO-700	170.9	142.4	130.9	89.8	73.2	56.4	51.4	27.8	21.7	16.4
MNG-PRO-810	189.8	158.2	145.4	99.7	81.3	62.6	57.1	30.9	24.1	18.2
MNG-PRO-1065	248.4	207.1	190.3	130.5	106.4	82.0	74.7	40.5	31.6	23.8
MNG-PRO-1300	303.8	253.3	232.8	159.7	130.1	100.3	91.4	49.5	38.6	29.2
MNG-PRO-1580	369.4	307.9	283.0	194.1	158.2	121.9	111.2	60.2	46.9	35.5
MNG-PRO-1750	407.5	339.7	312.1	214.1	174.5	134.5	122.6	66.4	51.8	39.1
MNG-PRO-1940	451.5	376.4	345.9	237.3	193.4	149.0	135.9	73.6	57.4	43.3
MNG-PRO-2610	610.5	508.9	467.7	320.8	261.5	201.5	183.7	99.5	77.6	58.6
MNG-PRO-3050	711.9	593.5	545.4	374.2	304.9	234.9	214.4	116.0	90.5	68.4
MNG-PRO-3660	853.4	711.5	653.8	448.5	365.5	281.6	256.8	139.1	108.5	81.9
MNG-PRO-4500	1052.7	877.6	806.4	553.2	450.9	347.4	316.8	171.5	133.8	101.1
MNG-PRO-5290	1233.7	1028.5	945.1	648.4	528.4	407.1	371.3	201.0	156.8	118.4
MNG-PRO-6100	1422.6	1186.0	1089.8	747.7	609.3	469.5	428.1	231.8	180.8	136.6
MNG-PRO-7340	1712.5	1427.7	1311.9	900.0	733.5	565.2	515.4	279.0	217.7	164.5
MNG-PRO-9060	2113.8	1762.2	1619.4	1111.0	905.4	697.6	636.2	344.4	268.6	202.9
MNG-PRO-10780	2514.7	2096.4	1926.5	1321.7	1077.1	829.9	756.8	409.7	319.6	241.4
MNG-PRO-12100	2824.6	2354.6	2163.7	1484.4	1209.7	932.1	850.0	460.2	359.0	271.1
MNG-PRO-14780	3449.7	2875.9	2643.3	1813.0	1477.5	1138.5	1038.2	562.1	438.4	331.2

A/N Ratios for All MNG-PRO Models**

Purities	95%	97%	98%	99%	99.50%	99.90%	99.95%	99.99%	99.995%	99.999%
Air/N₂ Ratio	1.6	1.8	1.9	2.2	2.5	2.9	3.1	5.2	5.6	7.3

** The Air/Nitrogen ratios according to the model and purity are recommended as the value given above.

Technical Specifications

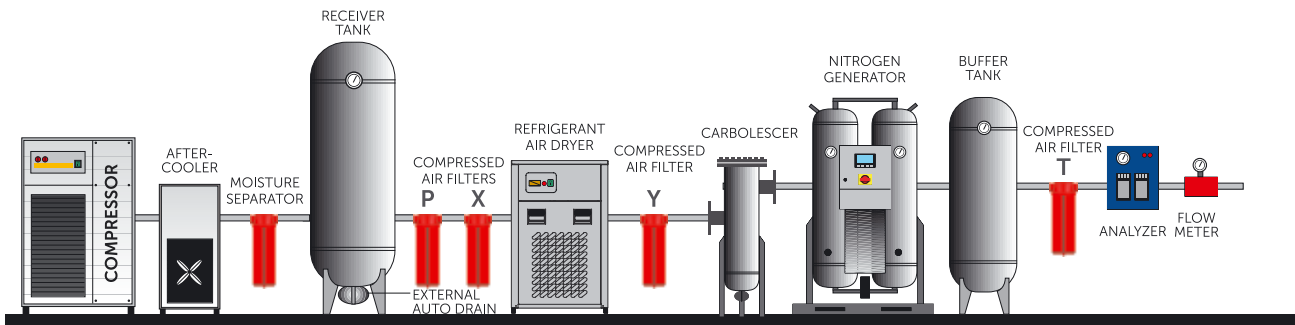
Mikropor Model	RECOMMENDED BUFFER TANK VOLUMES (LITER)									
	95%	97%	98%	99%	99.50%	99.90%	99.95%	99.99%	99.995%	99.999%
MNG-PRO-140	59	50	46	31	25	20	18	10	8	6
MNG-PRO-185	79	66	61	42	34	26	24	13	10	8
MNG-PRO-225	97	81	74	51	42	32	29	16	12	9
MNG-PRO-360	155	129	118	81	66	51	47	25	20	15
MNG-PRO-475	205	170	157	107	88	67	62	33	26	20
MNG-PRO-640	276	230	212	145	118	91	83	45	35	27
MNG-PRO-700	317	264	243	166	136	104	95	52	40	30
MNG-PRO-810	352	293	269	185	151	116	106	57	45	34
MNG-PRO-1065	460	384	353	242	197	152	139	75	58	44
MNG-PRO-1300	563	469	431	296	241	186	169	92	72	54
MNG-PRO-1580	684	571	524	360	293	226	206	112	87	66
MNG-PRO-1750	755	629	578	397	323	249	227	123	96	72
MNG-PRO-1940	837	697	641	440	358	276	252	136	106	80
MNG-PRO-2610	1131	943	867	594	484	373	340	184	144	109
MNG-PRO-3050	1319	1100	1011	693	565	435	397	215	168	127
MNG-PRO-3660	1581	1318	1211	831	677	522	476	258	201	152
MNG-PRO-4500	1950	1626	1494	1025	835	644	587	318	248	187
MNG-PRO-5290	2286	1906	1751	1201	979	754	688	372	291	219
MNG-PRO-6100	2636	2197	2019	1385	1129	870	793	429	335	253
MNG-PRO-7340	3173	2645	2431	1668	1359	1047	955	517	403	305
MNG-PRO-9060	3917	3265	3001	2059	1678	1293	1179	638	498	376
MNG-PRO-10780	4660	3885	3570	2449	1996	1538	1402	759	592	447
MNG-PRO-12100	5234	4363	4009	2751	2242	1727	1575	853	665	502
MNG-PRO-14780	6392	5329	4898	3359	2738	2110	1924	1041	812	614

Correction Factor

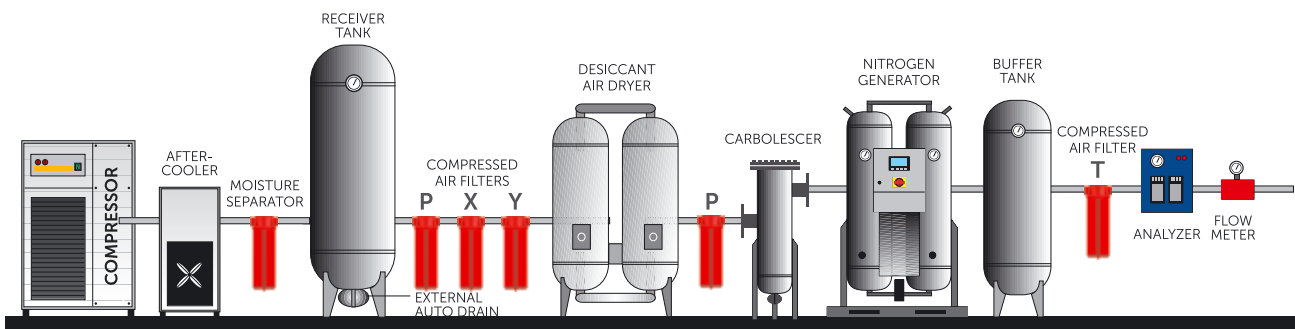
Inlet Pressure (bar)	F1	Ambient Temp. (°C)	F2
5	0.68	5	0.85
5.5	0.73	10	1
6	0.79	15	1
6.5	0.88	20	1
7	0.90	25	1
7.5	1	30	0.91
8	1.04	35	0.82
8.5	1.08	40	0.74
9	1.15	45	0.6

To determine the nitrogen generator model in the reference conditions divide the nitrogen flow rate to the factors mentioned in the correction table.

AIR LINE DESIGN



AIR LINE DESIGN



"Mikropor reserves the right to change the design and/or dimensions and/or weight of his products at any time without any notice or liability."

▶ M-MNG-PRO SERIES PSA MODULAR NITROGEN GENERATORS GAS GENERATION SYSTEMS ◀

Pressure Swing Adsorption (PSA) type Nitrogen Generation System that is used to separate and enrich nitrogen from oxygen employs CMS (Carbon Molecular Sieve) as adsorbent.

CMS adsorbs oxygen and water vapor molecules under a certain pressure while allowing nitrogen to pass through in the line.

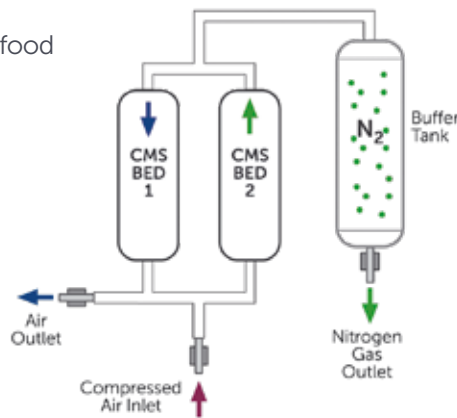
M-MNG-PRO Series is a Modular Adsorber System

The Nitrogen Generator consists of couple of modules filled with CMS. Clean and dry air is directed to adsorber module beds where oxygen and water vapor are adsorbed faster than nitrogen in the pore structure of the CMS, resulting in increased nitrogen purity of the product gas stream to the desired level (95-99.999% as required by customer).



Applications

- Electronic industry
- Metal industry
- Chemical industry
- Cleaning Process
- Plastic industry
- Charge nitrogen gas in tires
- Production process and storage of food



FEATURES

Standard

- Nitrogen Modules
- Silencer
- Mini PLC
- Manometers
- Pressure Transmitter
- ECO Mode
- T Filter
- Piston Valves
- Valve Control Regulator

Optional

- Dew Point Sensor Kit
- Flowmeter Kit
- Carbolescer
- Oxygen Analyzer Kit
- 3-Way By-Pass Valve Kit
- HMI Color Touch Screen PLC
- Buffer Tank
- Oil Indicator
- Proportional Valve

Advantages

- Simple structure, compact design, full automated operation
- Replaces manifold usage (see pic. 1)
- PLC Controllers for monitoring and controlling the complete system (see pics. 2 & 3)
- PLC Screen for monitoring and visualizing the progress
- Rapid start-up and safety system
- Superior silencer design gives low noise levels during depressurization and purge
- Durable piston valves for long-life operation (see pic. 6)
- On-demand production with low costs
- High performance
 - *The purity and capacity of nitrogen gas is designed to meet customer requirements (Nitrogen Purity 95%~99.999% is available)
- Minimum maintenance cost
- Lower air-to-nitrogen (A/N) ratios and energy consumption
- Superior air distribution for the high-quality nitrogen gas production
- High-sensitive sensor technologies (see pic. 4)
- Effective Integrated Filtration (see pic. 5)



Replaces Manifold Usage - Pic. 1



Touch Screen PLC - Pic. 2



Mini PLC - Pic. 3



Dew Point Sensor - Pic. 4



Air Filter - Pic. 5



Long Life Piston Valve - Pic. 6

Reference Conditions

Pressure Drop	Inlet Compressed Air Pressure	Outlet Nitrogen Pressure	Ambient Temperature	Inlet Air Dew Point
1.5 barg	7.5 barg	6 barg	25 °C	≤ 3 °C

Technical Specifications

Mikropor Models	Air Demand @ Following Purity Level (m ³ /h)									
	95%	97%	98%	99%	99.50%	99.90%	99.95%	99.99%	99.995%	99.999%
M-MNG-PRO-20	5.2	5.1	5.0	4.9	4.0	3.9	3.7	3.1	2.6	2.5
M-MNG-PRO-40	8.3	8.2	8.1	8.0	7.9	6.4	6.2	4.9	4.4	4.1
M-MNG-PRO-70	15.3	15.2	15.0	14.7	14.1	11.7	11.5	9.1	9.0	7.5
M-MNG-PRO-123	25.5	25.2	24.5	24.4	24.1	19.5	19.1	15.2	15.0	12.5
M-MNG-PRO-210	44.0	43.9	43.8	42.3	41.8	33.6	33.0	26.1	25.9	21.5
M-MNG-PRO-285	58.7	58.7	58.5	56.4	55.8	44.9	44.0	34.9	34.5	28.8
M-MNG-PRO-340	71.9	71.8	71.6	69.1	68.3	54.9	53.9	42.7	42.3	35.2
M-MNG-PRO-555	114.4	114.3	113.9	109.9	108.7	87.4	85.7	68.0	67.2	56.0
M-MNG-PRO-735	151.3	151.0	150.8	145.4	143.9	115.7	113.4	89.9	89.0	74.1
M-MNG-PRO-990	204.5	204.0	203.8	196.6	194.5	156.4	153.3	121.6	120.3	100.2
M-MNG-PRO-1130	234.3	234.0	233.4	225.2	222.8	179.1	175.6	139.2	137.7	114.7
M-MNG-PRO-1260	260.2	260.0	259.2	250.1	247.4	198.9	195.0	154.6	153.0	127.4
M-MNG-PRO-1650	340.5	340.0	339.3	327.3	323.8	260.3	255.3	202.4	200.2	166.8

Technical Specifications

Mikropor Models	Free Nitrogen Delivery @ Following Purity Level (m ³ /h)									
	95%	97%	98%	99%	99.50%	99.90%	99.95%	99.99%	99.995%	99.999%
M-MNG-PRO-20	3.0	3.0	2.3	2.0	1.4	1.2	1.1	0.5	0.4	0.3
M-MNG-PRO-40	4.9	4.9	3.8	3.2	2.9	1.9	1.8	0.8	0.7	0.5
M-MNG-PRO-70	9.0	9.0	6.9	5.9	5.0	3.6	3.3	1.5	1.4	0.9
M-MNG-PRO-123	15.0	15.0	11.6	9.8	8.6	5.9	5.5	2.6	2.4	1.5
M-MNG-PRO-210	25.9	25.9	19.9	16.9	14.9	10.2	9.4	4.4	4.2	2.6
M-MNG-PRO-285	34.5	34.5	26.6	22.6	19.9	13.6	12.6	5.9	5.6	3.5
M-MNG-PRO-340	42.3	42.3	32.5	27.6	24.4	16.7	15.4	7.2	6.8	4.3
M-MNG-PRO-555	67.3	67.3	51.8	44.0	38.8	26.5	24.5	11.5	10.8	6.8
M-MNG-PRO-735	89.0	89.0	68.5	58.2	51.4	35.1	32.4	15.2	14.4	9.0
M-MNG-PRO-990	120.3	120.3	92.6	78.6	69.5	47.4	43.8	20.6	19.4	12.2
M-MNG-PRO-1130	137.8	137.8	106.1	90.1	79.6	54.3	50.2	23.6	22.2	14.0
M-MNG-PRO-1260	153.0	153.0	117.8	100.0	88.4	60.3	55.7	26.2	24.7	15.5
M-MNG-PRO-1650	200.3	200.3	154.2	130.9	115.6	78.9	72.9	34.3	32.3	20.3

A/N Ratios for All M-MNG-PRO Models**

Purities	95%	97%	98%	99%	99.50%	99.90%	99.95%	99.99%	99.995%	99.999%
Air/N ₂ Ratio	1.7	1.9	2.2	2.5	2.8	3.3	3.5	5.9	6.2	8.2

** The Air/Nitrogen ratios according to the model and degree of purity are recommended as the value given above.

Technical Specifications

Mikropor Models	Recommended Buffer Tank Volume (l)									
	95%	97%	98%	99%	99.50%	99.90%	99.95%	99.99%	99.995%	99.999%
M-MNG-PRO-20	10.0	8.5	7.5	6.0	5.0	4.0	4.0	2.0	2.0	1.0
M-MNG-PRO-40	15.6	14.0	12.0	10.0	10.0	6.0	6.0	4.0	2.0	2.0
M-MNG-PRO-70	30.0	25.5	22.0	19.0	16.0	12.0	10.0	5.0	5.0	4.0
M-MNG-PRO-123	48.0	43.0	37.0	31.0	27.5	19.0	17.5	8.5	7.5	5.0
M-MNG-PRO-210	82.0	73.5	63.5	54.0	47.5	32.5	30.0	14.0	14.0	8.5
M-MNG-PRO-285	110.0	98.0	84.5	72.0	63.5	43.5	40.0	19.0	18.0	12.0
M-MNG-PRO-340	134.0	120.1	103.4	87.8	77.5	52.9	48.9	23.0	21.7	14.0
M-MNG-PRO-555	213.7	191.0	164.5	140.0	123.5	84.0	78.0	37.0	34.5	22.0
M-MNG-PRO-735	283.0	253.0	218.0	185.0	163.0	112.0	103.0	48.5	46.0	29.0
M-MNG-PRO-990	382.0	342.0	294.0	250.0	221.0	151.0	139.0	65.5	62.0	39.0
M-MNG-PRO-1130	438.0	392.0	337.0	286.0	253.0	172.0	160.0	75.0	71.0	44.5
M-MNG-PRO-1260	486.0	435.0	374.0	318.0	281.0	192.0	177.0	83.0	79.0	50.0
M-MNG-PRO-1650	636.0	568.0	490.0	416.0	368.0	251.0	232.0	109.0	103.0	65.0

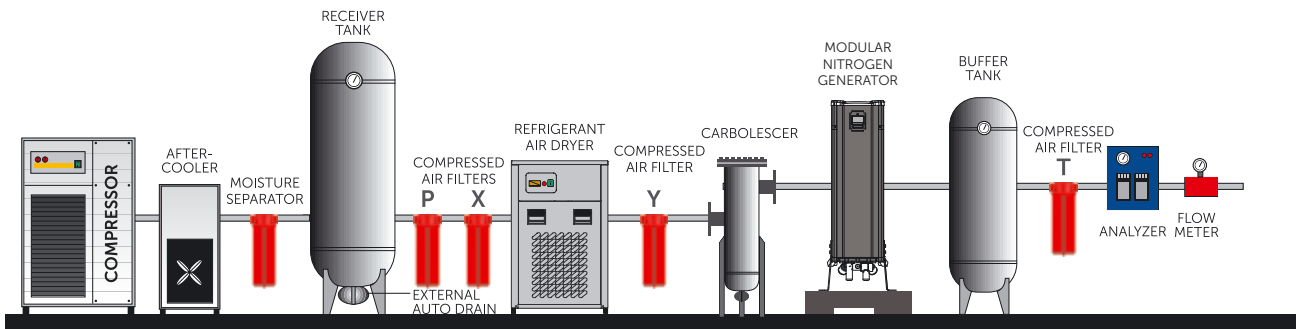
Correction Factor

Inlet Pressure (bar)	F1	Ambient Temp. (°C)	F2
5	0.68	5	0.85
5.5	0.73	10	1
6	0.79	15	1
6.5	0.88	20	1
7	0.90	25	1
7.5	1	30	0.91
8	1.04	35	0.82
8.5	1.08	40	0.74
9	1.15	45	0.6
9.5	1.18	-	-
10	1.2	-	-

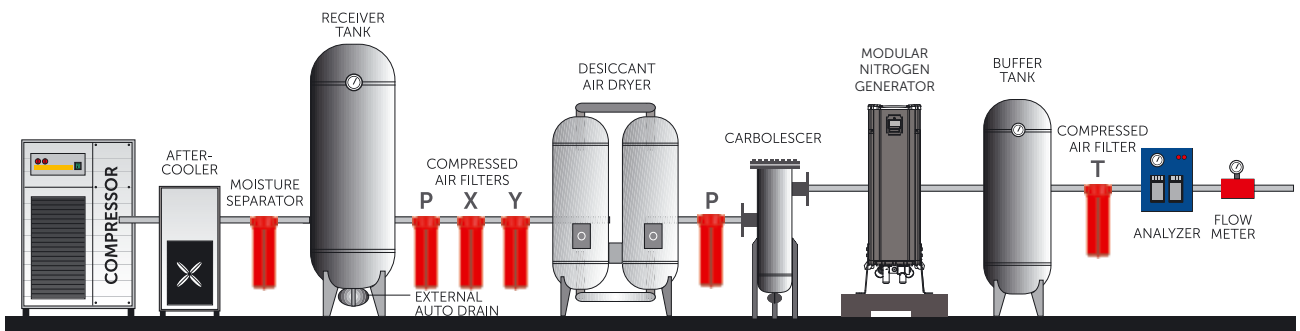
To determine the nitrogen generator model in the reference conditions divide the nitrogen flow rate to the factors mentioned in the correction table.

M-MNG-PRO SERIES PSA MODULAR NITROGEN GENERATORS GAS GENERATION SYSTEMS

AIR LINE DESIGN



AIR LINE DESIGN



"Mikropor reserves the right to change the design and/or dimensions and/or weight of his products at any time without any notice or liability."

Most PSA Nitrogen Generator users require the highest levels of Nitrogen purity by the most cost-effective means possible.

Mikropor's brand new MDX Nitrogen Purifier System offers an extremely economic way to increase Nitrogen purity levels beyond 99.5% or 99.9% all the way up to 99.999% purity.

The MDX range increases Nitrogen purities by utilizing a specially designed catalyst with a large surface area. As a result of the reaction on the catalyst surface, the residual oxygen content is reduced to maximum 10 ppm level.

Mikropor's MDX Nitrogen Purifiers, combined with Mikropor's MNG Nitrogen Generators, utilise a small amount of Hydrogen gas during the reaction process to achieve high levels of Nitrogen purity by avoiding compressed air loss.

The MDX System, in conjunction with MNG Nitrogen Generators, will significantly reduce power consumption and still achieve the highest possible levels of Nitrogen purity.

Working Principle

In comparison to the current applications, Nitrogen produced from a nitrogen generator at 99.5% or 99.9% purity level can be converted to 99.999% by Mikropor's compact design Nitrogen Purifier System which also provides high savings in nitrogen production costs.

The system uses a catalytic reaction, whereby residual Oxygen from the MNG generator is removed from the PSA Nitrogen Generator output by utilising a reaction between the remaining Oxygen and Hydrogen gas to produce a purity of 99.999% Nitrogen. The only by-product of this catalytic reaction is water.

The total cost of hydrogen required for the reaction is very low and provides significant long-term savings.

High purity nitrogen can in fact be produced by utilizing lower capacity air compressors and downstream equipments throughout this newly developed nitrogen purification process.

The reaction increases the Nitrogen temperature. That is why Mikropor's MDX Nitrogen Purifier System has been integrated into a High Temperature Air Dryer combining two products into a single unit to give a complete solution.



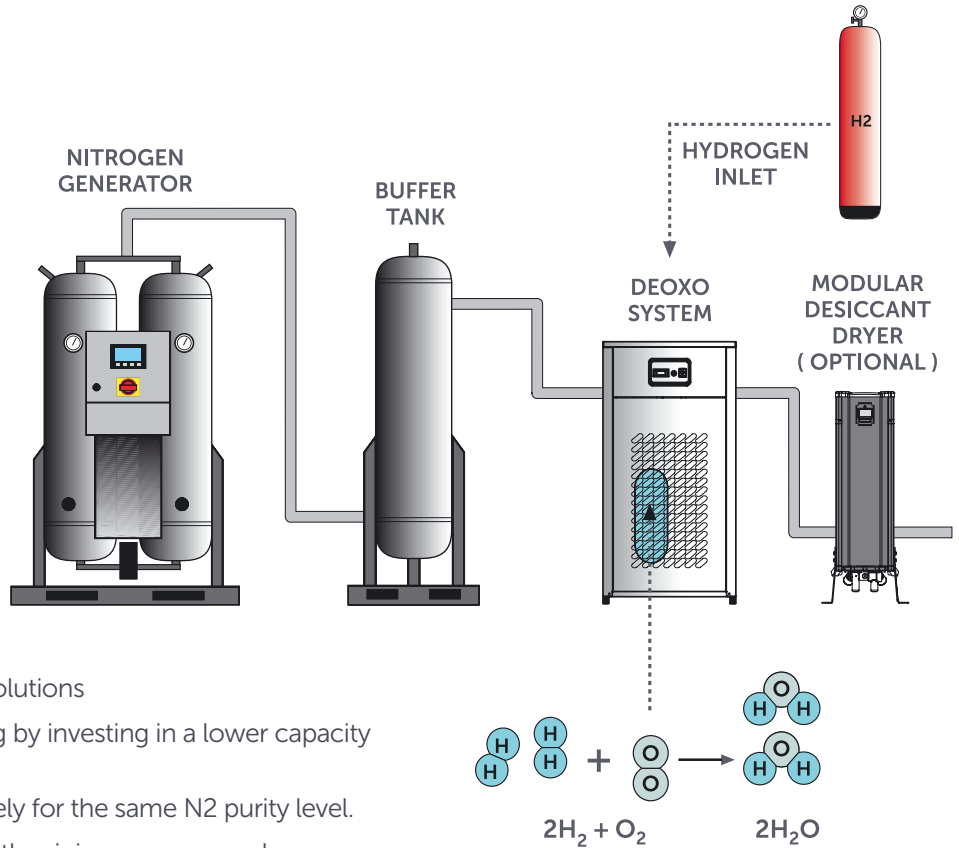
Inlet Nitrogen Purity (99.5% or 99.9%)

Model	MDX - 10	MDX - 20	MDX - 35	MDX - 60	MDX - 95	MDX - 120	MDX - 150	MDX - 250	MDX - 330
N ₂ Flow at 99.999% Purity (m ³ /h)	1	2	3.5	6	10.4	13.9	17	27.1	35.8
Model	MDX - 450	MDX - 510	MDX - 570	MDX - 730	MDX - 910	MDX - 1110	MDX - 1230	MDX - 1370	MDX - 1820
N ₂ Flow at 99.999% Purity (m ³ /h)	48.4	55.5	61.6	80.6	98.6	119.9	132.3	146.6	198.2

Nitrogen	99.999%
Oxygen	<10 ppm
Dew Point*	<3°C
*: -40°C Optional	

Advantages

- Effective pay-back period
- Minimised installation area
- Long life efficiency (> 10 years)
- Top-quality high-performance solutions
- Cost reduction and Power Saving by investing in a lower capacity MDX rather than installing a higher capacity MNG system solely for the same N2 purity level.
- Up to 99.999% nitrogen purity with minimum space and energy requirement
- Low energy consumption
- Low CO2 emission
- Heavy-duty construction designed for rough conditions and industrial use
- High quality & durable components
- System that delivers min. 99.999% purity with a very low A/N (air : nitrogen) ratio (3.0 instead of 8.4)
- Compact design, fully automatic system
- 24/7 Nitrogen gas production in desired purities
- High energy saving
- Low cost and customized production
- Minimum maintenance cost



In industrial applications, Oxygen (O₂), Nitrogen (N₂), Hydrogen (H₂), Argon (Ar), and inert gases are used in various purity ranges. These high-purity gases used in many industrial applications may contain water as an impurity. Especially in specific production areas, moisture in the system can cause problems and damage the quality of the final product. As a solution to these applications, Mikropor offers gas dryer systems called MGD Series.

With MGD Series, -40 °C dew point can be achieved. Special granules are used for drying processes. Thanks to MGD Gas Dryer Systems, the specified gases can be dried without disturbing the purity required for the application.

MGD Series Gas Dryers offer reliable, efficient and high performance solutions for all your industrial applications. Two types of machines are available for "Non-Flammable Gases" and "Flammable Gases", single unit and double unit depending on the usage. Both single and double design can be preferred according to the needs.

MGD Gas Dryer for Non-Flammable Gases

Designed for non-flammable gases, the MGD design demonstrates high performance at critical purity levels. These models have ≈4% compressed gas loss.

A stable dew point of -40 °C is achieved without degradation of the purity of the gases (<10ppm).

Standard Features

- Mini PLC
- Particule (P) Filter

Optional Features

- Oxygen Analyser
- HMI Color Touch Screen PLC
- Dew Point Sensor
- Pressure Transmitter

MGD Gas Dryer for Flammable Gases

Designed for flammable gases, the MGD is ideal for applications requiring continuous dry gas at specific purity levels. These models have less than 0.4% gas loss.

The fluctuation value of the output gas is <150ppm. The dewpoint value is provided as <-40°C. It has stainless steel connection parts.

Standard Features

- HMI Color Touch Screen PLC
- Buffer Tank
- Particule (P) Filter

Optional Features

- Oxygen Analyser
- Dew Point Sensor
- Pressure Transmitter



Technical Specification

Gas Dryer Model	Flow Rate (m ³ /h)
MGD-3	5
MGD-5	10
MGD-10	20
MGD-20	35
MGD-25	45
MGD-30	50
MGD-40	70
MGD-50	85
MGD-60	100
MGD-75	130
MGD-100	170
MGD-120	200
MGD-180	300
MGD-240	400
MGD-340	575
MGD-400	680
MGD-500	850
MGD-590	1000
MGD-735	1250

Reference Conditions

Inlet Gas Pressure	Inlet Gas Temperature	Inlet Gas Dew Point
7 barg	35°C	Max. +20 °C

Correction Factor

Pressure (barg)	F1	Inlet Temperature (°C)	F2
4.5	0.69	20	1
5	0.75	25	1
6	0.88	30	1
7	1	35	1
8	1.12	40	0.80
9	1.25	45	0.73
10	1.25	50	0.59
11	1.50	-	-
12	1.62	-	-
13	1.74	-	-
14	1.87	-	-
15	1.99	-	-
16	2.11	-	-



(Capacity 0.2 Nm³ / h -240.5 Nm³ / h; Purity 90-95%)

Mikropor Oxygen Generators are a Pressure Swing Adsorption (PSA) system supplying pure oxygen to the airline. Zeolite Molecular Sieve (ZMS), an effective adsorbent, separates oxygen and other molecules like nitrogen gas and water molecules in the dry air. Non-oxygen molecules are adsorbed by ZMS under constant pressure, so oxygen is produced.

Working Principle

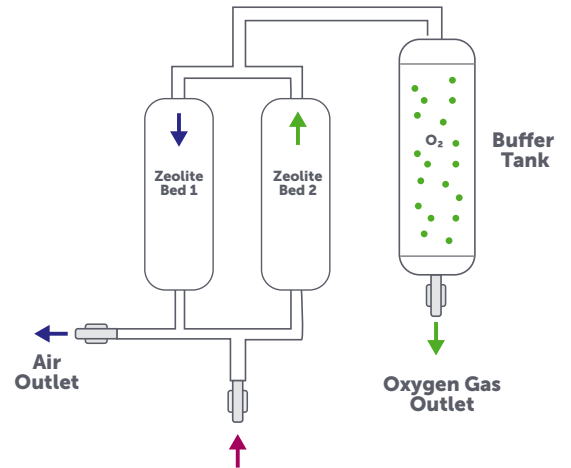
Mikropor Oxygen Generators are two-bed PSA systems filled with ZMS adsorbers. Including filters, a pressure regulator, valves and assemblies; the oxygen generation process is mainly the separation of oxygen and nitrogen from the clean and dry air. In a bed, zeolite adsorbs non-oxygen molecules such as nitrogen gas and hydrocarbon molecules in the dry air and, at that moment, the regeneration cycle begins in an other bed. Pure oxygen is stored in the special buffer tank. The system provides to the user uninterrupted oxygen up to 95% purity.



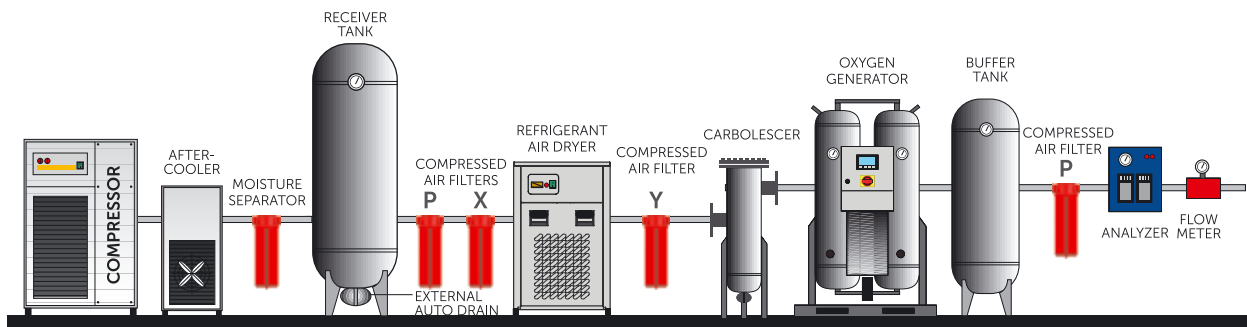
In order to achieve high purity oxygen production special zeolite granules are used. Zeolite, a microporous aluminosilicate mineral, is used as a molecular sieve and as an adsorbent of a wide variety of molecules.

Oxygen generation by utilising PSA technology follows these steps:

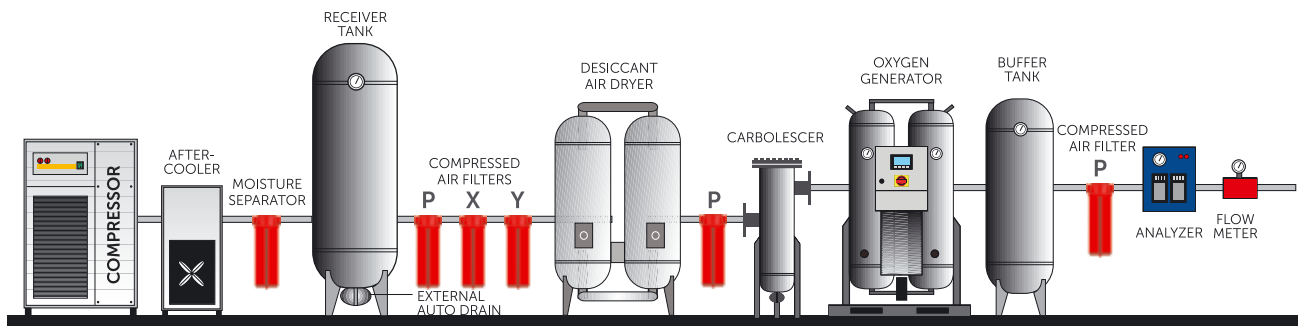
- **Pressurization:** Air is compressed to the tank to get the desired level of oxygen.
- **Adsorption:** Zeolite molecular sieve lets the oxygen flows and holds the other molecules at high pressure.
- **Regeneration:** The pressure of the tank is reduced. In that way, saturated zeolite molecules can be reused again.
- **Pressure Equalization:** After the regeneration cycle pressure valve is opened and pressure equalization of the two tanks is started to minimize the energy loss.



STANDARD AIR LINE DESIGN



PREMIUM AIR LINE DESIGN



Standard Features

- Oxygen Tanks
- Silencer
- Mini PLC
- Pressure Transmitter
- Particle Filter*
- Tank Manometers
- ECO Mode
- Valve Control Regulator
- Piston Valves

* Replace filter elements periodically, and get normal service for the compressor.



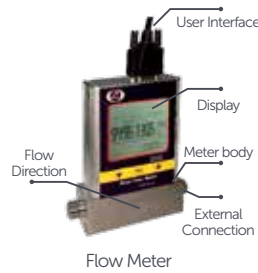
Long Life Valve



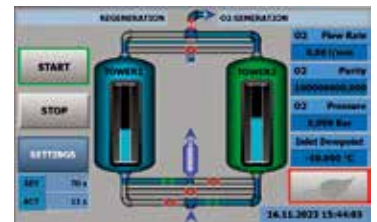
Oxygen Analyzer

Advantages

- On-demand oxygen gas production at high-capacity and purity values (90-95%) upon customer request
- Quick starting
- Highly minimized noise levels at the outlet
- A long lifetime of the special zeolite granules
- Minimum maintenance cost



Flow Meter



Touch Screen PLC

Optional Features

- Carbolescer
- Touch Screen PLC
- Oil Indicator
- Flowmeter
- Dew Point Sensor
- Oxygen Analyzer

Applications

- Medical Industry
- Metal Industry
- Ozone Systems
- Glass Industry
- Mining Process
- Laboratories
- Fishing Farms
- Paper Industry
- Industrial Ovens



Correction Factor

To determine the oxygen generator model in the reference conditions, divide the oxygen flow rate to the related factors value.

$$\text{Correct Model} = (\text{Oxygen Flow Rate}) / (F1) / (F2)$$

Inlet Temp. (°C)	F1	Inlet Pressure (bar)	F2
10	1	6	1
15	1	6.5	1
20	1	7	1
25	1	7.5	1
30	0.91	8	1.05
35	0.82	8.5	1.11
40	0.74	9	1.17
45	0.6	9.5	1.25
–	–	10	1.33

NOMINAL CONDITIONS	
Ambient Temperature	20°C
Ambient Pressure	1013 mbar
Inlet Temperature	20°C
Inlet Pressure	7.5 barg
Unit Outlet Oxygen Purity	90-95%
Compressed Air Inlet Quality	ISO 8573-1Class1-4-1
Max. Compressed Air Inlet Temperature	45°C
Max. Ambient Temperature	45°C
Min. Compressed Air Inlet Temperature	5°C
Min. Ambient Temperature	0°C
Min. Compressed Air Inlet Pressure	4 barg
Max. Compressed Air Inlet Pressure	10 barg
Pressure Dew Point	≤3°C

Technical Specifications

Model	Air Demand @ Following Purity Level (m³/h)			Free Oxygen Delivery @ Following Purity Level (m³/h)			ELM Models	Connection Sizes		Minimum Recommended Buffer Tank Volume (L) For 90% Purity	Partial Filters (P Filters)	Electrical Datas		
	90%	93%	95%	90%	93%	95%		Air Inlet	Oxygen Outlet			Voltage	Nominal Current Ampacity (A)	Input Power (kW)
MOG-25	2.8	2.7	2.8	0.3	0.2	0.2	G- 100 ELM-C	1/2"	1/2"	5.6	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-40	4.7	4.5	4.6	0.4	0.4	0.4	G- 100 ELM-C	1/2"	1/2"	9.4	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-70	8.4	8.2	8.3	0.8	0.7	0.6	G- 100 ELM-C	1/2"	1/2"	16.9	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-120	14.3	13.9	14.1	1.3	1.2	1.1	G- 100 ELM-C	1/2"	1/2"	28.8	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-140	17.1	16.7	17.0	1.6	1.4	1.3	G- 100 ELM-C	1/2"	1/2"	34.5	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-175	21.4	20.9	21.2	1.9	1.7	1.6	G- 100 ELM-C	1/2"	1/2"	43.2	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-240	28.6	27.9	28.3	2.6	2.3	2.2	G- 100 ELM-C	1/2"	1/2"	57.6	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-380	46.1	45.0	45.6	4.2	3.7	3.5	G- 200 ELM-C	1"	1/2"	92.9	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-530	64.2	62.6	63.5	5.8	5.2	4.9	G- 250 ELM-C	1"	1/2"	129.3	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-660	80.7	78.7	79.8	7.3	6.6	6.1	G- 300 ELM-C	1 1/2"	1/2"	162.5	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-800	98.8	96.4	97.7	9.0	8.0	7.5	G- 500 ELM-C	1 1/2"	1/2"	199.0	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-970	118.5	115.6	117.2	10.8	9.6	9.0	G- 600 ELM-C	1 1/2"	1/2"	238.8	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-1210	148.2	144.5	146.5	13.5	12.0	11.3	G- 850 ELM-C	1 1/2"	1/2"	298.5	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-1550	190.5	185.9	188.4	17.3	15.5	14.4	ELM- 150 -C	DN50	1/2"	-	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-1900	233.0	227.3	230.3	21.2	18.9	17.7	ELM- 150 -C	DN50	1/2"	469.4	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-2310	283.3	276.3	280.0	25.8	23.0	21.5	ELM- 300 -C	DN50	1/2"	570.6	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-2850	346.2	337.8	342.3	31.5	28.1	26.3	ELM- 300 -C	DN50	1/2"	697.5	GON-35	115-240/1/50-60Hz	<4	< 0.1
MOG-3810	468.1	456.7	462.8	42.6	38.1	35.6	ELM- 300 -C	DN50	1/2"	943.1	GON-55	115-240/1/50-60Hz	<4	< 0.1
MOG-4440	545.9	532.6	539.7	49.6	44.4	41.5	ELM- 600 -C	DN50	1/2"	1099.8	GON-55	115-240/1/50-60Hz	<4	< 0.1
MOG-5350	654.4	638.4	647.0	59.5	53.2	49.8	ELM- 600 -C	DN50	1/2"	1318.4	GON-70	115-240/1/50-60Hz	<4	< 0.1
MOG-6570	807.2	787.5	798.1	73.4	65.6	61.4	ELM- 600 -C	DN50	1/2"	1626.2	GON-100	115-240/1/50-60Hz	<4	< 0.1
MOG-7700	946.0	922.9	935.3	86.0	76.9	71.9	ELM- 600 -C	DN50	1/2"	1905.8	GON-100	115-240/1/50-60Hz	<4	< 0.1
MOG-9050	1109.5	1082.3	1096.9	100.9	90.2	84.4	ELM- 800 -C	DN80	3/4"	2235.1	GON-150	115-240/1/50-60Hz	<4	< 0.1
MOG-13200	1621.0	1581.3	1602.6	147.4	131.8	123.3	ELM- 1200 -C	DN80	3/4"	3265.5	GON-150	115-240/1/50-60Hz	<4	< 0.1
MOG-15700	1928.4	1881.2	1906.5	175.3	156.8	146.7	ELM- 1200 -C	DN80	3/4"	3884.9	GON-225	115-240/1/50-60Hz	<4	< 0.1
MOG-17700	2166.0	2112.9	2141.3	196.9	176.1	164.7	ELM- 1600 -C	DN80	1"	4363.4	GON-225	115-240/1/50-60Hz	<4	< 0.1
MOG-21600	2645.7	2581.0	2615.7	240.5	215.1	201.2	ELM- 1600 -C	DN80	1 1/2"	5329.9	GON-300	115-240/1/50-60Hz	<4	< 0.1

▶ MCT SERIES ACTIVATED CARBON TOWER

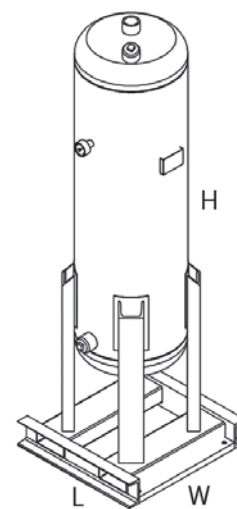
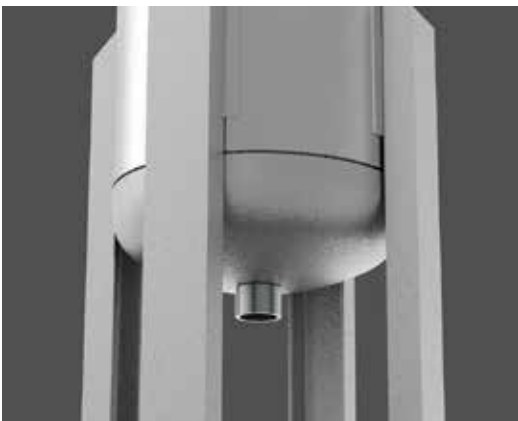
Many industries such as the electronic and hospital industries, pharmaceutical industries, food and beverage sectors require the removal of residual oil vapors and odors from the compressed air. Mikropor's solution for this application is the MCT Series activated carbon towers. With standard pre and after filters such as particulate filters, water coalescers and oil coalescers, the oil content inside the compressed air can be reduced to 0.01 mg/m^3 (0.01 ppm) for applications of EXTREME air quality such as hospital, pharmaceutical industries, or food and beverage industries, the residual oil content may need to be reduced to 0.003 mg/m^3 (0.003 ppm). MCT filters such as Mikropor activated carbon G series, GO series, F series filters or MCT activated carbon towers are a must for these types of applications.

Correction Factor

Operating Pressure (bar)	PSI	Correction Factor
1	15	0.5
3	44	0.71
5	73	0.87
7	100	1
9	131	1.12
10	145	1.15



Max. Recommended Operating Temperature	Max. Oil Carryover at 21°C (mg/m^3)	Max. Working Pressure
50°C	0.003°C	10 bar



Technical Specifications

Model	Connection Size	Flow Rate (m ³ /h)	Max. Working Pressure (bar)	Activated Carbon (kg)	Housing Dimensions (mm)		
					Length	Width	Height
MCT130	1"	130	10	14	347	450	1172
MCT185	1"	185	10	20	450	563	1413
MCT250	1"	250	10	28	430	601	1370
MCT300	1 1/2"	300	10	37	500	649	1336
MCT360	1 1/2"	360	10	37	500	649	1336
MCT440	1 1/2"	440	10	46	500	648	1536
MCT575	1 1/2"	575	10	56	469	604	1733
MCT680	2"	680	10	74	550	540	1936
MCT850	2"	850	10	97	580	600	1957
MCT1000	2"	1000	10	128	657	638	1617
MCT1250	DN80	1250	10	149	708	880	2400
MCT1500	DN80	1500	10	167	708	880	2558
MCT1800	DN80	1800	10	210	810	980	2423
MCT2200	DN80	2200	10	262	810	1100	2600
MCT2700	DN80	2700	10	320	910	1100	2758
MCT3200	DN100	3200	10	356	866	1050	3023
MCT3600	DN100	3600	10	400	866	1050	3237
MCT4400	DN100	4400	10	537	1130	1250	2914
MCT5000	DN100	5000	10	624	1130	1310	3420
MCT6300	DN150	6300	10	754	1230	1230	3365
MCT7200	DN150	7200	10	845	1430	1430	3075
MCT8800	DN150	8800	10	1009	1430	1430	3369
MCT10800	DN200	10800	10	1148	1430	1430	3863

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO7183.

High-quality compressed air is highly important for many industries, as it has a vital impact in the breathing air applications. Mikropor breathing air purifiers are designed to eliminate hazardous substances in the air conforming to related standards. (Mikropor Breathing Air Purifiers are designed for protection against a range of contaminants that may be present in a compressed air fed breathing air system.)

Why Should Purify Compressed Air?

In systems using compressed air, the ambient air is fed to the compressor. The polluted compressed ambient air remains in the system as long as the incoming air polluting components are not removed.

Where Would You Use Breathing Air Purifier?

Hazardous air pollutants can be released to environment with several applications in various industries. In these industries, it is crucial to eliminate the air pollutants.

Application Areas

- Shot-blasting
- Spray painting
- Tunnelling
- Confined spaces
- Welding
- Asbestos removal
- Tank cleaning
- Pharmaceutical manufacturing
- High-pressure cylinder filling
- Hospitals

International Breathing Air Standards

The atmospheric air breathing by livings is composed of approximately 78 percent nitrogen, 21 percent oxygen, and 1 percent with small amounts of many other trace components such as argon, hydrogen, and carbon dioxide. In this regard, for the high-quality breathing air, there are relatively standards including the allowable limits of the specification for each component in the breathing air system.

The Breathing Air Purifiers produced by Mikropor comply with the international standards, correlatively.

- OSHA Grade D
- NFPA-99
- CSA Z180.1-00
- CGA G7.1-1997
- EN 12021
- BS 4275
- European Pharmacopoeia
- EN ISO 7396-1:2016
- ISO 14971



Working Principle

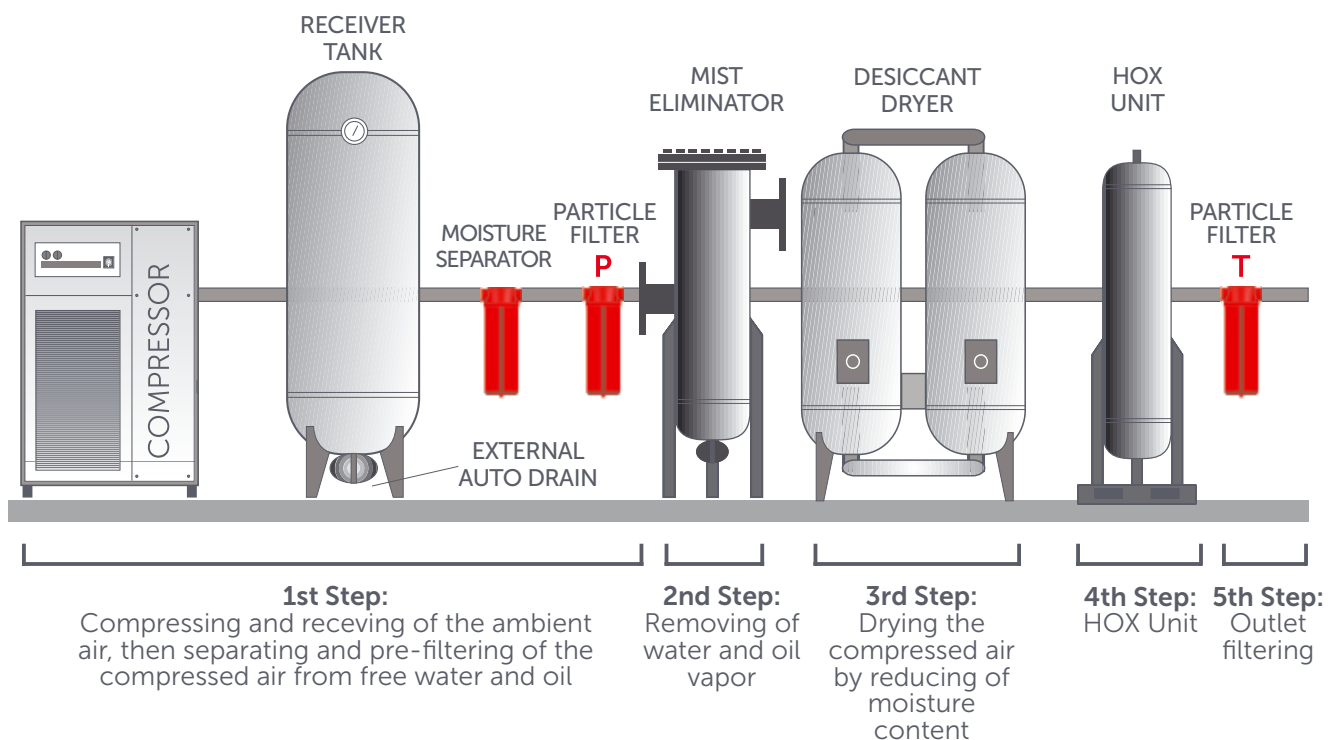
1st Step: Water and the oil droplets in the compressed air separated with help of the moisture and particle separators down to 1 micron.

2nd Step: Removing water and oil vapour down to 0.01 mg/m³ with Mikropor Mist Eliminator

3rd Step: Reducing with a heatless desiccant dryer of moisture content to a pressure dew point of -40°C / -40°F, removing any risk of condensation, bacteria, and mold growth.

4th Step: In HOX unit oil vapour and odour are eliminated with activated carbon granules and, CO gas in the air is converted to CO₂ down to 0.003 ppm with the catalyst granules in the unit.

5th Step: Removal of the remaining dust particles down to 0.01 micron.



Desiccants and Catalysts for Removal Impurities

Component	Hazardous	Desiccant/Catalyst
Water/Moisture	Moisture inside compressed breathing air can freeze, causing damage to the cylinder or regulator equipment. Can degrade the catalyst system filter system, reduce the lifetime of the Activated Carbon.	Activated Alumina & Molecular sieve
Hydrocarbons, Oils, and Odor	Carcinogenic and the oils may build up over time in the lungs.	Activated Carbon
Carbon Monoxide	Binds with hemoglobin in the body and disrupts the flow of oxygen to the body, resulting in death at high exposure.	H-OX Catalyst

Technical Specifications

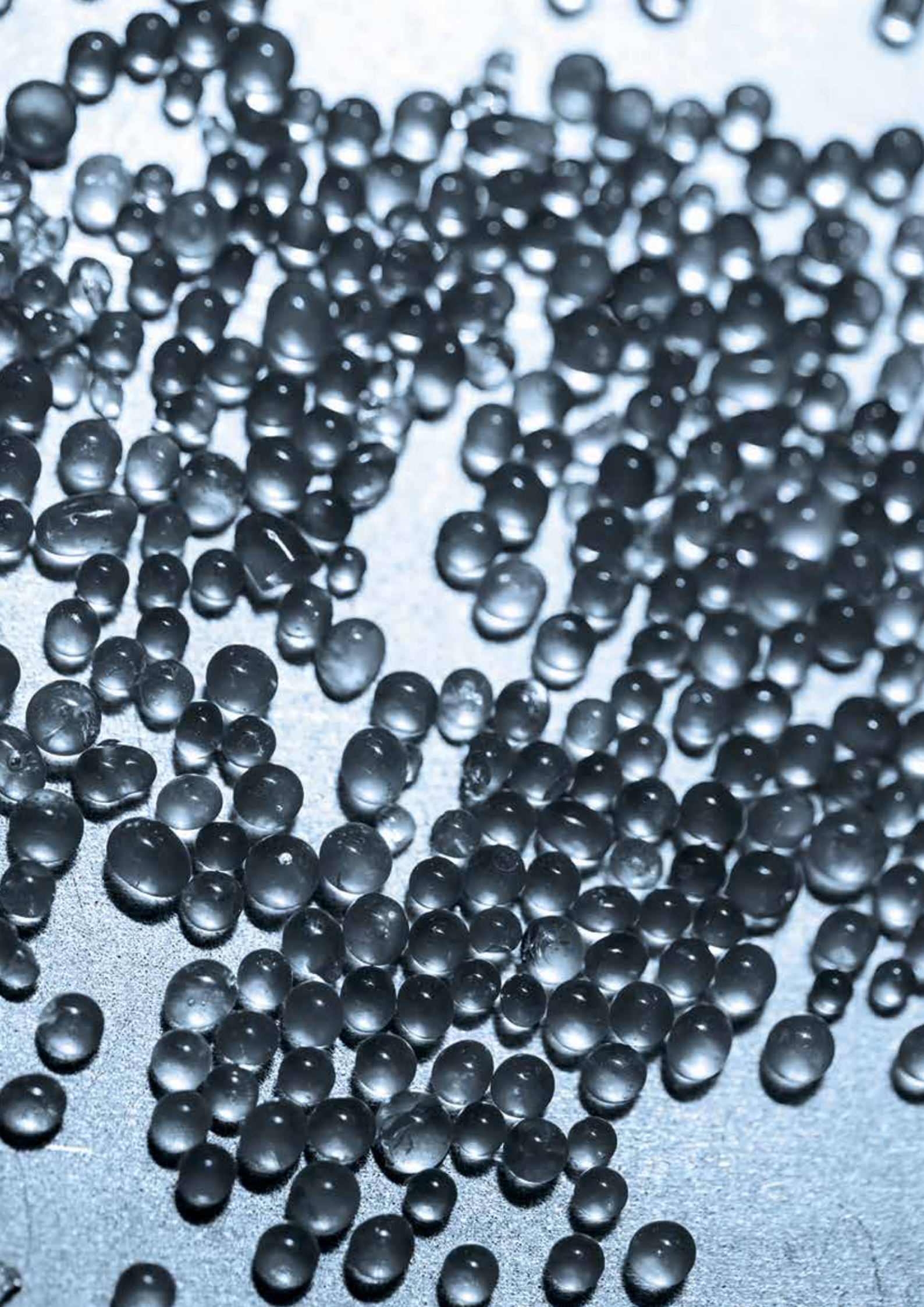
Model	Capacity		Connection Size	Mist Eliminator Model	Particle (T) Filter Model	T Filter Element	Max. Working Pressure (bar)	Voltage
	(m ³ /h)	(scfm)						
MBS 5	10	5	1/2"	G-ELM-100	GON-35	MON35	16	115-240V/50-60Hz
MBS 10	20	10	1/2"	G-ELM-100	GON-35	MON35	16	115-240V/50-60Hz
MBS 15	25	15	1/2"	G-ELM-100	GON-35	MON35	16	115-240V/50-60Hz
MBS 20	35	20	1/2"	G-ELM-100	GON-55	MON55	16	115-240V/50-60Hz
MBS 25	45	25	1/2"	G-ELM-150	GON-55	MON55	16	115-240V/50-60Hz
MBS 30	50	30	1/2"	G-ELM-200	GON-55	MON55	16	115-240V/50-60Hz
MBS 40	70	40	1 1/2"	G-ELM-250	GON-300	MON300	16	115-240V/50-60Hz
MBS 50	85	50	1 1/2"	G-ELM-300	GON-300	MON300	16	115-240V/50-60Hz
MBS 60	100	60	1 1/2"	G-ELM-500	GON-300	MON300	16	115-240V/50-60Hz
MBS 75	130	75	1 1/2"	G-ELM-600	GON-300	MON300	16	115-240V/50-60Hz
MBS 100	170	100	1 1/2"	G-ELM-851	GON-300	MON300	16	115-240V/50-60Hz
MBS 120	200	120	1 1/2"	G-ELM-1210	GON-300	MON300	16	115-240V/50-60Hz
MBS 180	300	180	1 1/2"	ELM-300	GON-300	MON300	16	115-240V/50-60Hz
MBS 240	400	240	1 1/2"	ELM-300	GON-500	MON500	16	115-240V/50-60Hz
MBS 250	440	250	1 1/2"	ELM-300	GON-500	MON500	16	115-240V/50-60Hz
MBS 300	575	300	1 1/2"	ELM-600	GON-600	MON600	16	115-240V/50-60Hz
MBS 400	680	400	2"	ELM-600	GON-800	MON800	16	115-240V/50-60Hz
MBS 500	850	500	2"	ELM-600	GON-1000	MON1000	16	115-240V/50-60Hz
MBS 600	1000	600	2"	ELM-600	GON-1200	MON1200	16	115-240V/50-60Hz
MBS 700	1250	700	DN80	ELM-800	GON-HC-1550	MONHC1550	20	115-240V/50-60Hz
MBS 800	1500	800	DN80	ELM-1200	GON-HC-1550	MONHC1550	20	115-240V/50-60Hz
MBS 1000	1800	1000	DN80	ELM-1200	GON-HC-2000	MONHC2000	20	115-240V/50-60Hz
MBS 1250	2200	1250	DN80	ELM-1600	GON-HC-2700	MONHC2700	20	115-240V/50-60Hz

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO7183.

Correction Factor for MBS

Inlet Temperature			Pressure		
(°C)	(°F)	F1	(barg)	(psig)	F2
20	68	1	4.5	65	0.69
25	77	1	5	73	0.75
30	86	1	6	87	0.88
35	95	1	7	100	1
40	104	0.8	8	116	1.12
45	113	0.73	9	131	1.25
50	122	0.59	10	145	1.25
-	-	-	11	160	1.5
-	-	-	12	174	1.62
-	-	-	13	189	1.74
-	-	-	14	203	1.87
-	-	-	15	218	1.99
-	-	-	16	232	2.11

Contaminants	BS EN 12021:2014	European Pharmacopoeia	OHSA Grade D
Water	-	67 ppm (-49°F atmospheric dew point)	-
Oil/Lubricant	<0.5 ppm	0.1 ppm	5 ppm
Carbon Dioxide (CO ₂)	<500 ppm	<500 ppm	<1000 ppm
Carbon Monoxide (CO)	≤ 15 ppm	<5 ppm	<10 ppm
Nitrogen Oxides (NO+NO ₂)	-	<2 ppm	-
Sulphur Dioxide (SO ₂)	-	<1 ppm	-
Oxygen (O ₂)	21 ±1%	21±1	-
Taste and Odor	-	Free	-





OIL-WATER SEPARATOR UNITS

MWOS SERIES

114



OIL-WATER
SEPARATOR UNITS

▶ MWOS SERIES

OIL-WATER SEPARATOR UNITS ◀

A compressed air system can be considered as the fourth-biggest energy source after water, gas, and electricity. The efficient way of storing and transmitting energy makes compressed air usages highlighted. Oil is used in most compressed air systems to dissipate the heat of compression, lubricate rotors and rotor bearings, and seal the edge between the rotor and the compressor casing. For that reason, there is so much oil content in the drain of the compressor. In addition to oil, other contaminants are also included the water while the air is pressurized and produces compressor condensate. This condensate mixture is defined as a highly harmful industrial waste. One liter of oil can contaminate one million liters of water. For that reason, it is forbidden to drain this condensate without any oil removal system. Also, most of the countries put restrictive laws about the thresholds of oil content in the drains. Consequently, the separation of oil is a must for protecting the environment and for obeying the laws.

Mikropor MWOS Series Oil-Water Separator Units supply you to separate oil content in the drain according to ISO 14000 standards reliably and cost-effectively. Approximately 3000 to 500 ppm range of oil content can be decreased to 10 ppm. Also, it has a user-friendly installation and maintenance procedure that minimized the downtime of the machine.



Features

- Low carbon footprint
- Eco-friendly drain according to ISO 14000
- Low weight and easy installation
- The indicator that shows overload of the flow
- User-friendly maintenance procedure
- Ware resistant multiple inlet ports
- Oil storage box that obeys environmental regulation of oil collection (for MWOS-37 and above models)
- Filtering system that prevents particles to enter the system from the environment



Oil Types	Separator Compatibility
Mineral Oil	✓
Synthetic Oil	✓



Working Principle of MWOS-11 Model

- MWOS-11 has been designed to separate and clean the oil-water condensate from the compressor system. The unit consists of inlet and outlet ports, special material, bulk oil removal shred, and anti-siphon venting port.
- The oily water entering from the inlet is degreased by the bulk oil removal shred and special material, respectively.
- The clean water accumulating inside the unit is discharged from the outlet port by passing through the discharge pipe accordance with the anti-siphon vent.

* Please note that the MWOS-11 Model Unit is a single-use product.



Working Principle of MWOS-37 and MWOS-55 Models

1. The condensate goes through the depressurization chamber to condensate liquid pressure reach the atmospheric level for protecting the Mikro-Sep from high pressure.
2. The condensate goes inside the Mikro-Sep (separator element) and most of the oil is removed in this step. In that part, the oil concentration is decreased to significant ranges. The filtered oil-water condensate is started to collect at a specific level at the outside of the Mikro-Sep. The water stays at the bottom of the box which is much cleaner due to the density differences between water and oil. At a specific level, oil continues to collect top of the liquid and drained safely through the oil outlet.
3. The gradually cleaned condensate is transferred to the bottom of the box and directed through a channel for another separation step.
4. The special Mikro-X-Tex material is reduced the remaining oil content from gradually cleaned oil-water condensate.
5. The consecutively purified oil-water mixture is finally passed through the Mikro-Carb unit that reduces the remaining oil concentration to below 10 ppm. The oil content of the liquid is approximately reached <10 ppm which is acceptable bylaws.
6. Lastly, the purified water is discharged from the MWOS unit and can be allowed to flow into the drains that complies fully with the legal standards.



Working Principle of MWOS-110 to MWOS-250 Models

1. The condensate goes through the depressurization chamber to condensate liquid pressure to reach the atmospheric level to protect the components from high pressure.
2. Through solenoid valves in the unit, condensate is distributed to multiple separation units equally and respectively. The condensate goes inside the multiple Mikro-Seps (separator elements) and most of the oil is removed by the coalescing method in this step. In that part, the oil concentration is decreased to significant ranges. The separated oil-water condensate started to collect at a specific level outside of the Mikro-Sep. The water stays at the bottom of the liquid phase, which is much cleaner due to the density differences between water and oil. Oil continues to collect on top of the liquid at a specific level. After that, all of the oil is drained safely through the single oil outlet.
3. The gradually cleaned condensate is transferred to the bottom of the box and directed through a channel at the deepest point for another separation step.
4. The special Mikro-X-Tex material reduces the remaining oil content from gradually cleaned oil-water condensate by the adsorption method.
5. The consecutively purified oil-water mixture is finally passed through the Mikro-Carb unit which reduces the remaining oil concentration to below 10 ppm. The oil content of the liquid is approximately reached <10 ppm which is acceptable bylaws.
6. Lastly, the purified water is discharged from the single outlet port of the MWOS unit and can be allowed to flow into the drains that comply fully with the legal standards.



Technical Specifications

Model	Compressor Capacity (m ³ /min)	Oil Concentration at the Outlet of MWOS	Dimension*		
			Length (mm)	Width (mm)	Height (mm)
MWOS-11	1.7	< 10 ppm	140	139	246
MWOS-37	7	< 10 ppm	479	313	383
MWOS-55	11	< 10 ppm	492	316	487
MWOS-110	22	< 10 ppm	-	-	-
MWOS-160	33	< 10 ppm	-	-	-
MWOS-200	44	< 10 ppm	-	-	-
MWOS-250	55	< 10 ppm	-	-	-

* Reference Conditions: Air Inlet Temp. 25 °C, Relative Air Humidity 60%

* The dimension data includes the accessories.



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ACCESSORIES

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ACCESSORIES

DRAINS

Product Subgroups	Representative Sample Images
AUTOMATIC DRAIN	
ZERO LOSS DRAIN	
EGG DRAIN	
MANUAL DRAIN	
ELECTRONIC TIMER DRAIN	

MANOMETERS

Product Subgroups	Representative Sample Images
1/4" MANOMETER	
1/2" MANOMETER	
1/8" MANOMETER	

CONNECTION APPARATUS

Product Subgroups	Representative Sample Images
WALL MOUNTING APPARATUS	
WALL MOUNTING BRACKETS	
FILTER CONNECTION CLAMPS (FOR COMPRESSED AIR FILTERS)	
AIR INLET FILTER/ MWOS CLAMPS	


OIL MEASURING EQUIPMENTS

Product Subgroups	Representative Sample Images
MOI-FIL	
MOI-COMP	
OIL INDICATOR	
OIL TEST STRIPS (FOR MWOS SERIES)	

DIFFERENTIAL PRESSURE GAUGES

Product Subgroups	Representative Sample Images
PLASTIC DIFFERENTIAL PRESSURE GAUGE	
ALUMINUM DIFFERENTIAL PRESSURE GAUGE	


SENSORS / ANALYZERS

Product Subgroups	Representative Sample Images
DEW POINT SENSOR (-40°C & -70°C)	
CARBON MONOXIDE SENSOR	
CARBON DIOXIDE SENSOR	
OXYGEN ANALYZER	

PRESSURE TRANSMITTERS

Product Subgroups	Representative Sample Images
PRESSURE TRANSMITTER (0-1 BAR)	
PRESSURE TRANSMITTER (0-16 BAR)	


PRESSURE REGULATORS

Product Subgroups	Representative Sample Images
1 1/2" PRESSURE REGULATOR	
1/2" PRESSURE REGULATOR	
3/4" PRESSURE REGULATOR	
1" PRESSURE REGULATOR	
2" PRESSURE REGULATOR	
3" PRESSURE REGULATOR	
4" PRESSURE REGULATOR	
5" PRESSURE REGULATOR	


FLOWMETERS

Product Subgroups	Representative Sample Images
HYDROGEN FLOWMETER	
AIR FLOWMETER	
NITROGEN FLOWMETER	

PROPORTIONAL AND BALL VALVES

Product Subgroups	Representative Sample Images
1" STEEL PROPORTIONAL VALVE	
2" STEEL PROPORTIONAL VALVE	
1 1/2" STEEL PROPORTIONAL VALVE	
1 1/4" STEEL PROPORTIONAL VALVE	
1 1/2" BRASS PROPORTIONAL VALVE	
1 1/4" BRASS PROPORTIONAL VALVE	
1 1/2" BALL VALVE	
2" BALL VALVE	

GENERAL

Product Subgroups	Representative Sample Images
BOTTLE FOR LIQUIDS	
BASE RESERVOIR FOR OIL WATER SEPARATORS	
PNEUMATIC SILENCER	



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