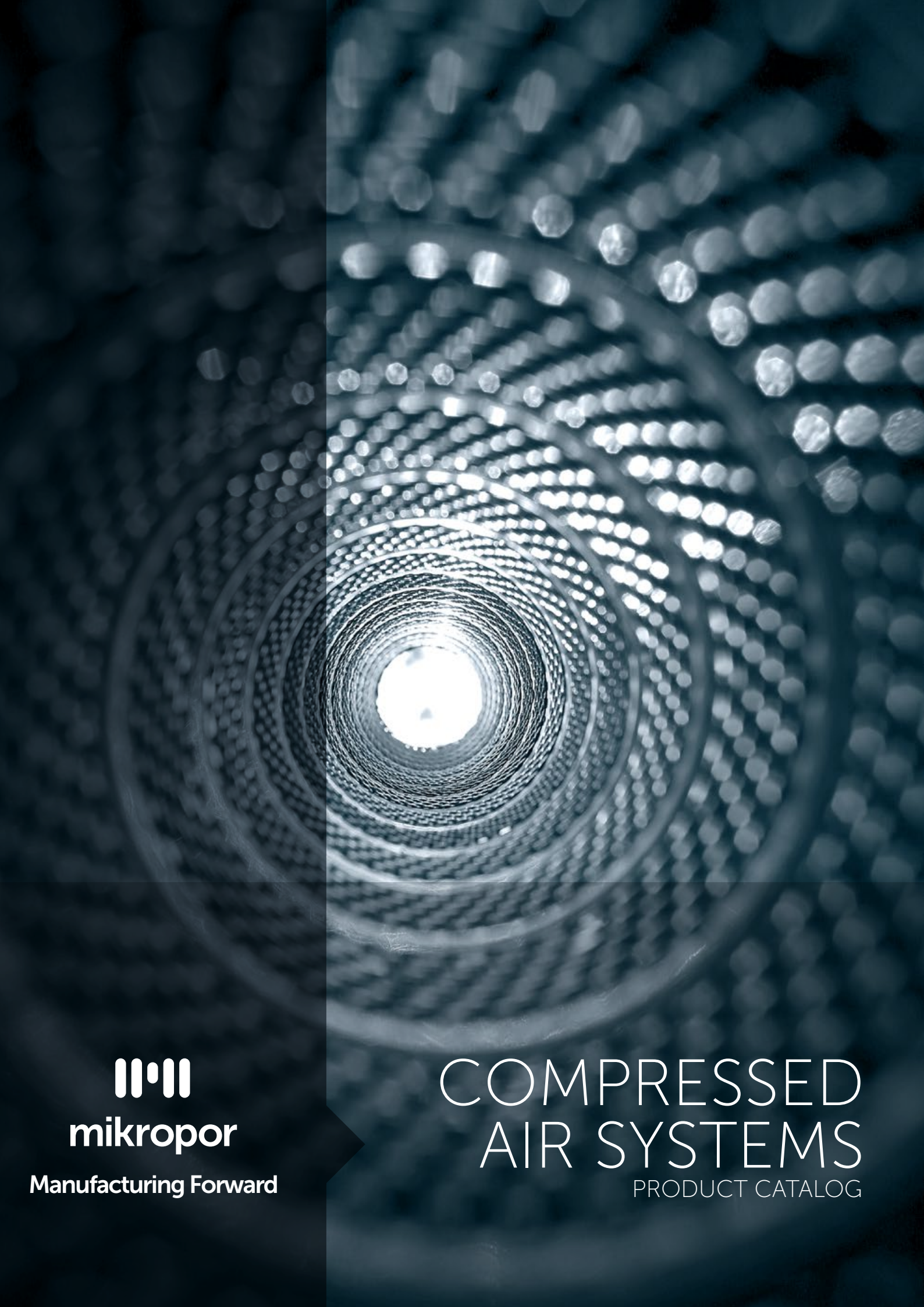


mikropor

Manufacturing Forward

COMPRESSED AIR SYSTEMS

PRODUCT CATALOG


mikropor

01

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.

Note: The product images/visuals may include optional components. Images represent the appearance of the product. Please check the standard and optional lists of the relevant product for the most accurate cautiously.

02

FILTRATION AND SEPARATION

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.

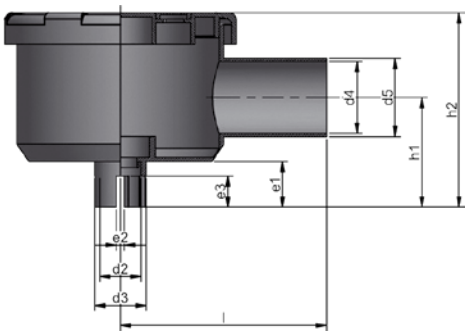
The Mikropor Mini-Pleat system guarantees equal space between each filter pleat and maintains "V" pleated geometry throughout the service life of the filter. As a result, 100% of the surface area performs equally and delivers the expected protection, while minimizing pressure drops.

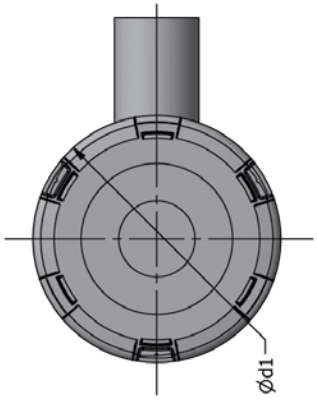
MIFH SERIES MIKROLINE AIR INTAKE FILTERS

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 to 4 m^3/min	-30°C to +100°C	+120°C

Given flows are at 7 barg pressure with reference to 20°C and 1 barg atmospheric air suction as per ISO 7183 standard

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	Internally Tightened
MIFH-0130	112	30	35	35	38	22	4	15	-	53	94	100	1	Internally Tightened
MIFH-0140	112	40	45	35	38	22	4	15	-	53	94	100	1	Internally Tightened
MIFH-0240	140	40	45	35	38	22	4	15	-	67	114	120	2	Internally Tightened
MIFH-0248	140	48	53	35	38	22	4	15	-	67	114	120	2	Internally Tightened
MIFH-0252	140	52	57	35	38	22	4	15	-	67	114	120	2	Internally Tightened
MIFH-0260	140	60	65	35	38	22	4	15	-	67	114	120	2	Internally Tightened
MIFH-0271	140	71	76	35	38	22	4	15	-	67	114	120	2	Internally Tightened
MIFH-0440	181	40	45	58	60	22	4	15	-	102	164	154.5	4	Internally Tightened
MIFH-0452	181	52	57	58	60	22	4	15	-	102	164	154.5	4	Internally Tightened
MIFH-0460	181	60	65	58	60	22	4	15	-	102	164	154.5	4	Internally Tightened
MIFH-0462	181	62	67	58	60	22	4	15	-	102	164	154.5	4	Internally Tightened
MIFH-0468	181	68	73	58	60	22	4	15	-	102	164	154.5	4	Internally Tightened
MIFH-0471	181	71	76	58	60	22	4	15	-	102	164	154.5	4	Internally Tightened
MIFH-0475	181	75	78	58	60	22	4	15	-	102	164	154.5	4	Internally Tightened
MIFH-0478	181	78	83	58	60	22	4	15	-	102	164	154.5	4	Internally Tightened

MAFH SERIES MAKROLINE AIR INTAKE FILTERS

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.

Easy and various mounting possibilities

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.

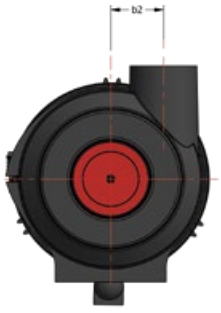
Mikropor Makroline Air Intake Filters' user friendly and flexible bracket system provides the ability for easy installation. The brackets can be turned in various positions, providing numerous fitting possibilities. Mikropor's versatile production offers these brackets in different sizes.

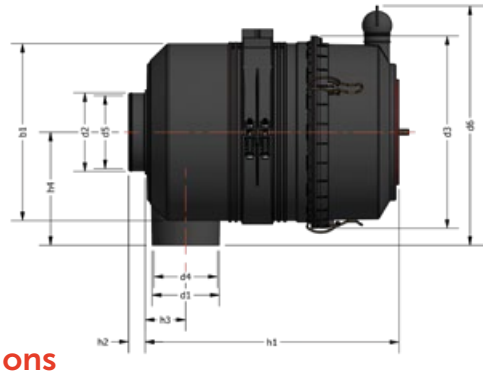
General Working Conditions for Makroline Air Intake Filters

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 to 28 m^3/min	-30 to +80°C	+100°C

Given flows are at 7 barg pressure with reference to 20°C and 1 barg atmospheric air suction as per ISO 7183 standard

1) Air Intake Filter Models with Single Inlet



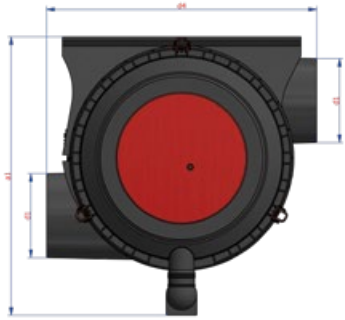


Technical Specifications

Model	b1	b2	d1	d2	d3	d4	d5	d6	h1	h2	h3	h4	Nominal Flow Rate (m^2/min)	Compressor Connection Type
MAFH-0430	164	48	55	30	185	52	23	245	263	27	43	103	1-3	Externally Clamped
MAFH-0440	164	48	55	40	185	52	33	245	263	27	43	103	1-3	Externally Clamped
MAFH-0450	164	48	55	50	185	52	43	245	263	27	43	103	1-3	Externally Clamped
MAFH-05040	179	50	62	40	200	58	34	260	330	27	47	112	2-5	Externally Clamped
MAFH-05050	179	50	62	50	200	58	44	260	330	27	47	112	2-5	Externally Clamped
MAFH-05060	179	50	62	60	200	58	54	260	330	27	47	112	2-5	Externally Clamped
MAFH-05070	179	50	62	70	200	58	63	260	330	27	47	112	2-5	Externally Clamped
MAFH-0576	179	50	62	76	200	58	70	260	330	27	47	112	2-5	Externally 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	Externally Clamped
MAFH-0360	142	45	52	60	160	49	57	209	292	26	56	94	3-4	Externally Clamped
MAFH-09070	230	67	82	70	251	78	63	320	388	27	55	145	4-9	Externally Clamped
MAFH-09090	230	67	82	90	251	78	83	320	263	27	43	103	4-9	Externally Clamped
MAFH-09100	230	67	82	100	251	78	93	320	263	27	43	103	4-9	Externally Clamped
MAFH-1270	200	53	94	70	227	89	64	293	330	27	47	112	12-14	Externally Clamped
MAFH-12100	200	53	94	100	227	89	94	293	330	27	47	112	12-14	Externally Clamped
MAFH-17100	297	86.5	110	100	323	104	93	399.5	330	27	47	112	17	Externally Clamped
MAFH-17110	297	86.5	110	110	323	104	103	399.5	292	26	56	94	17	Externally Clamped
MAFH-17130	297	86.5	110	130	323	104	123	399.5	292	26	56	94	17	Externally 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	Externally Clamped
MAFH-19110	436	322	132	110	352	424	414.5	42	19	Externally Clamped
MAFH-19130	436	322	132	130	352	424	414.5	42	19	Externally Clamped
MAFH-19150	436	322	132	150	352	424	414.5	42	19	Externally Clamped
MAFH-21100	436	322	132	100	352	424	444.5	42	21	Externally Clamped
MAFH-21110	436	322	132	110	352	424	444.5	42	21	Externally Clamped
MAFH-21130	436	322	132	130	352	424	444.5	42	21	Externally Clamped
MAFH-21150	436	322	132	150	352	424	444.5	42	21	Externally Clamped
MAFH-23100	436	322	132	100	352	424	474.5	42	23	Externally Clamped
MAFH-23110	436	322	132	110	352	424	474.5	42	23	Externally Clamped
MAFH-23130	436	322	132	130	352	424	474.5	42	23	Externally Clamped
MAFH-23150	436	322	132	150	352	424	474.5	42	23	Externally Clamped
MAFH-25100	436	322	132	100	352	424	504.5	42	25	Externally Clamped
MAFH-25110	436	322	132	110	352	424	504.5	42	25	Externally Clamped
MAFH-25130	436	322	132	130	352	424	504.5	42	25	Externally Clamped
MAFH-25150	436	322	132	150	352	424	504.5	42	25	Externally Clamped
MAFH-27100	436	322	132	100	352	424	534.5	42	27	Externally Clamped
MAFH-27110	436	322	132	110	352	424	534.5	42	27	Externally Clamped
MAFH-27130	436	322	132	130	352	424	534.5	42	27	Externally Clamped
MAFH-27150	436	322	132	150	352	424	534.5	42	27	Externally Clamped
MAFH-29100	436	322	132	100	352	424	534.5	42	29	Externally Clamped
MAFH-29110	436	322	132	110	352	424	534.5	42	29	Externally Clamped
MAFH-29130	436	322	132	130	352	424	534.5	42	29	Externally Clamped
MAFH-29150	436	322	132	150	352	424	534.5	42	29	Externally Clamped

AIR/OIL SEPARATORS

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 (m^3/min @ 7 barg working pressure)

Dimensions

Air/Oil Separator Overall Height (mm)

Air/Oil Separator Body Diameter (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
	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									

AIR/OIL SEPARATORS

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 m^3/min flow rate at 7 barg with 1 to 3 mg/m^3 oil carry over.

CONWRAP

"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.

3S - SEPARATORS

Pleated Air/Oil Separators

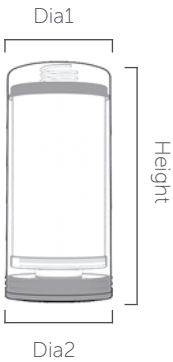
Pleated separators increase the media surface area to reach higher capacities while maintaining the dimensions. Mikropor manufactures dozens of pleated separator designs.

PLEATED

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 m^3/min flow rates operating at 7 barg.

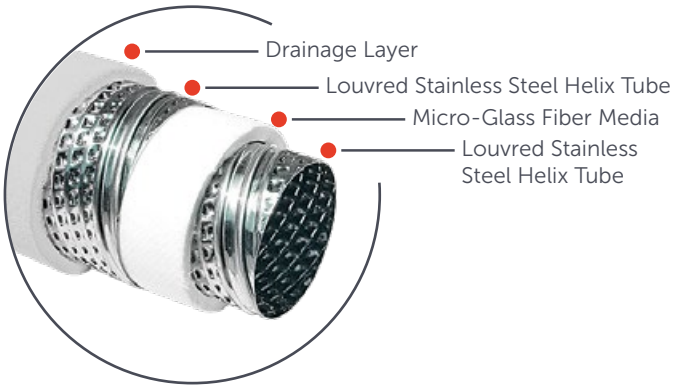
Model	Maximum Flow Rate (m^3/min @ 7 barg)	Dia 1 (mm)	Dia 2 (mm)	Height (mm)
Zero 10	0.5	Ø82.5	Ø78	98
Zero 20	1	Ø79.5	Ø75.6	140
Zero 30	2	Ø96	Ø92.5	212
Zero 40	1.5	Ø96	Ø92.5	178
Zero 50	4	Ø116	Ø112	264
Zero 60	3	Ø140.5	Ø137	188
Zero 70	6	Ø140.5	Ø137	300
Zero 80	7	Ø140.5	Ø137	341



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.

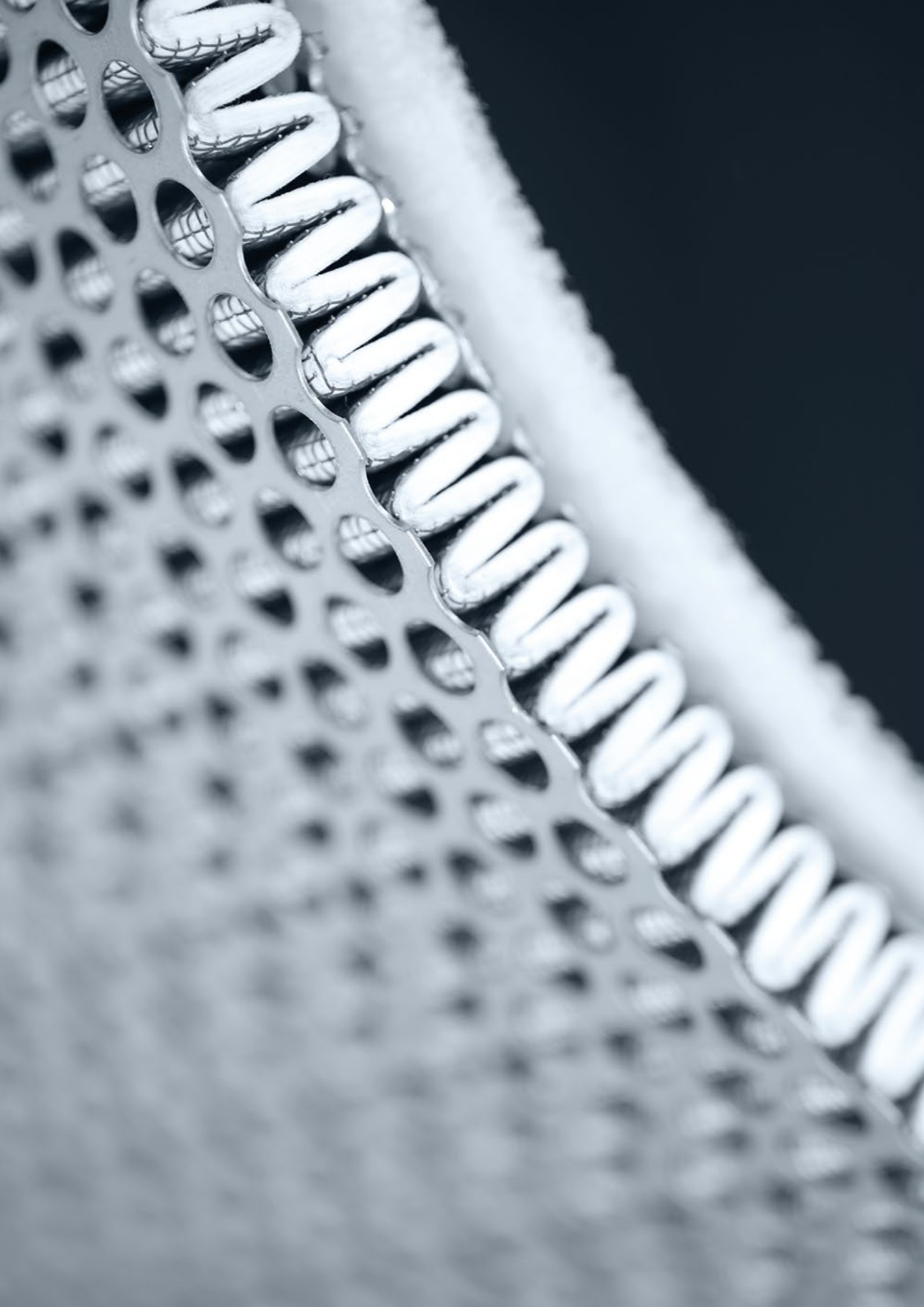
Test

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 ourstate-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.



REPLACEMENT ELEMENTS

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

G WS SERIES WATER SEPARATORS

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 m^3/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

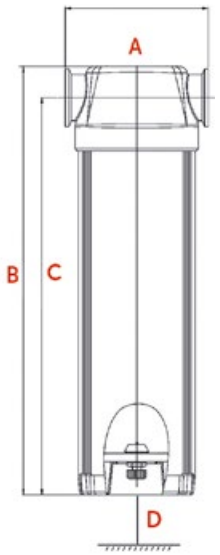
For maximum flow rate, multiply model flow rate show in the above table by the correction factor corresponding to the working pressure.

Operating Pressure (barg)	psig	Correction Factor
1	14	0.50
3	44	0.71
5	72	0.87
7	100	1.00
9	130	1.12
11	160	1.22
13	188	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	70
G100WS	1/2"	100	58	103	257.5	236	70
G200WS	3/4"	200	117	123	304	277	110
G300WS	1"	300	176	123	304	277	110
G600WS	1 1/2"	600	353	123	320	285	110
G1200WS	2"	1200	706	160	484	443	140
G2200WS	3"	2200	1294	193	546	490	180



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 barg

Given flows are at 7 barg pressure with reference to 20°C and 1 barg atmospheric air suction as per ISO 7183 standard

GO-HC-WS SERIES WATER SEPARATORS

Mikropor GO-HC-WS 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.

High capacity GO-HC-WS Series Water Separators are designed to increase the capacity of separators used in compressed air systems. Thus, the utilization of compressed air volume can be easily pushed up to 5.4 m^3/h.

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

Note: Mikropor Electronic Zero Loss Drain (MZL) is fitted as standard.

Correction Factor

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

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

Operating Pressure (barg)	psig	Correction Factor
1	15	0.50
3	44	0.71
5	73	0.87
7	100	1.00
9	131	1.12
11	160	1.22
13	188	1.32
15	218	1.44
16	232	1.57

Features

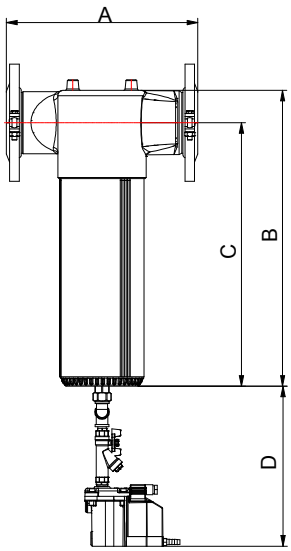
- Low carbon footprint
- Eco-friendly drain according to ISO 14000
- Low weight and easy installation
- User-friendly maintenance procedure
- Ware resistant multiple inlet ports

Oil Types	Separator Compatibility
Mineral Oil	✔
Synthetic Oil	✔

GO-HC-WS SERIES WATER SEPARATORS

Technical Specifications

Model	Connection Size	Flow Rate (m^3/h)	Max Working Pressure (barg)	Housing Dimensions (mm)			
				A	B	C	D
GO-HC-WS-3400	DN100 Flange	3400	16	350	560	510	305
GO-HC-WS-4500	DN100 Flange	4500	16	350	635	585	305
GO-HC-WS-5400	DN100 Flange	5400	16	350	660	585	305



Given flows are at 7 barg pressure with reference to 20°C and 1 barg atmospheric air suction as per ISO 7183 standard

Max. Recommended Operating Temp.	Min. Recommended Operating Temp.	Typical Pressure Loss at Rated Flow	Max. Working Pressure
80°C	2°C	0.05 bar	16 barg

F WS SERIES FLANGED WATER SEPARATORS

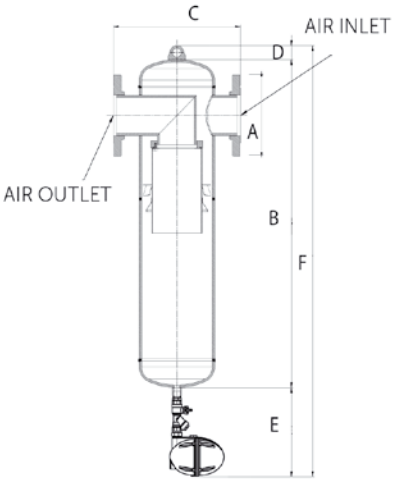
Mikropor flanged water separators have been designed for the removal of bulk liquid water and particulate from compressed air and gases. Unique centrifugal action removes contaminants at low-pressure drop for maximum energy savings. Mikropor flanged water separators are available from DN80-DN200 flange sizes and flows up to 14000 m^3/h (8240 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.

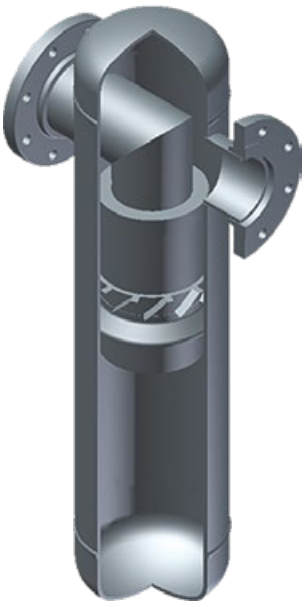
Correction Factor

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

Operating Pressure (barg)	psig	Correction Factor
1	14	0.50
3	44	0.71
5	72	0.87
7	100	1.00
9	130	1.12
11	160	1.22
13	188	1.32
14	200	1.38



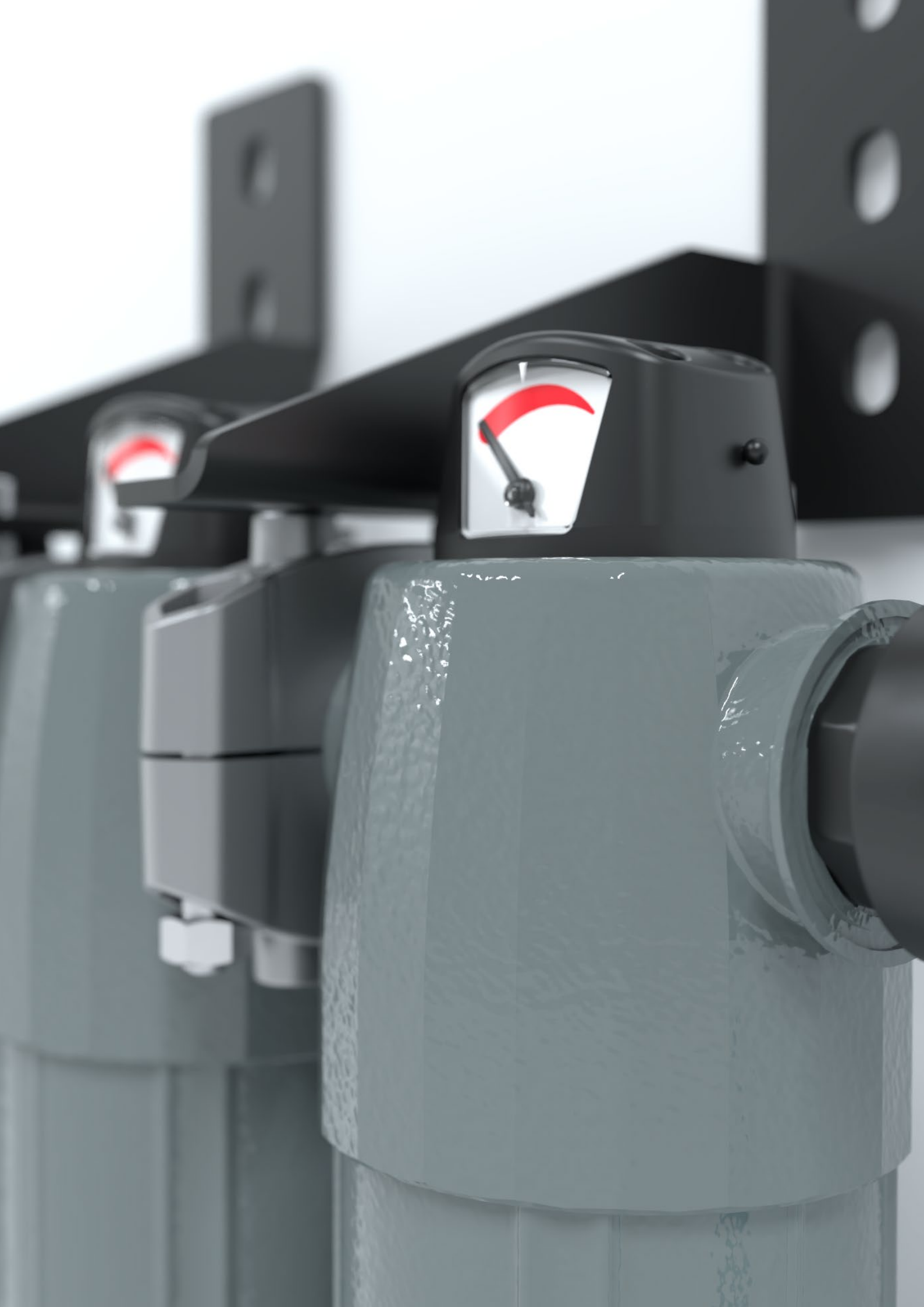
Max. Recommended Operating Temperature	Min. Recommended Operating Temperature	Typical Pressure Loss at Rated Flow	Max. Working Pressure
80°C	1.5°C	50 mbar	14 barg



Technical Specifications

Model	Connection Size	Flow Rate		Housing Dimensions (mm)					
		(m^3/h)	(cfm)	A	B	C	D	E	F
F-2500WS	DN80	2500	1470	200	934	450	75	280	1289
F-3200WS	DN100	3200	1880	220	964	450	75	280	1319
F-4300WS	DN100	4300	2530	220	982	530	75	280	1283
F-6500WS	DN150	6500	3825	285	1092	580	75	280	1447
F-8500WS	DN150	8500	5000	285	1091	650	75	280	1446
F-11000WS	DN200	11000	6470	340	1168	750	75	280	1523
F-14000WS	DN200	14000	8235	340	1201	800	75	280	1556

Given flows are at 7 barg pressure with reference to 20°C and 1 barg atmospheric air suction as per ISO 7183 standard



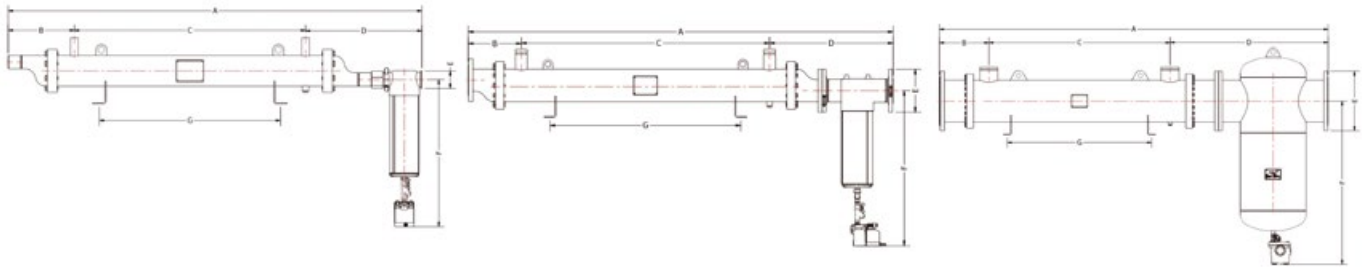
MWC SERIES MIKROPOR WATER-COOLED AFTERCOOLER SERIES

Mikropor is aware of the importance of high-quality compressed air. With the MWC Series, the aim is to provide customers with the highest quality compressed air by preventing high temperatures through the after cooler with low pressure drop.

- High separation efficiency
- Plug-in use with Mikropor water seperators
- Reliable design

With its practical flanged design, the MWC Series provides high-quality compressed air by preventing high temperatures with low pressure drop.

Technical Specifications



Model Name	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)
MWC-650	1870	300	1047	530	G 2 1/2"	666	840
MWC-900	1870	300	1047	530	G 2 1/2"	666	840
MWC-1100	1870	300	1047	530	G 2 1/2"	666	840
MWC-1500	2032	318	1137	577	G 3"	717	900
MWC-1800	2032	318	1137	577	G 3"	717	900
MWC-2100	2032	318	1137	577	G 3"	717	900
MWC-2800	2185	274	1275	632	DN100	796	1000
MWC-3400	2185	274	1275	632	DN100	796	1000
MWC-4500	2290	287	1360	645	DN100	884	1065
MWC-5400	2290	287	1360	645	DN100	976	1065
MWC-6200	2571	299	1400	874	DN150	1081	110
MWC-7500	2640	299	1400	944	DN150	1115	1100
MWC-9000	2805	342	1374	1090	DN200	1126	1100
MWC-11000	2805	342	1374	1090	DN200	1128	1100
MWC-15000	3006	382	1402	1222	DN300	1264	1135
MWC-20000	3002	378	1402	1222	DN300	1264	1135
MWC-25000	3301	562	1350	1390	DN350	1322	1135
MWC-30000	3317	562	1350	1405	DN350	1421	1135

MWC SERIES MIKROPOR WATER-COOLED AFTERCOOLER SERIES

Model Name	Air Flow to be Cooled (m^3/h)	Required Water Flow (m^3/h)	Compressed Air Connection Size	Water Separator Model	Water Connection
MWC-650	650	3	G 2"	G1200WS	G 1"
MWC-900	900	5	G 2"	G1200WS	G 1"
MWC-1100	1100	6	G 2"	G1200WS	G 1"
MWC-1500	1500	8	G 3"	G2200WS	G 1 1/2"
MWC-1800	1800	10	G 3"	G2200WS	G 1 1/2"
MWC-2100	2100	11	G 3"	G2200WS	G 1 1/2"
MWC-2800	2800	15	DN100	GO-HC-3400 WS	VIC 2"
MWC-3400	3400	18	DN100	GO-HC-3400 WS	VIC 2"
MWC-4500	4500	24	DN100	GO-HC-4500 WS	VIC 2 1/2"
MWC-5400	5400	29	DN100	GO-HC-5400 WS	VIC 2 1/2"
MWC-6200	6200	32	DN150	F6500WS	VIC 3"
MWC-7500	7500	39	DN150	F8500WS	VIC 3"
MWC-9000	9000	48	DN200	F11000WS	VIC 4"
MWC-11000	11000	58	DN200	F11000WS	VIC 4"
MWC-15000	15000	79	DN300	F17000WS	VIC 5"
MWC-20000	20000	105	DN300	F21000WS	VIC 5"
MWC-25000	25000	131	DN350	F25500WS	VIC 6"
MWC-30000	30000	157	DN350	F30000WS	VIC 6"

Given flows are at 7 barg pressure with reference to 20°C and 1 barg atmospheric air suction as per ISO 7183 standard

Compressed Air Inlet Temp.	Compressed Air Outlet Temp.	Compressed Air Pressure	Max. Allowable Working Pressure	Required Water Temp.	Water Outlet Temp.
120°C	25°C	7 barg	16 barg	15°C	23°C

All the given data has been calculated according to the conditions above.

G SERIES COMPRESSED AIR FILTERS

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 20 barg (290 psig)- 1/4" to 3" NPT/BSP pipe sizes. A protected auto float drain 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)

Y Coalescing Filter / Oil Removal
(Filter/Element air flow direction is inside to outside)

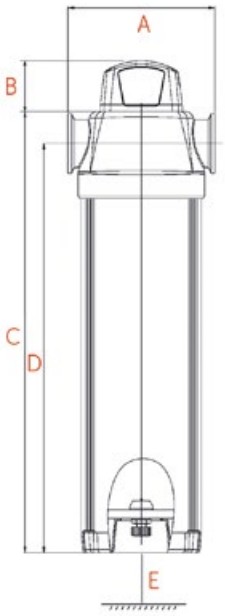
X General Purpose Filter / Water Removal
(Filter/Element air flow direction is inside to outside)

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 (barg)	psig	Correction Factor
1	14	0.50
3	44	0.71
5	72	0.87
7	100	1.00
9	130	1.12
11	160	1.22
13	188	1.32
15	218	1.44
16	232	1.50
18	260	1.57
20	290	1.63



Technical Specifications

Model	Connection Size			Flow Rate		Max. Working Pressure (barg)	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	220	198	125
G50	1/4"	3/8"	1/2"	50	30	20	M50	102	45	220	198	125
G100	3/8"	1/2"	-	100	58	20	M100	102	45	258	236	165
G150	1/2"	3/4"	1"	150	88	20	M150	123	45	303	276	205
G200	3/4"	1"	-	200	117	20	M200	123	45	367	340	265
G250	3/4"	1"	-	250	147	20	M250	123	45	407	380	315
G300	1"	1 1/4"	1 1/2"	300	176	20	M300	123	45	463	428	365
G500	1 1/4"	1 1/2"	-	500	294	20	M500	123	45	493	458	395
G600	1 1/4"	1 1/2"	-	600	353	20	M600	123	45	538	503	440
G851	1 1/4"	1 1/2"	2"	851	500	20	M851	160	45	626	584	495
G1210	2"	-	-	1210	712	20	M1210	160	45	696	654	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
Grade	P	X	Y	A
Particle Removal (Micron)	5	1	0.01	0.01
Max. Oil Carryover at 21°C (mg/m^3)	5	0.1	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

Indicator Type
Differential Pressure Gauge with Manual Reset

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

*For 0.003 mg/m^3 quality oil in the air, the inlet temperature should be 25°C

Notes

1) Grade A must not operate in oil saturated conditions.
2) Grade A elements should be replaced periodically to suit the applications but must be changed at least every six months.
3) Grade A will not remove certain gases including carbon monoxide and carbon dioxide. Please refer to works if in doubt.
4) Flow rates are based on a 7 barg operating pressure, for flows at other pressures use correction factor given above.
5) All filters are suitable for use with mineral and synthetic oils.
6) Gauge type pressure indicators are fitted to models G20 to G2620 as standard.
7) All filters are in conformity with the Pressure Equipment Directive (97/23/EC).
8) Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard.

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 m^3/h capacity and "X" represents the general purpose element.

GO SERIES COMPRESSED AIR FILTERS

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 20 barg (290 psig) - 1/4" to 3" NPT/BSP pipe sizes. A protected auto float drain 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.

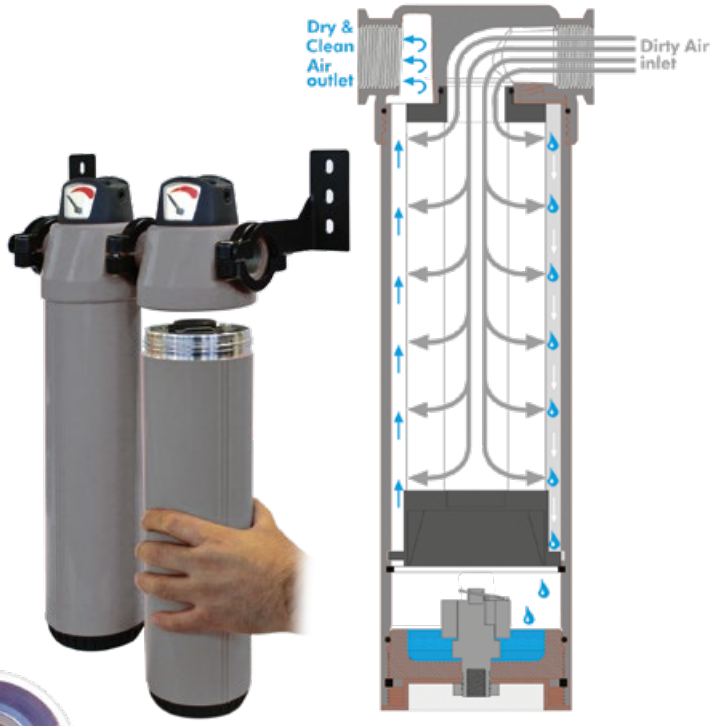
Drainage Ribs

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 (barg)	psig	Correction Factor
1	14	0.50
3	44	0.71
5	72	0.87
7	100	1.00
9	130	1.12
11	160	1.22
13	188	1.32
15	218	1.44
16	232	1.50
18	260	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 specialist 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.

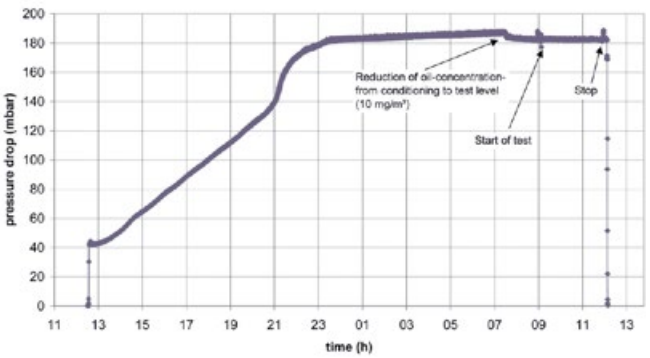
With Anodising

Without Anodising

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



Technical Specifications

Model	Connection Size			Flow Rate		Max. Working Pressure (barg)	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"	-	25	15	20	MO40	75	45	193	175
GO40	1/4"	3/8"	1/2"	40	24	20	MO25	102	45	215	193
GO50	1/4"	3/8"	1/2"	50	30	20	MO50	102	45	215	193
GO100	3/8"	1/2"	-	100	58	20	MO100	102	45	253	231
GO150	1/2"	3/4"	1"	150	88	20	MO150	123	45	298	271
GO200	3/4"	1"	-	200	117	20	MO200	123	45	362	335
GO250	3/4"	1"	-	250	147	20	MO250	123	45	402	375
GO300	1"	1 1/4"	1 1/2"	300	176	20	MO300	123	45	458	423
GO500	1 1/4"	1 1/2"	-	500	294	20	MO500	123	45	488	453
GO600	1 1/4"	1 1/2"	-	600	353	20	MO600	123	45	533	498
GO851	1 1/4"	1 1/2"	2"	851	500	20	MO851	160	45	623	581
GO1210	2"	-	-	1210	712	20	MO1210	160	45	693	651
GO1520	2"	2 1/2"	3"	1520	930	20	MO1520	194	45	726	669
GO1820	2 1/2"	3"	-	1820	1140	20	MO1820	194	45	865	808
GO2220	3"	-	-	2220	1380	20	MO2220	194	45	920	863
GO2700	3"	-	-	2700	1541	20	MO2700	194	45	1064	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	0.1	0.01	0.003
Max. Working Temperature (°C)	80	80	80	50°C*
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

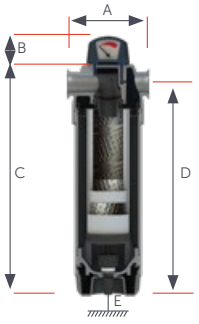
Indicator Type
Differential Pressure Gauge with Manual Reset

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

*For 0.003 mg/m^3 quality oil in the air, the inlet temperature should be 25°C

Notes

1) Grade A must not operate in oil saturated conditions.
2) Grade A elements should be replaced periodically to suit the applications but must be changed at least every six months.
3) Grade A will not remove certain gases including carbon monoxide and carbon dioxide. Please refer to works if in doubt.
4) Flow rates are based on a 7 barg operating pressure, for flows at other pressures use correction factor given above.
5) All filters are suitable for use with mineral and synthetic oils.
6) Gauge type pressure indicators are fitted to models GO25 to GO2700 as standard.
7) All filters are in conformity with the Pressure Equipment Directive (97/23/EC).
8) Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard.



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 m^3/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.

14 Models Between
35 m^3/h - 1200 m^3/h

Features

- 35 m^3/h- 1200 m^3/h air flow range
- NPT/BSP pipe sizes ranging from ¼" to 4"
- Aluminium construction without any pores
- **Options:**
  - "Standard Drain" having 1/8" connection size
  - "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 m^3/h.

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

6 Models Between
1550 m^3/h - 5400 m^3/h

GON SERIES COMPRESSED AIR FILTERS

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 1/8" 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
- Anodizing
- 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 m³			Particle Size (micron)	Concentration (mg/m³)	Vapor Pressure Dew Point	Liquid (g/m³)	Total Oil (Aerosol, Liquid v Vapor) (mg/m³)
	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 barg)
- 4 different ranges of filtration efficiency which offers an oppurtunity to operate at various different filtration applications.
- High filtration capacity, which can target the smallest contaminants (0.01 micron and above) at 20 barg pressure.
- Minimization of valuable compressed air loss with Zero-Loss Drain option
- Third Party Certified

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.

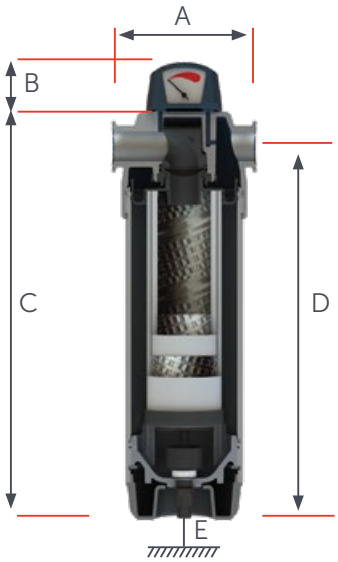
Drainage Ribs

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 (barg)	psig	Correction Factor
3	44	0.71
5	72	0.87
7	100	1.00
9	130	1.12
11	160	1.22
13	188	1.32
15	218	1.44
16	232	1.50
18	260	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

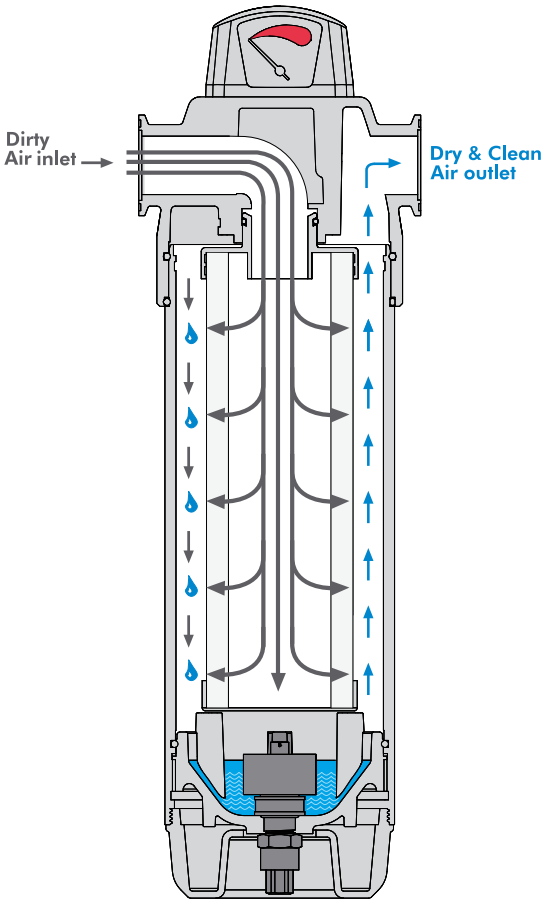
Anodising provides supreme corrosion resistance. Anodised surface treatment is proven to be better than other surface treatment methods such as Alocrome coating. Contact Mikropor to get comparison test results between competitor filters with Alocrome coating and Mikropor filters with anodising treatment.

Options

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

Alternative Filters

- "S" Grade: Sterile Filter
- "H" Grade: HOX 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.

GON SERIES COMPRESSED AIR FILTERS

Technical Specifications

Model	Connection Size			Flow Rate		Max. Working Pressure (barg)	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	37	214	192	19
GON-55	1/4"	3/8"	1/2"	55	33	20	MON55	90	37	252	230	19
GON-70	3/8"	1/2"	-	70	42	20	MON70	128	45	273	250	32
GON-100	3/8"	1/2"	-	100	60	20	MON100	128	45	303	279	32
GON-125	3/8"	1/2"	-	125	75	20	MON125	128	45	343	320	32
GON-150	3/4"	1"	-	150	90	20	MON150	140	45	369	335	31
GON-225	3/4"	1"	-	225	135	20	MON225	140	45	398	365	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	465	25
GON-600	1 1/2"	1 1/2"	2"	600	360	20	MON600	151	45	626	580	25
GON-800	1 1/4"	1 1/2"	2"	800	480	20	MON800	151	45	696	650	25
GON-1000	1 1/4"	1 1/2"	2"	1000	600	20	MON1000	151	45	851	805	25
GON-1200	1 1/4"	1 1/2"	2"	1200	720	20	MON1200	151	45	976	930	25
GON-HC-1550	2 1/2"	3"	-	1550	930	20	MONHC1550	240	45	707	660	25
GON-HC-2000	2 1/2"	3"	-	2000	1200	20	MONHC2000	240	45	862	815	25
GON-HC-2700	2 1/2"	3"	-	2700	1620	20	MONHC2700	240	45	987	940	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
Grade	P	X	Y	A
Particle Removal (Micron)	5	1	0.01	0.01
Max. Oil Carryover at 21°C (mg/m3)	5	0.1	0.01	0.003
Max. Recommended 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

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

*For 0.003 mg/m^3 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 barg atmospheric air suction as per ISO 7183. In order to calculate the flow capacities at other pressures please refer to the correction factor table.
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 barg 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 m^3/h capacity and "1" connection general purpose filter model with replacement filter element model "X".

F SERIES FLANGED AIR FILTERS

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

Minimum clearance for element change

External Float Drain

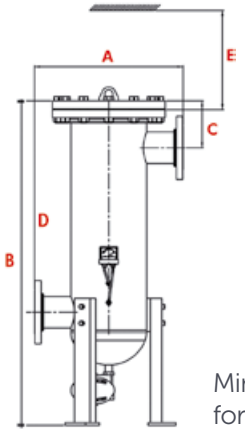
Mikropor external drain is designed to remove liquid condensation from collection points in a Compressed Air System.

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 (barg)	psig	Correction Factor
1	14	0.50
3	44	0.71
5	72	0.87
7	100	1.00
9	130	1.12
11	160	1.22
13	188	1.32
14	200	1.38



Minimum clearance for element change

High Performance Elements Inside

F SERIES FLANGED AIR FILTERS

Technical Specifications

Model	Drain Port Size	Inlet/Outlet Port Size	Flow Rate		Max. Working Pressure (barg)	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 barg atmospheric air suction as per ISO7183.

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/m3)	5	0.1	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

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

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

Notes

1) Grade A must not operate in oil saturated conditions.
2) Grade A elements should be replaced periodically to suit the applications but must be changed at least every six months.
3) Grade A will not remove certain gases including carbon monoxide and carbon dioxide. Please refer to works if in doubt.
4) Flow rates are based on a 7 barg operating pressure, for flows at other pressures use correction factor given above.
5) All filters are suitable for use with mineral and synthetic oils.
6) Other standards for flanged connections are available.
7) Direction of air flow is inside to out, through filter element.
8) Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard.

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-Gasing and Vacuum Coating
- Food Processing
- Nailers/Staplers
- Industrial Vacuum Processes
- Cement & Paper Processing

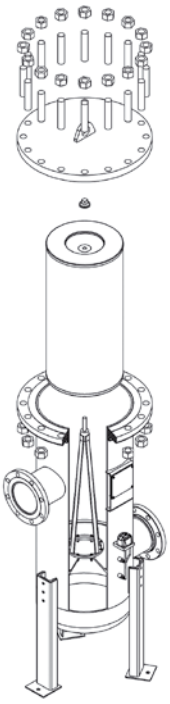
Design

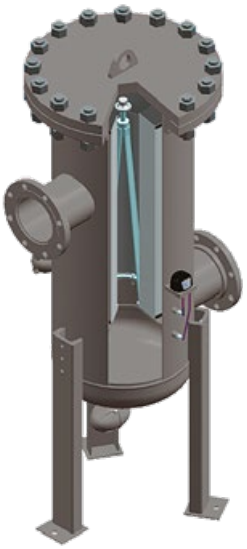
Mist Eliminators are designed to meet the demand for:

- 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 barg (200 psig)
- 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





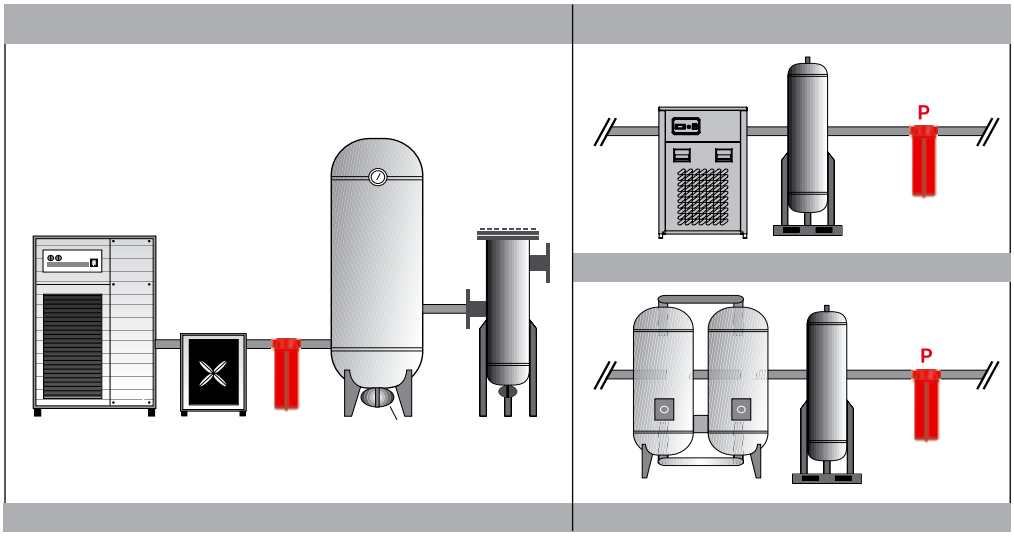
ELM SERIES MIST ELIMINATOR AIR FILTERS

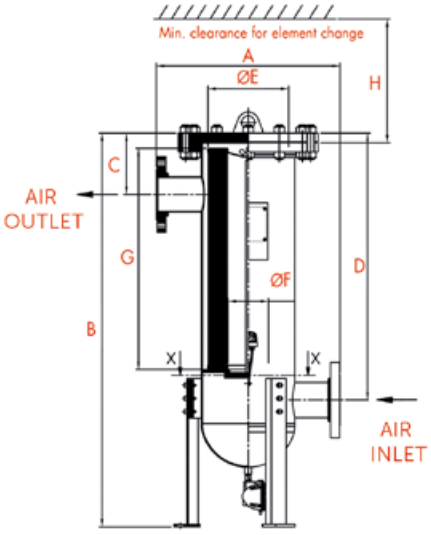
Correction Factor

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

Operating Pressure (barg)	psig	Correction Factor
1	14	0.50
3	44	0.71
5	72	0.87
7	100	1.00
9	130	1.12
11	160	1.22
13	188	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 (barg)	Housing Dimensions (mm)							
			(m^3/h)	(cfm)		A	B	C	D	Ø E	Ø F	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 ISO 7183 standard

G-ELM SERIES MIST ELIMINATOR AIR FILTERS

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 (m^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	87	258
G-150 ELM	0.01 ppm	45	1/2"	1/8"	123	109	305
G-200 ELM	0.01 ppm	50	1"	1/8"	123	109	369
G-250 ELM	0.01 ppm	70	1"	1/8"	123	109	409
G-300 ELM	0.01 ppm	85	1 1/2"	1/8"	123	109	463
G-500 ELM	0.01 ppm	100	1 1/2"	1/8"	123	109	493
G-600 ELM	0.01 ppm	130	1 1/2"	1/8"	123	109	538
G-851 ELM	0.01 ppm	170	1 1/2"	1/8"	160	138	626
G-1210 ELM	0.01 ppm	200	2"	1/8"	160	138	696

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

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

CARBOLESCER® SERIES

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.

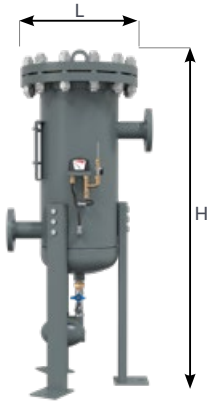
Models	ELM-C	G-ELM-C
Max. Remaining Oil Aerosol Content (20°C) (ppm)	0.003	0.003
Max. Operating Pressure (barg)	14	20
Max. Operating Temp. (°C)	50	
Min. Operating Temp. (°C)	4	

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 (barg)	Operating Pressure (psig)	Correction Factor
1	14	0.50
3	44	0.71
5	72	0.87
7	100	1.00
9	130	1.12
11	160	1.22
13	188	1.32
14	200	1.38

Inlet Temperature (°C)	Correction Factor
20	1.00
25	1.00
30	1.00
35	1.00
40	0.85
45	0.70
50	0.60
55	0.50
60	0.40
65	0.30



*The recommended maximum operating temperature is 50°C. This limit is set to ensure optimal adsorption capacity and service life. In standard products, the upper inlet temperature is 50°C, and performance cannot be guaranteed beyond this point.

CARBOLESCER® SERIES

Standard Features

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

Optional Feature

- Oil indicator

Technical Specification

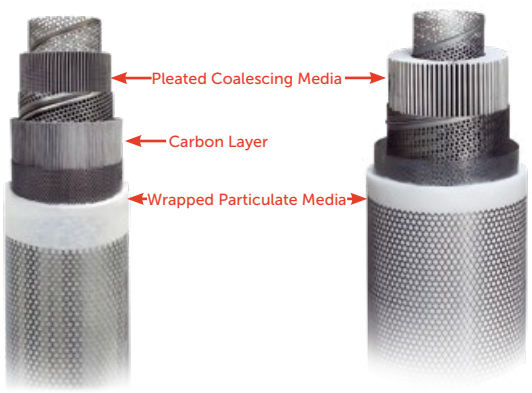
Models	Max. Remaining Oil Aerosol Content (@20°C)	Recommended Flow Rate (Nm^3/h @7 barg)	Inlet-Outlet Flange Size	Length (mm)	Height (mm)
G-100 ELM-C	0.003 ppm	35	1/2"	102	302
G-150 ELM-C	0.003 ppm	45	1/2"	123	352
G-200 ELM-C	0.003 ppm	50	1"	123	412
G-250 ELM-C	0.003 ppm	70	1"	123	454
G-300 ELM-C	0.003 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

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

This coalescing media removing oil contaminants as small as 0.01 micron.

Carbon layer, removing the residual oil content as 0.003 ppm.

Particulate media, removing dusts.



HP&HGH SERIES HIGH PRESSURE AIR FILTERS

High Pressure & High Performance

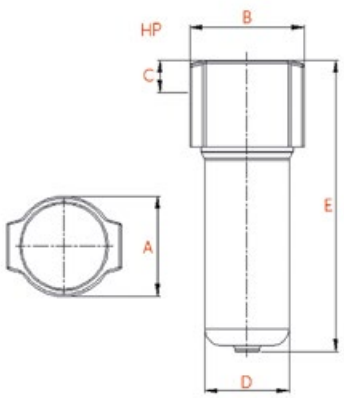
50 barg

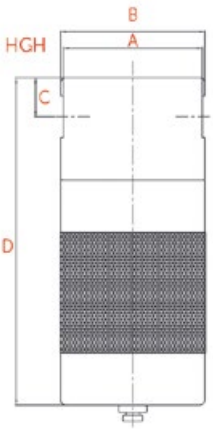
Features

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

Anodized 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 barg Aluminium design filters are anodised, where 350 barg Carbon Steel design Filters are epoxy electro powder coated.





350 barg

Technical Specifications

Model	Connection Size	Flow Rate at 50 barg		Max. Working Pressure (barg)	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	40	103	357
HP1200	1"	850	500	50	M200	123	140	40	103	357
HP1600	1 1/2"	1600	940	50	M250	123	140	40	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 barg		Max. Working Pressure (barg)	Element Model	Housing Dimensions (mm)			
		(m^3/h)	(cfm)			A	B	C	D
HGH100	1/4"	102	60	350	M25	113	116	26	155
HGH300	1/2"	298	175	350	M50	113	116	26	159
HGH600	3/4"	595	350	350	M100	109	116	32	207
HGH850	1"	850	500	350	M150	133	138	37	250
HGH1200	1"	1190	700	350	M200	133	138	37	314
HGH1600	1 1/2"	2240	1317	350	M250	128	138	44	368
HGH2500	2"	3500	2058	350	M2500	145	158	52	393
HGH3000	2 1/2"	4200	2470	350	M3000	160	178	58	386

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	0.1	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

Drain Type
HP - Manual Brass Drain
HGH - Manual Brass Drain

*For 0.003 mg/m^3 quality oil in the air, the inlet temperature should be 25°C

Notes

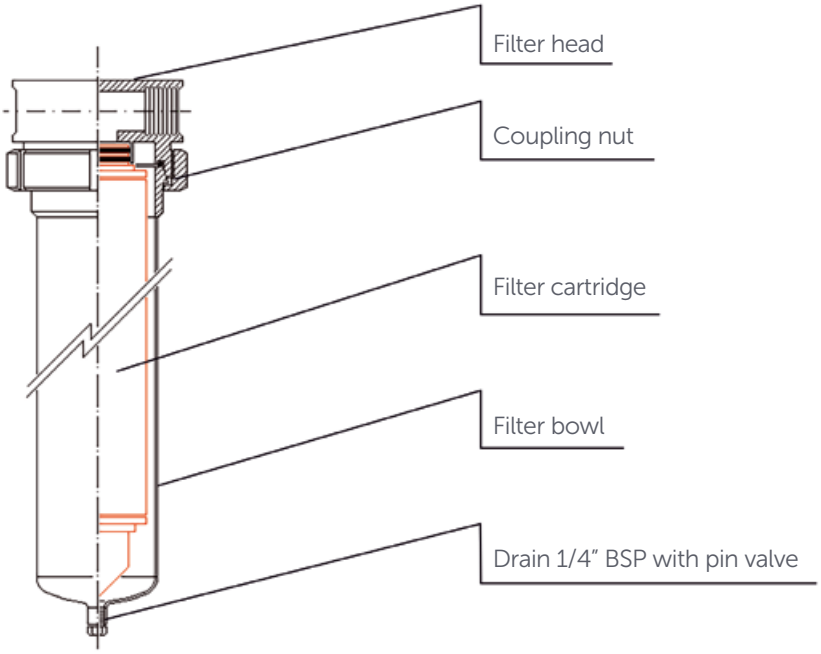
1) Grade A must not operate in oil saturated conditions.
2) Grade A elements should be replaced periodically to suit the applications but must be changed at least every six months.
3) Grade A will not remove certain gases including carbon monoxide and carbon dioxide.
4) Flow rates are based on 50 barg for HP and 350 barg for HGH filters.
5) All filters are suitable for use with mineral and synthetic oils.
6) Other standards for flanged connections are available.
7) 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 m^3/h capacity and "1" connection general purpose filter model with replacement filter element model "X".

Mikropor Sterile Filter Housing

MSF is a high-quality filter housing to provide safety and reliability in desired conditions. As the coupling body-bowl is designed to prevent unscrewing when in pressure, they are suitable in compressed air and gases.



Reference Conditions

REFERENCE CONDITIONS FOR ALL MSF MODELS*	
Design Pressure (@60°C)	20 barg
Working Pressure Condition	7/14 barg
Working Temperature Condition	21°C
**All values preferred to the directive 2014/68/EU*	

Mikropor PTFE Sterile Element

The MSF PTFE Membrane Filter offers 99.99% absolute filtration efficiency with a naturally hydrophobic PTFE membrane featuring high porosity and flow rate. This filter stands out with its low-pressure drop and long service life, while demonstrating broad chemical compatibility against strong alkalis, acids, and aggressive gases, and maintaining high temperature resistance. The MSF Membrane Series is available in 0.20 µm pore size.

Working Principle

The purpose of sterile filters in compressed air systems is to prevent the passage of microorganisms in compressed air and gases. These filters consist of a membrane structure with micro-pores. They effectively filter out more than 99.99%. To maintain flow rate and prevent accumulation on the filter surface during filtration, regular inspection and sterilization of the filters are required. Sterile filters are widely used in areas such as pharmaceutical production, biotechnology, food, and beverage production, medical device sterilization, and laboratory applications.

Sterilization

There are two types of sterilization process, both for preventing bacterial contamination by sterilizing filter elements and housings. It ensures filtration efficiency, extends filter lifespan, and maintains sterility in critical industries like food, beverage, and pharmaceuticals. This process guarantees product safety and regulatory compliance through efficient steam sterilization. These sterilization types are stated below including necessary steps.

NOTE: The recommended element replacement period is ≥100 cycles sterilization guaranteed.

1. Sterilization-in-Place

The process is introduced step-by-step below and the parameters are in the table below.

- Ensure the filter housing and element are in place
- All system connections except for steam inlet and condensate drain shall be closed
- Filtered steam (min. 1 bar) is supplied
- The required sterilization temperature (121-141°C) is maintained
- Steam for 10-30 minutes, depending on temperature shall be flowing constantly
- The condensate to prevent cold spots shall be drained continuously
- After sterilization process, sterile air or gas to cool the system shall be introduced
- The system integrity shall be checked (any leaks, etc.)
- The filter is now sterile and ready for use

2. Autoclave

The other sterilization process option is the autoclave. The elements can be sterilized by this process. The process is introduced step-by-step below and the parameters are in the table below.

- Air supply must be cut off. The steam used must be free of rust and other particles. Turn the filter housing counterclockwise to separate it from the head. During the sterilization process, steam pressure must not be allowed to fall below 1 barg or 121°C.
- To sterilize the dirty element with a new one, first turn the element counterclockwise and remove it from the tie rod. Condensate formed in the system during sterilization must be drained. Any air trapped inside the housing must be released. Loosen the drain at the bottom of the filter with a wrench to discharge the remaining air.
- After autoclaving, assemble the sterilized element by turning it clockwise to connect it to the rod. After sterilization, pressurize the system with process air or the gas used and allow it to cool until it is ready for use. Assemble the filter bowl to the filter head by turning it clockwise. Gently tighten the drain relief valve with a wrench as shown below.

NOTE: Generally, only the filter element is sterilized in an autoclave; however, both the housing and the element can be sterilized together if removed from the process, disassembled, and placed in the autoclave. Connect the system to the air supply to check for any leakages.

Temperatures	Cycle Times (min.)			
	Sterilization	Cooling	Reheating	Total
121-124°C	30	15	15	60
129-135°C	15	15	15	45
141°C	10	15	15	40

Specifications

Materials	Filter Media	Hydrophobic PTFE Membrane
	Support Layers	Polypropylene
	Micron Rating	0.2 µm
	Inner Core	Reinforced Polypropylene
	Outer Cage	Reinforced Polypropylene
	End Caps	Polypropylene
	Sealing Method	No Adhesives
	O-ring	Silicone
Cartridge Safety	Endotoxins	<0.25 EL/ml
	Extractables	0.03 g/10"

	7 Barg - 21°C (0.2 µm)			
Models (@7barg)	MSF-40	MSF-140	MSF-220	MSF-300
Element Models	MSE-40	MSE-140	MSE-220	MSE-300
Max. Flow Rate	40 m^3/h	140 m^3/h	220 m^3/h	300 m^3/h
Pressure Drop	56 mbar	78 mbar	66 mbar	63 mbar
Filter Body	316SS Stainless Steel			
Design Pressure	20 barg at 60°C			
IN/OUT Connections	1/4" BSP	1/2" BSP	3/4" BSP	1" BSP
Gasket Material	Silicone			
Drain	1/4" BSP with pin valve			

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

MSF SERIES STERILE FILTERS

	14 Barg - 21°C (0.2 µm)			
Models (@14barg)	MSF-40	MSF-140	MSF-220	MSF-300
Element Models	MSE-40	MSE-140	MSE-220	MSE-300
Max. Flow Rate	75 m^3/h	255 m^3/h	409 m^3/h	560 m^3/h
Pressure Drop	97 mbar	119 mbar	107 mbar	104 mbar
Filter Body	316SS Stainless Steel			
Design Pressure	20 barg at 60°C			
IN/OUT Connections	1/4" BSP	1/2" BSP	3/4" BSP	1" BSP
Gasket Material	Silicone			
Drain	1/4" BSP with pin valve			

* For other connection types such as NPT, Clamps, or Flange connections, please consult Mikropor technical team.
Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

Main Applications

- Various process filtrations
- Compressed air and gases filtration
- Sterile compressed air and gas filtration
- Food and beverage production
- Pharmaceutical production
- Biotechnology
- Medical device sterilization
- Laboratory applications
- Any need in sterile filtration application

Features and Benefits

- Hydrophobic PTFE Membrane with superior porosity
- Filtration efficiency ≥99.99%
- Low pressure drop
- Long service life
- Wide chemical compatibility, resistant to strong gases and solvents
- High temperature performance
- Specifically designed to ensure sterilization
- Filter head offers a smooth surface preventing bacteria growth
- Heavy duty construction for housing
- Filter bowl with minimum seams
- Four different cartridge lengths to a maximum of 2 m^2 of filter area
- The head-bowl coupling uses a threaded round nut for secure fastening under pressure, ensuring greater reliability than clamped systems

UP FILTERS ULTRA PARTICULATE FILTERS

Mikropor 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

The filtration of particles generated as a result of the process performed on various applications such as laser cutting is critical for the lifetime and efficiency of the equipments. Specifically in the laser cuting applications, particles and dust can accumulate in the optical components of the machines, reducing efficiency and causing damage. By preventing these build-ups, filters extend the life of the equipment and reduce maintenance costs.

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

Features

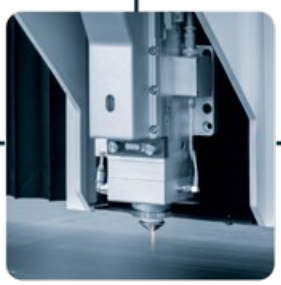
In the laser cutting and other couple of critical applications, machine inlet air is required at Class 1 level for particules in accordance with the ISO 8573 standard. This is because the particles formed during laser application cause a danger to both the last product, machine service life, and employee health during processes. Ultra particle filters can provide Class 1 for particules specifically as used together with the water, oil, and particle filters required beforehand.

Filter Type

UP Ultra Particulate Filter

Human/Employee

Machine Service Life



Laser Cutting Vapor Particles

Final Product

UP FILTERS ULTRA PARTICULATE FILTERS

Technical Specifications

Model	Recommended Flow Rate (m^3/h @7barg)	Maximum Operating Pressure (barg)	Inlet-Outlet Size
UP-20	20	20	1/4" , 1/2"
UP-40	40	20	1/4" , 3/8" , 1/2"
UP-25	25	20	1/4" , 3/8" , 1/2"
UP-50	50	20	1/4" , 3/8" , 1/2"
UP-100	100	20	3/8" , 1/2"
UP-150	150	20	1/2" , 3/4" , 1"
UP-200	200	20	3/4" , 1"
UP-250	250	20	3/4" , 1"
UP-300	300	20	1" , 1 1/4" , 1 1/2"
UP-500	500	20	1 1/4" , 1 1/2"
UP-600	600	20	1 1/4" , 1 1/2"
UP-851	851	20	1 1/4" , 1 1/2" , 2"
UP-1210	1210	20	2"
UP-1520	1520	20	2 1/2" , 3"
UP-1820	1820	20	3"
UP-2220	2220	20	3"
UP-2620	2620	20	3"

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

Model	Recommended Flow Rate (m^3/h @50barg)	Maximum Operating Pressure (barg)	Inlet-Outlet Size
UP-H-100	71	50	1/2''
UP-H-300	212	50	1/2''
UP-H-600	425	50	3/4''
UP-H-850	595	50	1''
UP-H-1200	850	50	1''
UP-H-1600	1600	50	1 1/2''
UP-H-2500	2500	50	2''
UP-H-3000	3000	50	2 1/2''

Given flows are at 50 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

MZL SERIES ZERO LOSS CONDENSATE DRAIN

The Mikropor MZL Series Zero Loss Condensate Drains are designed for zero loss of compressed air thus eliminating excess amount of compressed air waste. The MZL Series have digital control features that provides alarms when drain is clogged and to alert the user when regular maintenance is required unlike standard mechanical drains. The MZL Series is also extremely easy to Troubleshoot if a problem arises.

The MZL Series Zero Loss Condensate Drains can be used on all Compressed Air Filters, Dryers, After-Coolers, Storage Tanks, and Water Separators or anywhere within the Compressed Air System where water may be present.

**MZL-6000

Zero compressed air loss

Ease on service and maintenance

Compact and user-friendly design

Advantages of MZL Series

The MZL Series have capacitive sensors to detect the condensate level which activates the drain when needed. When activated only the accumulated water is expelled from the drain leaving the compressed air in the system thus no loss of air escapes, only the water.

The MZL Series digital alarms alerts the user in case the drain fails, or maintenance is required. Easy to Troubleshoot.

There is an integrated mesh strainer to help protect the valve from any downstream dirt from clogging the MZL Series drain.

All MZL Models are rated for IP65 / NEMA-4 as standard.

All MZL Models can be connected to all compressed air systems thanks to the standard inlet and outlet connection size.

MZL SERIES ZERO LOSS CONDENSATE DRAIN

Model	Voltage	Inlet Diameter	Outlet Diamater	Working Pressure	Working Temperature	Width (mm)	Length (mm)	Height (mm)
*MZL-600	115 VAC 50-60 Hz	G 1/2"	G 1/4" Hose Fittings	0-16 barg	1-50°C	142	92	77
	230 VAC 50-60 Hz							
	24 VAC 50-60 Hz							
	24 VDC							
**MZL-6000	115 VAC 50-60 Hz	G 1/2"	G 1/4" Hose Fittings	0-16 barg	1-50°C	87	179	115
	230 VAC 50-60 Hz							
	24 VAC 50-60 Hz							
	24 VDC							
MZL-6000-HP	115 VAC 50-60 Hz	G 1/2"	G 1/4" Hose Fittings	0-50 barg	1-50°C	87	179	115
	230 VAC 50-60 Hz							
	24 VAC 50-60 Hz							
	24 VDC							

MZL Series Air Flows (m^3/h)			
Model Name	Compressor	Filter	Dryer
*MZL-600	600	6000	1200
**MZL-6000	6000	60000	12000
MZL-6000-HP	6000	60000	12000

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

* MZL-600

Dry-contact (potential free relay) alarm output

Integrated mesh filter

LED Power indication

03

COMPRESSED AIR DRYERS

COMPRESSED AIR DRYERS

MKE PRO SERIES DIGITAL CYCLING - INTEGRATED FILTRATION

Key Features

- 10 years warranty on Aluminum Heat Exchanger
- Wide Range of Capacities: The MKE-PRO series caters to diverse needs with models ranging from MKE-PRO 23 to MKE-PRO 12500, supporting air flow capacities from 23 m^3/h to 12500 m^3/h
- Integrated Filtration
- Advanced, Digital Control System
- Comply with the ISO 7183 Standard
- Fully Hermetic and contains greenhouse gas covered by the Kyoto Protocol
- Low GWP Refrigerant, R513a (631)
- Electronic Zero Loss Drain (Optional for Monophase Units, Standard for Triphase Units)

Advantages

- New Technology, Aluminum Microchannel Refrigerant Condenser
- Low pressure drop ensures reduced compressor power consumption
- 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 next generation R513a refrigerant is available across all models
- Fully hermetic design
- A state-of-the-art heat exchanger design provides the highest cost saving in the industry
- Pressure switches control the condenser's fan motor for saving energy and letting the system operate at desired conditions

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-PRO Series Refrigerant Circuit and Insulation

Mikropor Refrigerated Air Dryers are engineered to deliver superior performance by employing R513a, an environmentally responsible refrigerant that operates efficiently under both low and high temperature conditions. With low system pressure, the service life of the compressor is significantly extended. Mikropor's advanced design integrates oversized condensers, enhanced heat exchangers, and an exceptional zero loss drain system, ensuring consistent dew point levels even under extreme ambient conditions. Mikropor Refrigerated Air Dryers offer the highest technology with its custom solutions.

Digi-Pro Digital Controller

- Digital Dew Point Monitoring
- Energy-Saving Mode Display
- Periodic Maintenance Interval Display
- Status Report
- Run-hours Meter
- Fahrenheit and Celsius Selection

ESD Digital Controller

- Energy Saving: Automatically shuts down and dryer when not in use significantly reducing energy consumption
- Monitoring Capability
- Advanced Alarm Functions
- Troubleshooting Assistance
- Efficiency Optimization

Electrical Components Are Isolated from the Refrigeration Circuit

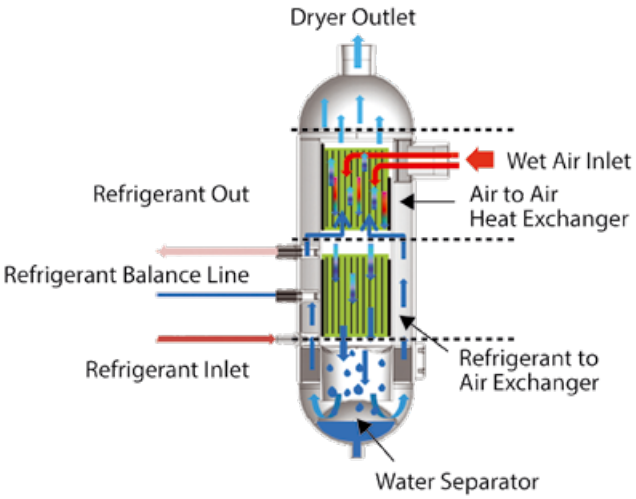
In Mikropor dryers, electrical wiring is physically separated from the refrigeration section, ensuring enhanced safety and ease of service. The electrical box is externally mounted and accessible without opening the dryer panels. This design eliminates the need to interfere with the refrigeration circuit during electrical maintenance, allowing for faster and safer service operations.

Sealed for Performance – Hermetic Design Excellence

Mikropor Dryers are built with a fully hermetic design, providing complete protection against external contaminants. The sealed refrigeration circuit ensures maximum reliability, zero leakage and vitually no maintenance requirements. This closed system extends the service life of internal components while guaranteeing stable, energy-efficient performance even under

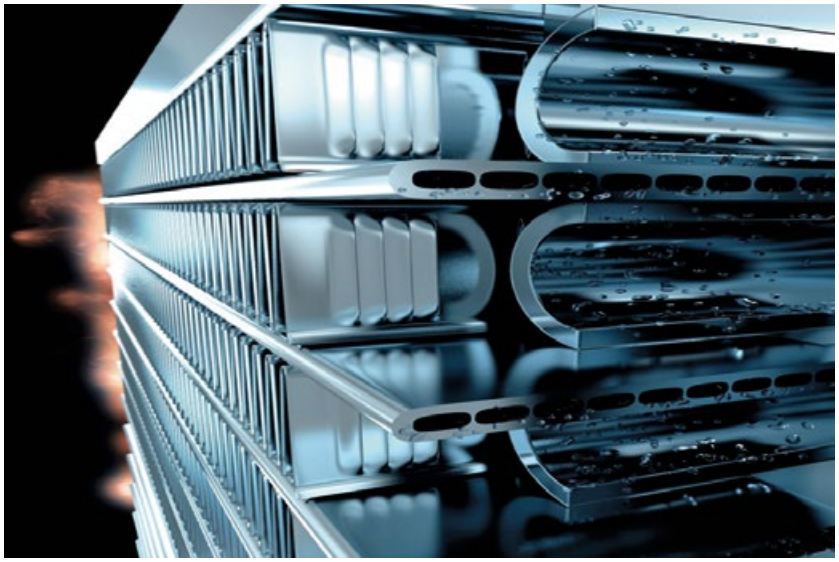
Aluminum Plate Heat Exchanger

The system features a very low pressure drop and utilizes thin aluminum plates with a high heat transfer surface area for maximum efficiency. Its external thick cylindrical wall provides structural strength, while the integrated water separator is optimized to deliver the best performance.

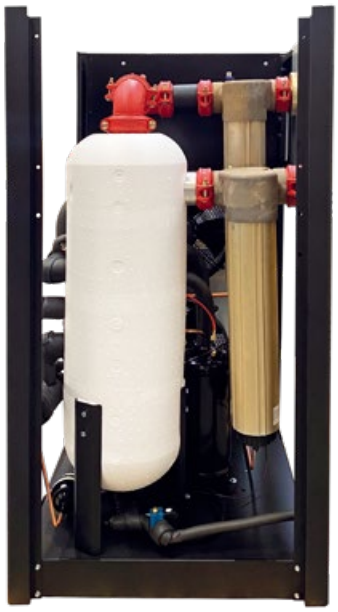


New Technology, Aluminum Microchannel Refrigerant Condenser

The system is designed to minimize energy loss through low pressure drop and offers high heat transfer capacity for efficient operation. Its surface coating provides protection against corrosive environments, ensuring long-term durability. Additionally, it requires less refrigerant gas and is resistant to galvanic reactions and corrosion.



MKE PRO SERIES DIGITAL CYCLING - INTEGRATED FILTRATION



Zero Clearance Compressed Air Filters with High Performance Elements

Integrated dual pre&post filtration system for capacities between 3300-5800 m^3/h

All Mikropor Refrigerated Air Dryers are equipped with a standard Compressed Air Filter Kit, including two high-performance coalescing filters:

X Element: Removes water and particles down to 1 micron

Y Element: Removes oil aerosols down to 0.01 ppm

The zero-clearance design allows element replacement in minutes. Developed with field feedback, this service-friendly design ensures reliable performance until the next 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.

Electronic Zero Loss Drain

The Mikropor MZL Series Zero Loss Condensate Drains are designed for zero loss of compressed air thus eliminating excess amount of compressed air waste. The MZL Series have digital control features that provides alarms when drain is clogged and to alert the user when regular maintenance is required unlike standard mechanical drains. The MZL Series is also extremely easy to Troubleshoot if a problem arises.

Zero-Loss Drain

Correction Factor for MKE-PRO Series

Inlet Temperature (°C)	F1	Ambient Temperature (°C)	F2	Pressure (barg)	F3
30	1.29	20	1.05	4	0.80
35	1.00	25	1.00	6	0.94
40	0.92	30	0.98	7	1.00
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	0.70	14	1.22
-	-	-	-	16	1.25

Choosing the Correct Dryer

If an air compressor delivers 200 m^3/h at 6 barg, the dryer inlet temperature is 40 °C and ambient temperature is 30 °C. Please choose your Dryer Model as follows; 200 / 0.94 / 0.92 / 0.98 = 236 m^3/h Dryer Model for this application is MKE-PRO 305

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

MKE PRO SERIES DIGITAL CYCLING - INTEGRATED FILTRATION

Model	Capacity (m^3/h)	Power Supply* (V / Ph / Hz)	Connection Size	Filter Quantity and Type	Replacement Filter Element Kit	Pressure Drop (mbar)	Control Type	Dimensions		
								Length (mm)	Width (mm)	Height (mm)
MKE-PRO 23	23	230 / 1 / 50	1/2"	Integrated - GKON-65 X/Y	MKON65 KIT	100	Digi-Pro	372	369	792
MKE-PRO 38	38	230 / 1 / 50	1/2"	Integrated - GKON-65 X/Y	MKON65 KIT	150	Digi-Pro	372	369	792
MKE-PRO 53	53	230 / 1 / 50	1/2"	Integrated - GKON-65 X/Y	MKON65 KIT	250	Digi-Pro	372	369	792
MKE-PRO 70	70	230 / 1 / 50	1/2"	Integrated - GKON-65 X/Y	MKON65 KIT	220	Digi-Pro	372	369	792
MKE-PRO 100	100	230 / 1 / 50	3/4"	Integrated - GKON-155 X/Y	MKON155 KIT	90	Digi-Pro	454	473	932
MKE-PRO 155	155	230 / 1 / 50	3/4"	Integrated - GKON-155 X/Y	MKON155 KIT	195	Digi-Pro	454	473	932
MKE-PRO 190	190	230 / 1 / 50	3/4"	Integrated - GKON-155 X/Y	MKON155 KIT	285	Digi-Pro	454	473	932
MKE-PRO 210	210	230 / 1 / 50	1 1/2"	Integrated - GKON-405 X/Y	MKON405 KIT	195	Digi-Pro	556	556	975
MKE-PRO 305	305	230 / 1 / 50	1 1/2"	Integrated - GKON-405 X/Y	MKON405 KIT	285	Digi-Pro	556	556	975
MKE-PRO 375	375	230 / 1 / 50	1 1/2"	Integrated - GKON-405 X/Y	MKON405 KIT	175	Digi-Pro	556	556	975
MKE-PRO 495	495	230 / 1 / 50	2"	Integrated - GKON-805 X/Y	MKON805 KIT	275	Digi-Pro	648	678	1277
MKE-PRO 623	623	230 / 1 / 50	2"	Integrated - GKON-805 X/Y	MKON805 KIT	215	Digi-Pro	648	678	1277
MKE-PRO 930	930	230 / 1 / 50	2"	Integrated - GKON-1205 X/Y	MKON1205 KIT	135	Digi-Pro	947	727	1500
MKE-PRO 1200	1200	230 / 1 / 50	2"	Integrated - GKON-1205 X/Y	MKON1205 KIT	170	Digi-Pro	947	727	1500
MKE-PRO 1388	1388	400 / 3 / 50	3"	Integrated - GKON-HC-1805 X/Y	MKON-HC1805 KIT	310	Digi-Pro	948	798	1580
MKE-PRO 1800	1800	400 / 3 / 50	3"	Integrated - GKON-HC-1805 X/Y	MKON-HC1805 KIT	255	Digi-Pro	948	798	1580
MKE-PRO 2500	2500	400 / 3 / 50	3"	Integrated - GKON-HC-2775 X/Y	MKON-HC2775 KIT	170	Digi-Pro	1163	778	1842
MKE-PRO 2775	2775	400 / 3 / 50	3"	Integrated - GKON-HC-2775 X/Y	MKON-HC2775 KIT	310	Digi-Pro	1163	778	1842
MKE-PRO 3330	3330	400 / 3 / 50	DN100 Flange	Integrated - GKO5850M X/Y	MKO 5850 KIT	270	Digi-Pro	1577	993	2026
MKE-PRO 3915	3915	400 / 3 / 50	DN100 Flange	Integrated - GKO5850M X/Y	MKO 5850 KIT	380	Digi-Pro	1577	993	2026
MKE-PRO 5085	5085	400 / 3 / 50	DN100 Flange	Integrated - GKO5850M X/Y	MKO 5850 KIT	320	ESD-3	1647	1077	2126
MKE-PRO 5850	5850	400 / 3 / 50	DN100 Flange	Integrated - GKO5850M X/Y	MKO 5850 KIT	350	ESD-3	1647	1077	2126
MKE-PRO 6975	6975	400 / 3 / 50	DN150 Flange	Externally Connected - F6500M X/Y**	Not Included	320	ESD-3	2188	1062	2144
MKE-PRO 7875	7875	400 / 3 / 50	DN150 Flange	Externally Connected - F8500M X/Y**	Not Included	350	ESD-3	2188	1062	2144
MKE-PRO 9000	9000	400 / 3 / 50	DN150 Flange	Externally Connected - F8500M X/Y**	Not Included	350	ESD-3	2247	1200	2164
MKE-PRO 10500	10500	400 / 3 / 50	DN200 Flange	Externally Connected - F11000M X/Y**	Not Included	350	ESD-3	2247	1200	2164
MKE-PRO 12500	12500	400 / 3 / 50	DN200 Flange	Externally Connected - F14000M X/Y**	Not Included	350	ESD-3	2547	1550	2222

*Please contact with your responsible Sales/CRM responsible for alternative voltage options
** Not integrated and not included in standard package
Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

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

MVSD SERIES VARIABLE SPEED REFRIGERATED AIR DRYERS

Mikropor's next generation MVSD Series compressed air dryer, combines the most advanced technologies in the industry. With Variable Speed technology, the new R513a refrigerant, and hermetically sealed refrigerant cycle, this machine provides your facility the maximum efficiency, low energy consumption, and environmentally friendly solution.

Key Features

- Environmentally Friendly
- Low GWP Refrigerant with R513a
- Variable Speed (DC Inverter) Technology
- Hermetically Sealed Refrigerant Cycle
- Integrated Filters
- Touch Screen
- Electronic Zero-Loss Drain
- EC (Electronically Commutated) Fan
- Less Refrigerant Gas
- Refrigerant-Oil Separator
- Condenser Filter
- 10 Year Warranty on Aluminum Plate Heat Exchanger

Key features are standard for every MVSD models.

With all specifications combined, MVSD Series answers many specific requirements of the industry and customers by all itself.

Optional Features

- Integrated Web Services, WiFi & GSM Modules
- TCP/IP Communication
- BACNET, SNMP, MODBUS
- Data Logger
- Dew Point Sensor

Built on Years of Accumulated Expertise, Mikropor Delivers Striking Improvements in Energy Efficiency

Variable Speed refrigerated air dryers automatically adjust the speed of the compressor and fan motor according to the actual air demand. This ensures that only the required amount of energy is consumed, preventing unnecessary power usage.

Environmental Improvement

- The use of environmentally friendly R-513A refrigerant further enhances energy efficiency and reduces environmental impact. With our Microchannel Condenser, we use %35 less refrigerant gas in MVSD. That means 35% less carbon emissions.

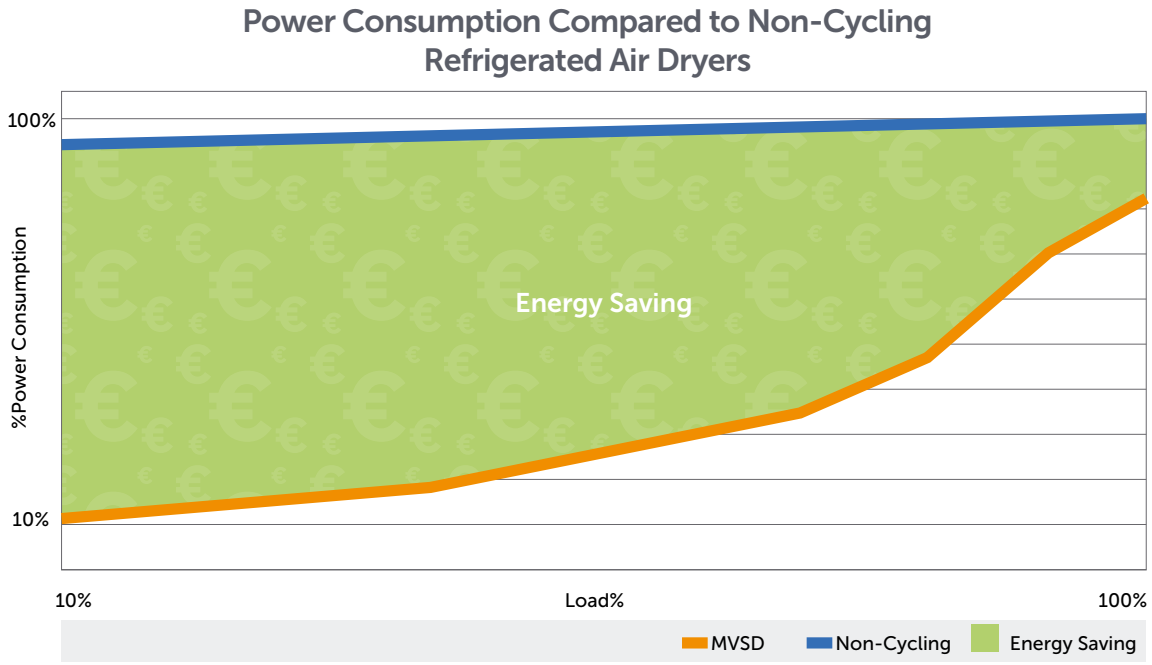
Cost Savings Keep the Power

- Real-time factory tests show that MVSD consumes up to three times less energy compared to non-cycling units.
- Thanks to the hot gas bypass line, we prevent issues such as freezing and ensure reliable operation for many years.
- High performance when needed, and low energy consumption when demand is low.
- Prevents excessive operation, reducing electricity costs significantly.
- Less mechanical stress means longer equipment lifespan.

MVSD SERIES VARIABLE SPEED REFRIGERATED AIR DRYERS

We offer maximum energy savings with less refrigerant gas, an oil separator, a condenser filter, and integrated filters.

While traditional fixed-speed dryers operate at full capacity all the time, variable speed models ramp up only when necessary. This results in both lower energy usage and a more sustainable operation.



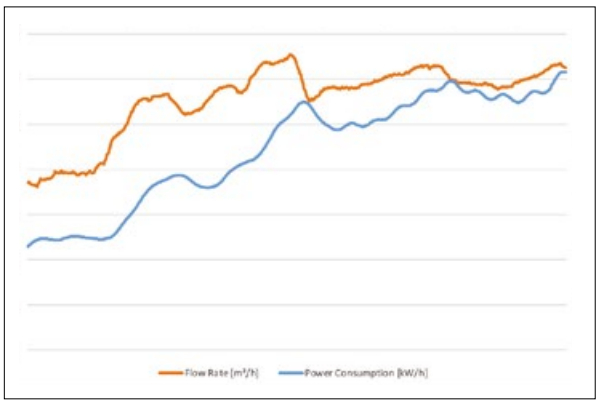
With Mikropor's innovative design, the compressor can operate at a minimum level (as low as 17% capacity), ensuring maximum efficiency while maintaining low power consumption.

Electronic Zero-Loss

Electronic zero-loss drains increase energy efficiency by discharging condensate without losing compressed air. Since the compressed air loss from the system is eliminated through the discharge, annual 3-5% air loss is also prevented as a supportive energy saving to the dryer energy savings.

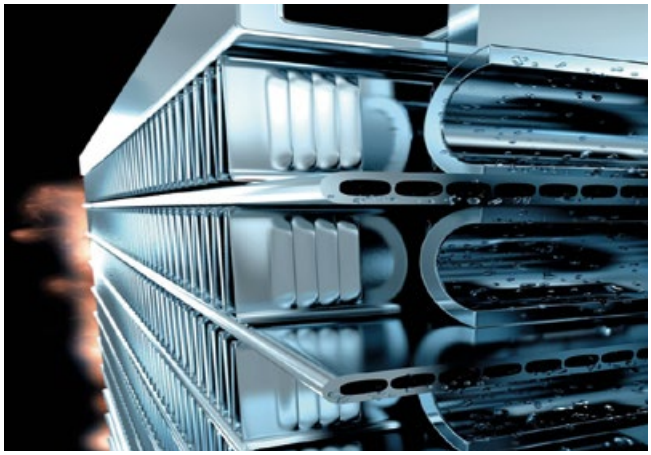
Variable Speed (Inverter) Technology

Variable Speed (Inverter) Technology is a complete solution for energy efficiency. By automatically and precisely adjusting motor speed according to the system's actual needs, it provides up to %70 savings under partial load conditions. It minimizes the effects of pressure fluctuations and maintains system operating conditions consistently at design values, delivering high performance. The soft start and stop feature reduces mechanical wear on equipment, extending its lifespan and significantly lowering maintenance costs. Compared to other compressors, it offers quieter operation. With energy savings and low carbon emissions, it contributes strongly to both operational costs and environmental sustainability.



Refrigerant - Oil Separator

Mikropor's Oil Separator, developed by Mikropor through advanced engineering, is a critical component that separates oil from the refrigerant and returns it to the compressor. This ensures optimal compressor lubrication while keeping mechanical wear and temperatures under control. By preventing oil from reaching the evaporator and condenser, it improves heat transfer, enhances system performance, and contributes to energy efficiency. Operating with up to 99% efficiency, it delivers reliable and consistent performance. It minimizes maintenance requirements and extends the service life of the cooling system.



Microchannel Condenser

Thanks to its flat, multi-channel tubes and integrated fins, it offers a much larger heat transfer surface compared to conventional condensers. This accelerates heat rejection, increases system efficiency, and reduces energy consumption. Its compact and lightweight design simplifies installation, while the 30% less refrigerant charge minimizes environmental impact. Made from aluminum resistant to galvanic corrosion, it delivers long-lasting and reliable performance.

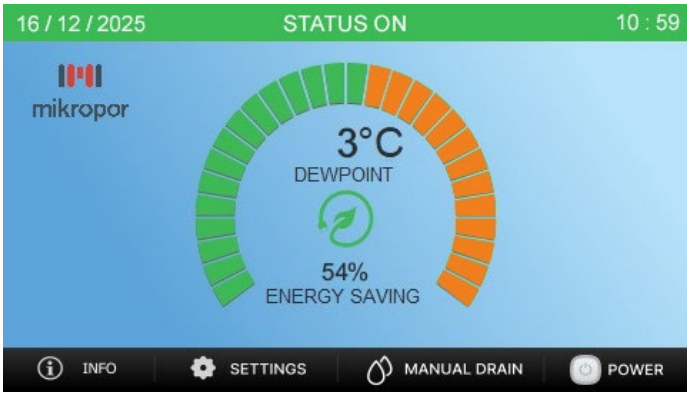
Power+ DC Inverter for BLDC Compressors

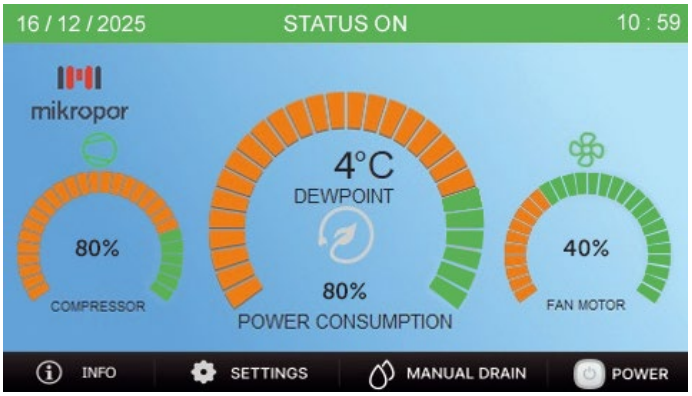
Power+ Inverter (PS2) is a high-tech drive solution specifically developed for BLDC Refrigerant compressors. Its advanced design optimizes system performance and enhances energy efficiency; both active and passive filters minimize harmonic effects, preventing electrical fluctuations and potential performance losses. In the event of a fault, the Class B certified software and integrated STO safety module ensure compressor safety and maintain uninterrupted system operation

EC Fan

EC (Electronically Commutated) fan technology has been developed as a solution for the need of variable speed control. Although AC fans can be controlled with drivers, this method is inefficient and may reduce the fan's lifespan. Fan control is of critical importance in air dryer systems. With self-regulates it's speed, requiring no additional driver. EC fans provide maximum efficiency and energy savings with high reliability and performance.

MVSD SERIES VARIABLE SPEED REFRIGERATED AIR DRYERS





Controller

Thanks to Mikropor's user-friendly touch controller, the machine's real-time energy efficiency can be conveniently monitored. In addition, the operating capacities of the fan motor and compressor, as well as temperature values, can be easily tracked. Machine warnings and maintenance alarms are displayed on the touch screen. Easy access to the weekly work schedule, energy-saving monitoring screen, and graphical working trends provides ease of operation to user.

Correction Factors

Inlet Temperature (°C)	F1	Ambient Temperature (°C)	F2	Pressure (barg)	F3
30	1.29	20	1.05	4	0.80
35	1.00	25	1.00	6	0.94
40	0.92	30	0.98	7	1.00
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	0.70	14	1.22
-	-	-	-	16	1..25

Technical Data

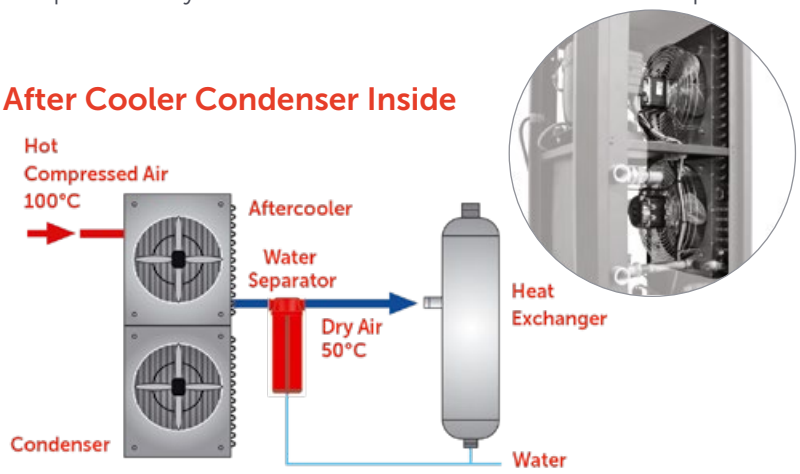
Model	Capacity (m^3/h)	Power Supply (V / Ph / Hz)	Connec-tion Size	Filter Quantity and Type	Replacement Filter Element Kit	Pressure Drop (mbar)	Control Type	Dimensions		
								Length (mm)	Width (mm)	Height (mm)
MVSD 1200	1200	400 / 3 / 50	2"	Integrated - GKON1205 X/Y	MKON1205 KIT	170	Variable Speed	800	950	1530
MVSD 1800	1800	400 / 3 / 50	3"	Integrated - GKON-HC-1805 X/Y	MKON-HC1805 KIT	255	Variable Speed	1000	950	1550
MVSD 2775	2775	400 / 3 / 50	3"	Integrated - GKON-HC-2775 X/Y	MKON-HC2775 KIT	140	Variable Speed	1160	780	1720
MVSD 3915	3915	400 / 3 / 50	DN100 Flange	Integrated - GKO5850M X/Y	MKO 5850 KIT	110	Variable Speed	1580	995	1900

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

MH SERIES HIGH TEMPERATURE

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)	Power Supply (V / Ph / Hz)	Connection Size	Dimensions (mm)		
				Width	Length	Height
MH-31	31	230 / 1 / 50	1/2"	447	448	957
MH-52	52	230 / 1 / 50	1/2"	447	448	957
MH-78	78	230 / 1 / 50	1/2"	447	448	957
MH-106	106	230 / 1 / 50	3/4"	447	448	957
MH-160	160	230 / 1 / 50	3/4"	512	627	877
MH-212	212	230 / 1 / 50	3/4"	512	627	877

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

Correction Factor for MH Series

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

Pressure (barg)	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	1.00
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	1.00	-	-
11	0.96	65	1.06	40	0.96	-	-
12	1.00	82	1.00	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

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.

ISO International Organization for Standardization CLASS 0 ISO 8573-1

MCY SERIES THERMAL MASS/CYCLING INTEGRATED FILTRATION

kW Saver

Compact Design

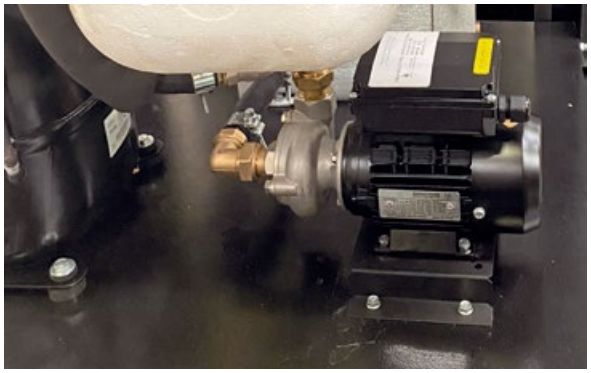
MCY Series Air Dryers are highly reliable, efficient, have small space requirements and offer low cost ownership. Integration of pre/post filtration within the dryer cabinet saves labour time, installation cost and valued production space. The compact size also offers flexibility and economy during transportation.

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

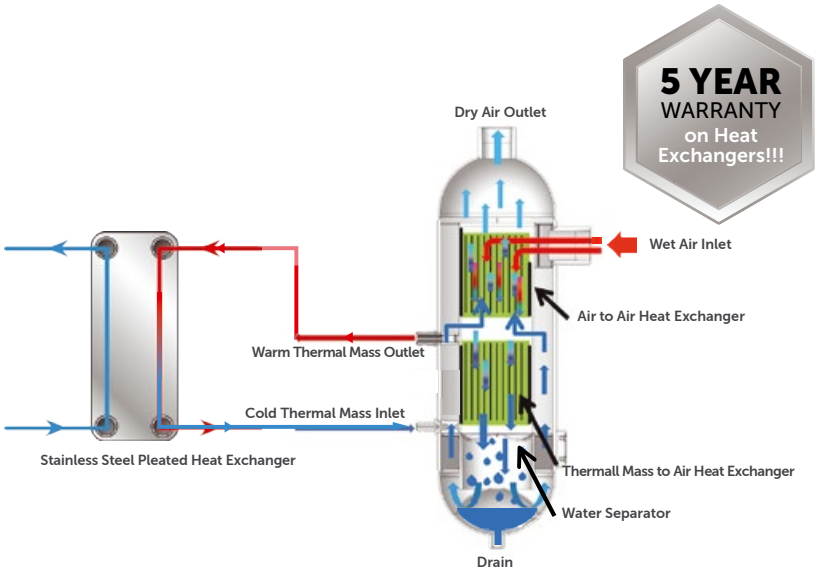
Thermally Optimized Encapsulated Design

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

High Strength Aluminium Design

Large Surface Area for Heat Transfer

Robust Cylindrical Casing



5 YEAR WARRANTY on Heat Exchangers!!!

Scroll Refrigerant Compressors:

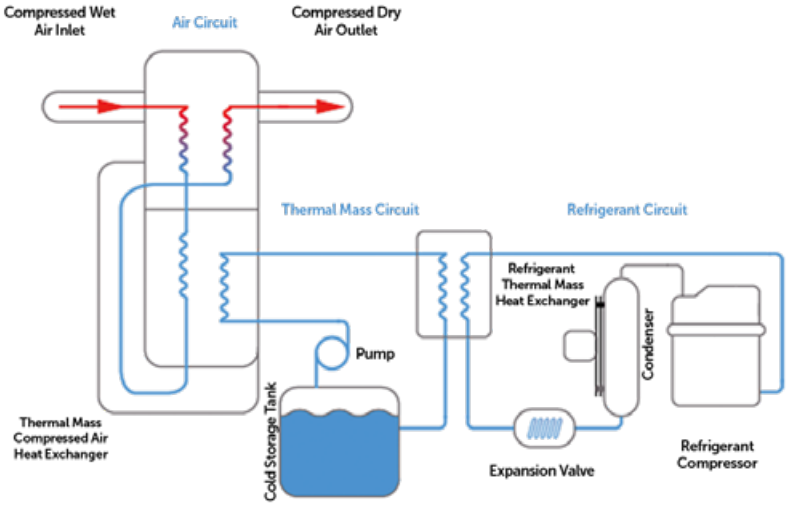
- Have fewer moving parts
- Offer smoother and quieter operation
- And are more reliable and more efficient than reciprocating types.

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



Digi-Pro Controllers (210 Nm^3/h to 930 Nm^3/h units)

Mikropor MCY Series Air Dryers incorporate exclusive Digi-Pro series controller. 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
- Run-hours meter
- Fahrenheit and Centigrade selection

Easy Service

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).

ESD Controller (1200 Nm^3/h to 12500 Nm^3/h units)

Mikropor MCY Series Air Dryers of larger capacity have ESD Digital Controller. With the help of the highly engineered 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. 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 GKON Series Filter integration features
- Electronic Zero-Loss Drain system integration features
- System depressurization whenever the service needed via Electronic Zero-Loss Drain's "manual drain" function
- No compressed air loss
- Low maintenance design
- Reliable
- Robust low operating cost
- Simple installation

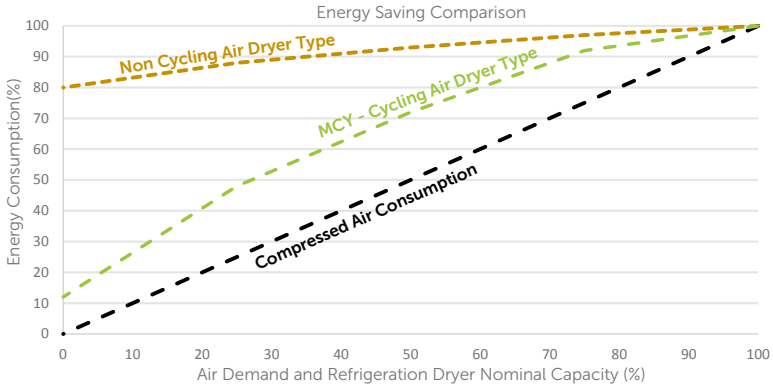
Zero Clearance Compressed Air Filters with High Performance Elements

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 Controllers 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 increase at pressure drop.



Correction Factor for MCY Air Dryers

Inlet Temperature (°C)	F1	Ambient Temperature (°C)	F2	Pressure (barg)	F3
30	1.29	20	1.05	4	0.80
35	1.00	25	1.00	6	0.94
40	0.92	30	0.98	7	1.00
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	0.70	14	1.22
-	-	-	-	16	1.25

Choosing the Correct Dryer

If an air compressor delivers 500 m^3/h at 6 barg, 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 m^3/h

The correct dryer model for this application is MCY930

MCY Series - Technical Specifications

Model	Capacity (m^3/h)	Power Supply (V / Ph / Hz)	Connection Size	Filter Quantity and Type	Replacement Filter Element Kit	Dimensions (mm)		
						Length	Width	Height
MCY-210	210	230 / 1 / 50	1 1/2"	Integrated - GKON-405 X/Y	MKON405 KIT	777	747	1378
MCY-305	305	230 / 1 / 50	1 1/2"	Integrated - GKON-405 X/Y	MKON405 KIT	777	747	1378
MCY-375	375	230 / 1 / 50	1 1/2"	Integrated - GKON-405 X/Y	MKON405 KIT	777	747	1378
MCY-495	495	230 / 1 / 50	2"	Integrated - GKON-805 X/Y	MKON805 KIT	857	727	1505
MCY-623	623	230 / 1 / 50	2"	Integrated - GKON-805 X/Y	MKON805 KIT	828	728	1763
MCY-930	930	230 / 1 / 50	2"	Integrated - GKON-1205 X/Y	MKON1205 KIT	828	728	1763
MCY-1200	1200	230 / 1 / 50	2"	Integrated - GKON-1205 X/Y	MKON1205 KIT	828	728	1763
MCY-1388	1388	400 / 3 / 50	3"	Integrated - GKON-HC-1805 X/Y	MKON-HC-1805 KIT	1148	798	1739
MCY-1800	1800	400 / 3 / 50	3"	Integrated - GKON-HC-1805 X/Y	MKON-HC-1805 KIT	1148	798	1739
MCY-2500	2500	400 / 3 / 50	3"	Integrated - GKON-HC-2775 X/Y	MKON-HC-2775 KIT	1313	878	1788
MCY-2775	2775	400 / 3 / 50	3"	Integrated - GKON-HC-2775 X/Y	MKON-HC-2775 KIT	1313	878	1788
MCY-3330	3330	400 / 3 / 50	DN100 Flange	Integrated - GKON-5850 X/Y	GKO5850 KIT	1577	993	1976
MCY-3915	3915	400 / 3 / 50	DN100 Flange	Integrated - GKON-5850 X/Y	GKO5850 KIT	1577	993	1976
MCY-5085	5085	400 / 3 / 50	DN100 Flange	Integrated - GKON-5850 X/Y	GKO5850 KIT	1797	1077	2075
MCY-5850	5850	400 / 3 / 50	DN100 Flange	Integrated - GKON-5850 X/Y	GKO5850 KIT	1797	1077	2075
MCY-6875	6875	400 / 3 / 50	DN150 Flange	** Externally Connected - F6500 X/Y	6*M1200 KIT	2188	1062	2024
MCY-7875	7875	400 / 3 / 50	DN150 Flange	** Externally Connected - F8500 X/Y	8*M1200 KIT	2188	1062	2024
MCY-9000	9000	400 / 3 / 50	DN150 Flange	** Externally Connected - F11000 X/Y	10*M1200 KIT	2247	1551	2114
MCY-10500	10500	400 / 3 / 50	DN200 Flange	** Externally Connected - F11000 X/Y	10*M1200 KIT	2247	1551	2114
MCY-12500	12500	400 / 3 / 50	DN200 Flange	** Externally Connected - F14000 X/Y	14*M1200 KIT	2547	1547	2172

** Not integrated and not included in standard package
Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

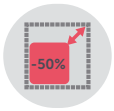
Nominal Working Pressure	7 barg	Minimum Inlet Temperature	5°C
Maximum Working Pressure	16 barg	Nominal Ambient Temperature	25°C
Minimum Working Pressure	4 barg	Maximum Ambient Temperature	50°C
Nominal Inlet Temperature	35°C	Minimum Ambient Temperature	5°C
Maximum Inlet Temperature	60°C	Refrigerant	R513a

MK-HP SERIES HIGH PRESSURE

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.

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

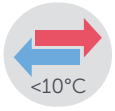


Size Reduced by 50%

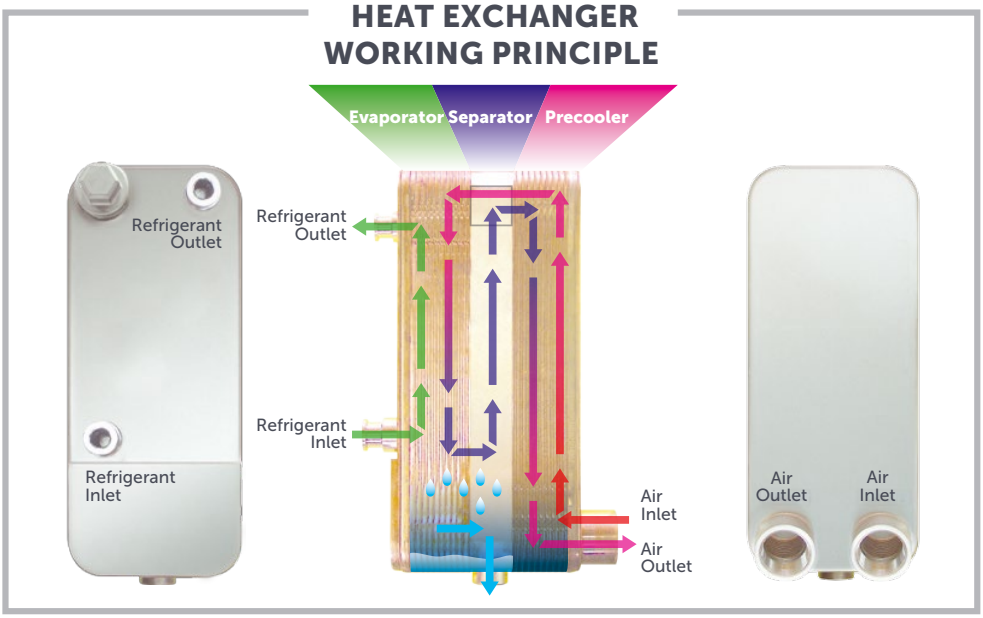
Dewpoint 3°C

Stainless Steel, Anti-corrosion

Working Pressure Up to 45 barg



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

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard.

Correction Factor for MK-HP Series

Inlet Temp. (°C)	F1	Ambient Temp. (°C)	F2	Pressure (barg)	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	1.00	25	1.00	40	1.00
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
Maximum Working Pressure	45 barg
Minimum Working Pressure	7 barg
Nominal Inlet Temperature	35°C
Maximum Inlet Temperature	50°C
Minimum Inlet Temperature	5°C
Nominal Ambient Temperature	25°C
Maximum Ambient Temperature	45°C
Minimum Ambient Temperature	5°C
Refrigerant	R513a

MTD SERIES HIGH-CAPACITY TURBO DRYER

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.

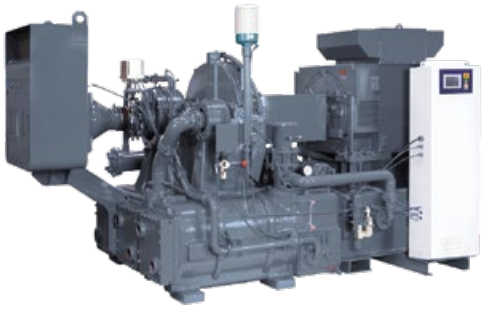
Mikropor brings an innovative approach to compressed air drying systems by producing Mikropor Turbo Dryer (MTD) units. It is tremendously effective to use this unit in the high- capacity drying process which is in the range of 10.000 Nm^3/h - 30.000 Nm^3/h. The large capacity drying system is often problematic 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

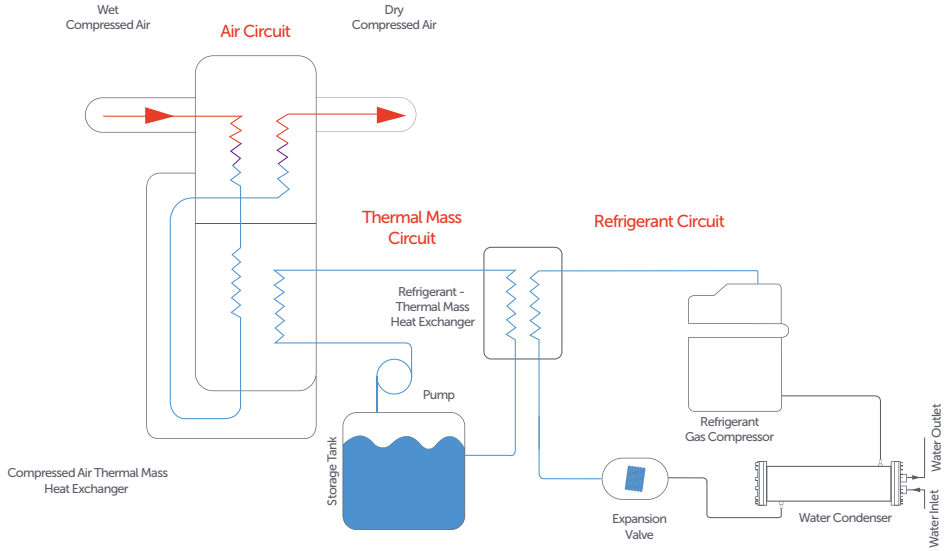
- 7" Touch Screen (MTD 25000 - 30000)
- 4.3" Touch Screen (MTD 10000 - 20000)
- Standard Modbus RS485 Communication
- High Strength Aluminium Design 3 in 1 Heat Exchanger
- High Efficiency Scroll (MTD 10000 - 20000) and Screw (25000 - 30000) Refrigerant Compressor
- Stable Dew Point with Thermal Mass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



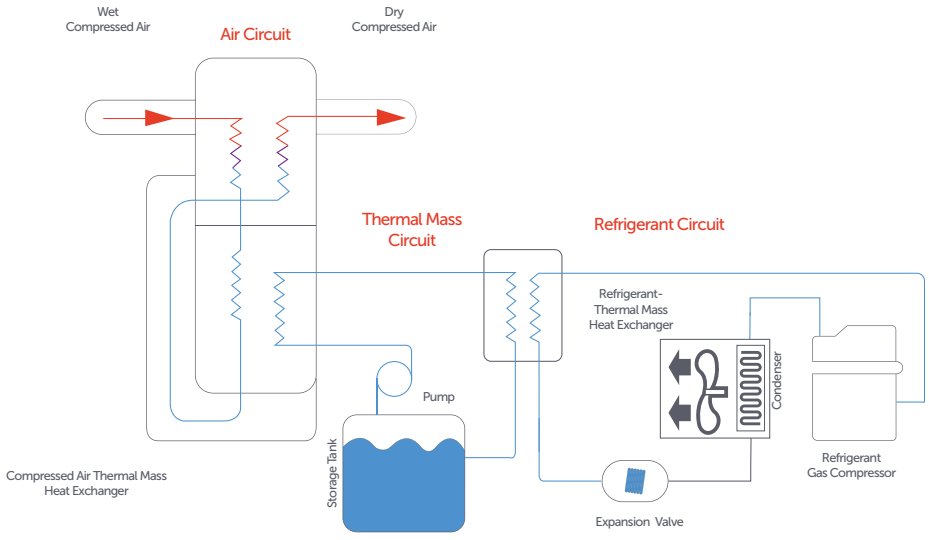
MTD SERIES HIGH-CAPACITY TURBO DRYER

Optional Features

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



MTD Unit – Water Condenser



MTD Unit – Air Cooled

MTD Series - Technical Specifications

Model	Capacity (Nm^3/h)	Pressure Drop (mbarg)	Power Supply (V / Ph / Hz)	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	400 / 3 / 50	DN200 Flange	1 1/2"	1"	R410a	1362	2340	2341
MTD 12500	12500	150	400 / 3 / 50	DN200 Flange	1 1/2"	1"	R410a	1569	3438	2225
MTD 15000	15000	130	400 / 3 / 50	DN250 Flange	1 1/2"	1"	R410a	1579	3438	2335
MTD 20000	20000	150	400 / 3 / 50	DN300 Flange	DN50 PN10 Flange	1"	R410a	1578	3441	2362
MTD 25000	25000	150	400 / 3 / 50	DN300 Flange	DN50 PN10 Flange	1"	R407c	3292	2067	2375
MTD 30000	30000	130	400 / 3 / 50	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.
Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

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	1.00	25	1.00	6	0.94
40	0.92	30	0.98	7	1.00
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	1.00	-	-

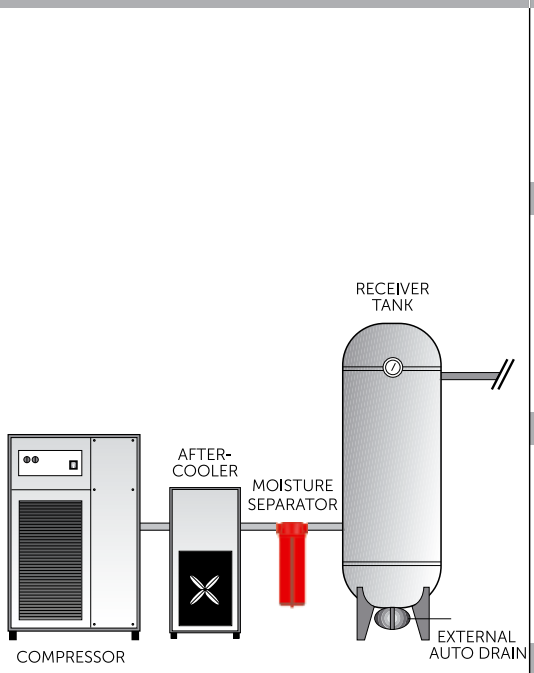
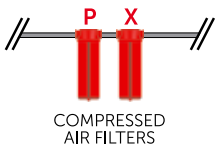
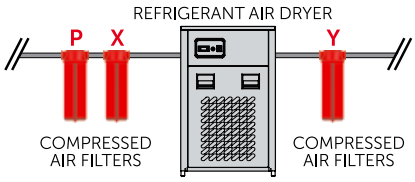
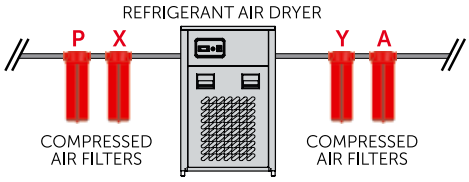
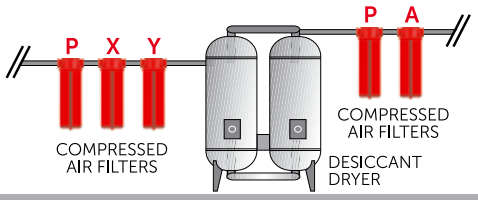
To determine the correct model, the compressor flow rate should be divided by the related F1, F2, and F3 values.

Choosing the Correct Dryer

If an air compressor delivers 14 370 Nm^3/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 Nm^3/h. The correct dryer model for this application could be MTD 20000 Model.

ISO STANDARDS

AIR LINE DESIGN	AIR LINE DESIGN 1	APPLICATION	ISO 8573.1: 2010 CLASS
		SIMPLE	2.-.3
	AIR LINE DESIGN 2		
		GENERAL PURPOSE	1.4.1
	AIR LINE DESIGN 3		
		ODORLESS	1.4.1
	AIR LINE DESIGN 4		
		CRITICAL	1.2.1 (-40 °C / -40°F) 1.1.1 (-70 °C /-100°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)

MMD PRO SERIES MODULAR DESICCANT

The lightweight 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 herever it's needed.

Mikropor Modular Desiccant Dryers have cosmetic beauty and can be located in clean, pleasant environments eyesore. Offered in sizes from 5 m^3/h to 400 m^3/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 Pro combine proven traditional dryer principles with the latest technology and an innovative design, offering easy service and maintenance while delivering unsurpassed efficiency, flexibility, and world-renowned Mikropor reliability for your critical dry air application.

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-PRO Series

Pressure (barg)	F1	Inlet Temp. (°C)	F2
4.5	0.69	20	1.00
5	0.75	25	1.00
6	0.88	30	1.00
7	1.00	35	1.00
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 PRO SERIES MODULAR DESICCANT

Technical Specifications

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

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 barg	50°C	16 barg	50°C

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

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.

MMD-P SERIES PNEUMATIC MODULAR DESICCANT

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
	(m^3/h)	(cfm)	
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"
MMD-P-340	575	340	2"
MMD-P-400	680	400	2"
MMD-P-500	850	500	2"
MMD-P-590	1000	590	2"
MMD-P-735	1250	735	3"
MMD-P-890	1500	890	3"
MMD-P-1060	1800	1060	3"

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

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 barg	50°C	16 barg	50°C

Correction Factor for MMD-P Series

Pressure (barg)	F1	Inlet Temp. (°C)	F2
4.5	0.69	20	1.00
5	0.75	25	1.00
6	0.88	30	1.00
7	1.00	35	1.00
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

kW Saver

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°C dew point or optionally -70°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
- Electronics
- All industries which needs air quality is -40°C dew point or optionally -70°C dew point

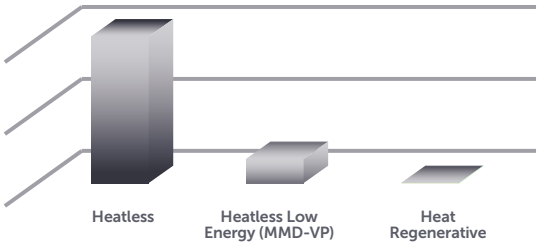
Advantages

- **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°C dew point can be achieved (optional -70°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

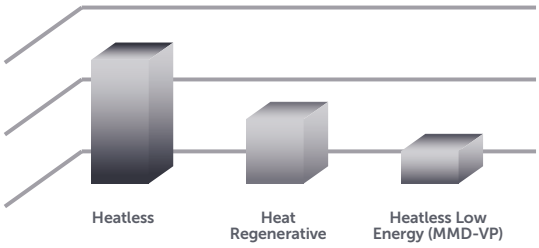
MMD-VP SERIES VACUUM MODULAR DESICCANT

kW Saver

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
  - Particle filter for vacuum line
  - PLC touch screen monitoring and controller
- **Optional Properties**
  - Dew point sensor

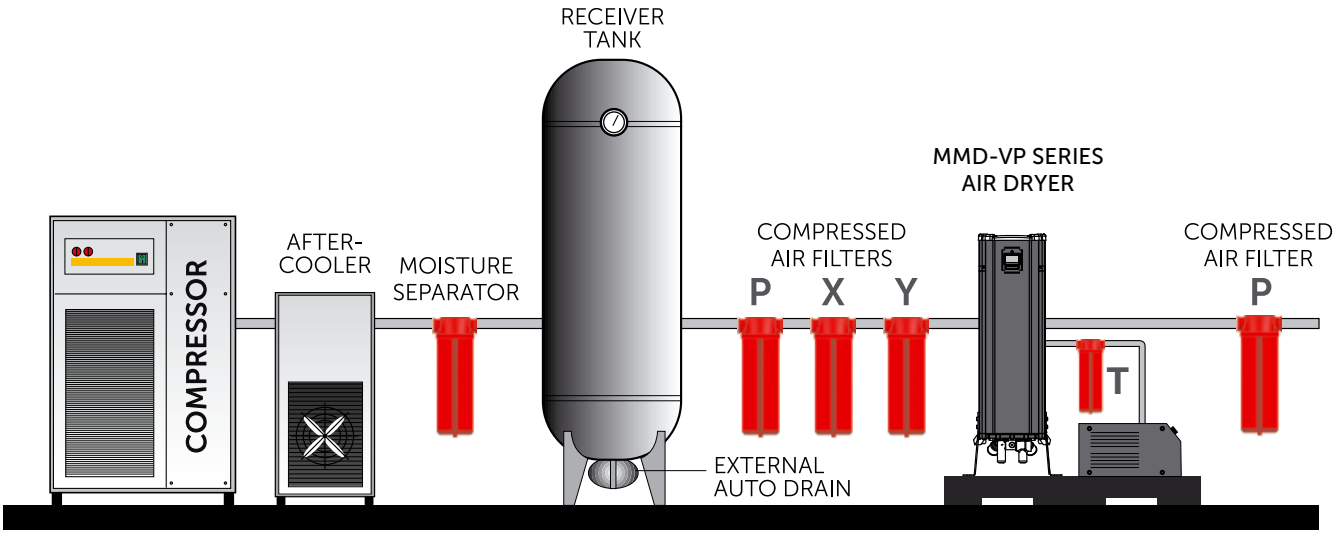
Working Principle

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

AIR LINE DESIGN



Technical Specifications

Model	Flow Rate (m³/h)	Vacuum Pump (kW)	Connection Size	Power Supply (V / Ph / Hz)	Max. Working Pressure (barg)	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

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

Correction Factor for MMD-VP Series

Inlet Temperature (°C)	F1	Pressure (barg)	F2
20	1.00	4.5	0.69
25	1.00	5	0.75
30	1.00	6	0.88
35	1.00	7	1.00
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

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

Correct Model = (Dryer Flow Rate) / [(F1) . (F2)]

Choosing the Correct Dryer

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

400 / (0.88*0.8) = 568 m³/h

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

MDA SERIES HEATLESS DESICCANT

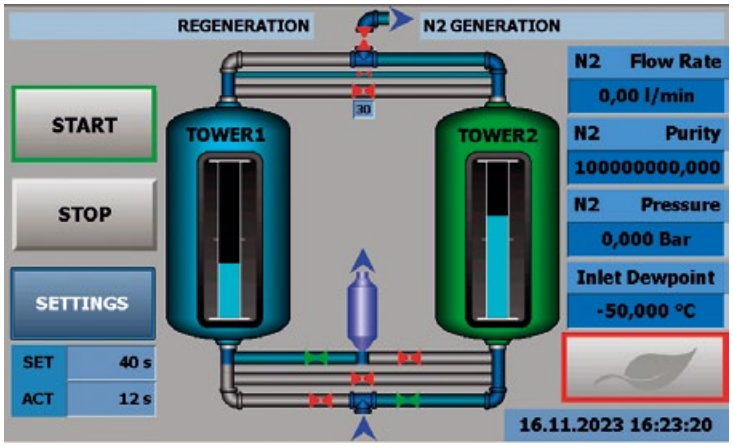
Mikropor MDA Heatless Desiccant Air Dryers provide constant -40°C (-70°C Optional) pressure dew point. These dryers are designed to supply clean and very dry compressed air for critical applications. Pre-filters and post filters are standard on all Mikropor Heatless Air Dryers to keep the air stream 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.



HMI Color 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 multilingual HMI helps the end users understand the system's operation and identify any issues easily.

Correction Factor for MDA Series

Pressure (barg)	F1	Inlet Temp. (°C)	F2
4.5	0.69	20	1.00
5	0.75	25	1.00
6	0.88	30	1.00
7	1.00	35	1.00
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.

Choosing the Correct Dryer

If a compressor delivers 850 m^3/h at 9 barg pressure and 45°C inlet temperatures please choose your dryer as follows; 850/1.25/0.73 = 931 m^3/h the correct dryer for this calculation is MDA 1000

Desiccants

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		Power Supply (V / Ph / Hz)	Max. Working Pressure (barg)	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	125	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 ISO 7183 standard

Efficiency Rating	X Pre-Filter	Y Pre-Filter	P After Filter
	1 micron particle removal and 0.1 mg/m^3 oil removal	0.01 micron particle removal and 0.01 mg/m^3 oil removal	5 micron particle removal (removes desiccant particles after the dryer)

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

For special requirements please contact the technical teams.

MBP SERIES HEATED DESICCANT

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 use ambient air and pass it through the heater. Hot air up to 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 Controlled Status Display
- Alarm, Pressure, Temperature Status Display
- Remote Start/Stop
- Dew Point Controlled Economy Mode
- High & Low Pressure Switches, Alarms
- Externally heated or heatless dryer functions integrated to the MBP

Correction Factor for MBP Series

Pressure (barg)	F1	Inlet Temp. (°C)	F2
4.5	0.69	20	1.00
5	0.75	25	1.00
6	0.88	30	1.00
7	1.00	35	1.00
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 (barg)	Pressure Drop (mbar)	Power Supply (V / Ph / Hz)	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 ISO 7183 standard

Pressure Dew Point	Nominal Inlet Temp.	Nominal Working Pressure	Max. Inlet Temp.	Max. Working Pressure	Max. Ambient Temp.
-40°C -70°C (optional)	35°C	7 barg	45°C	10 barg	40°C

MEHD SERIES EXTERNALLY HEATED TYPE COMPRESSED AIR DRYERS

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°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°C dewpoint.

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.

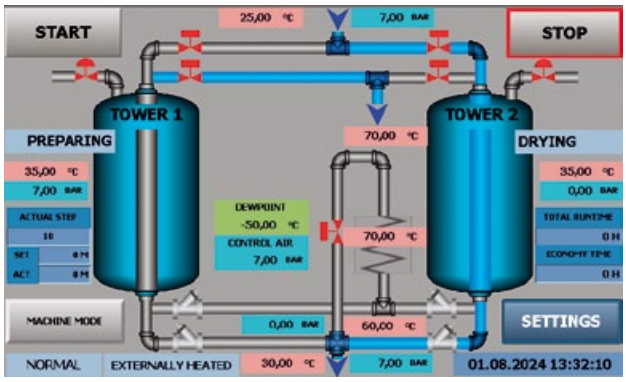
Wide Capacity Range: Flow rate performance is available in various capacities (850 Nm^3/h (500 cfm)-10800 Nm^3/h (6000 cfm)), thus adapting to different application needs.

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 Color Touch Screen PLC

MEHD SERIES EXTERNALLY HEATED TYPE COMPRESSED AIR DRYERS

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-2000	3600	2000
MEHD-2500	4400	2500
MEHD-3000	5000	3000
MEHD-4000	7200	4000
MEHD-5000	8800	5000
MEHD-6000	10800	6000

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

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

MHOC SERIES HEAT OF COMPRESSION COMPRESSED AIR DRYERS

Mikropor MHOC Series Compressed Air Dryers is energy-efficient by using the heat generated air of 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. The system is also optimized for minimum pressure drop.

MHOC Series compressed air dryers eliminate the need for users to use any heater or provide the desired performance with a trim 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.

kW Saver

The drying process is now greener for everyone!

Features & Advantages

- Highest energy-saving dryer technology
- No compressed air loss 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 heatfrom 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.

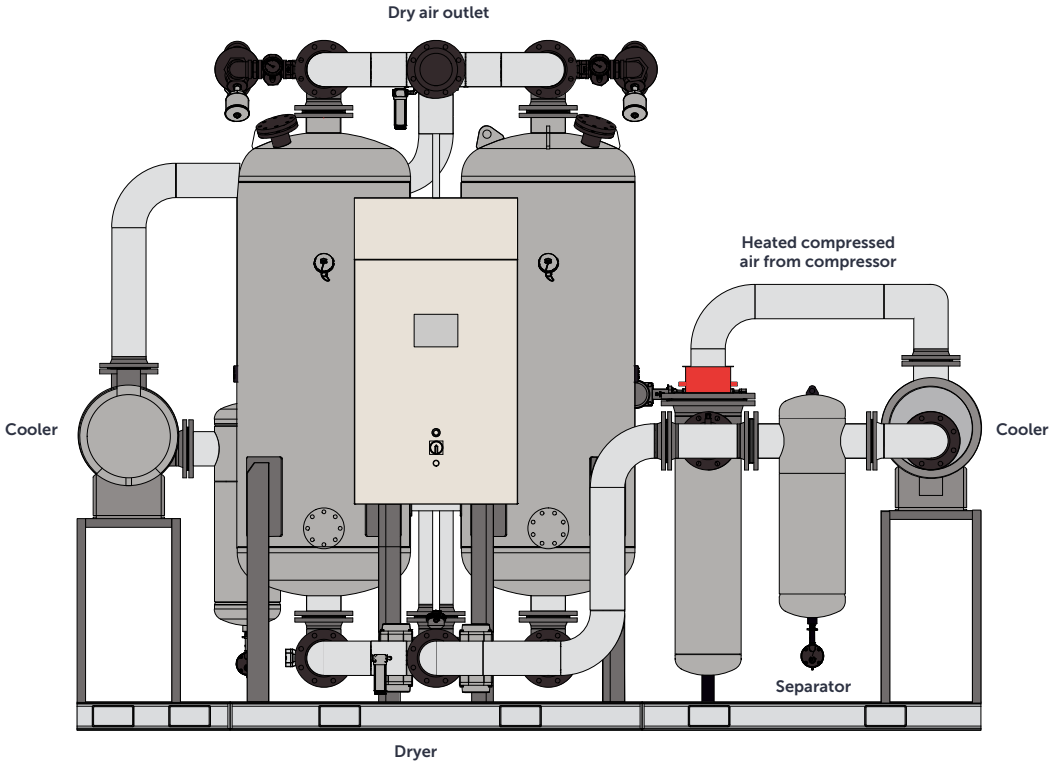
Working Principle

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.

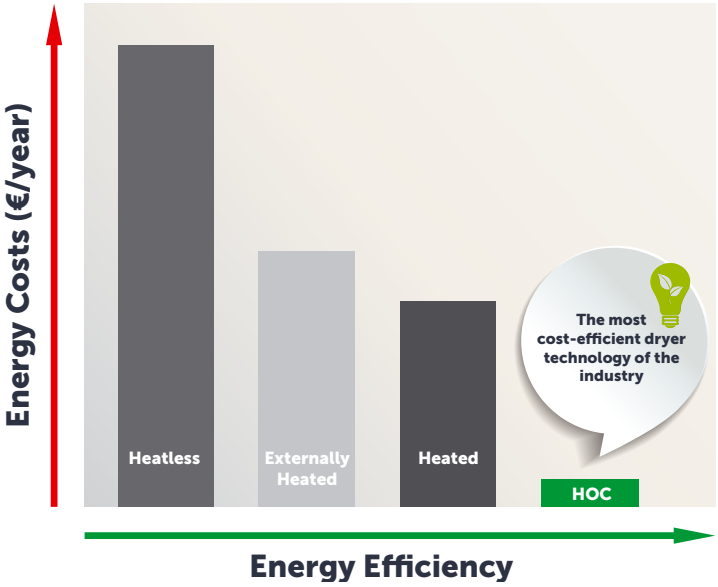
In order to ensure dew point stabilization, there is a regeneration method with high temperature compressed air coming out of the compressor. The design of MHOC Dryers provides -40°C/-40°F dew point stabilization with high performance option (stripping) and cooling cycles.

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



MHOC SERIES HEAT OF COMPRESSION COMPRESSED AIR DRYERS



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

Technical Specifications

Model	Capacity	
	(m^3/h)	(cfm)
MHOC 340	575	340
MHOC 400	680	400
MHOC 500	850	500
MHOC 600	1000	600
MHOC 735	1250	735
MHOC 800	1500	800
MHOC 1000	1800	1000
MHOC 1250	2200	1250
MHOC 1500	2700	1500
MHOC 1850	3200	1850
MHOC 2000	3600	2000
MHOC 2500	4400	2500
MHOC 3000	5000	3000
MHOC 3700	6300	3700
MHOC 4000	7200	4000
MHOC 5000	8800	5000
MHOC 6000	10800	6000

Performance Data*		
Max. Working Pressure (barg)	Pressure Drop (mbar)	Power Supply (V / Ph / Hz)
10	≤130	460 / 3 / 60 400 / 3 / 50

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

MRD SERIES RAILWAY DRYER

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.

MRD SERIES RAILWAY DRYER

Application Areas

MRD System is applicable to use in railway/metro vehicles, 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-01 Model - Technical Specifications

Nominal Air Flow Rate	0.75 Nm^3/min	Heater	24 W
Max. Operating Pressure	10 barg	Supply Voltage	24 VDC
Min. Operating Pressure	4 barg	Connection Size	½"
Max. Working Temperature	50°C @7 barg	X-Y-P Filters- GO	GO100
Min. Working Temperature	-40°C	Water Separator-GWS	G100WS

MRD-02 Model - Technical Specifications

Nominal Air Flow Rate	1.5 Nm^3/min	Heater	24 W
Max. Operating Pressure	10 barg	Supply Voltage	24 VDC
Min. Operating Pressure	4 barg	Connection Size	½"
Max. Working Temperature	50°C @7 barg	X-Y-P Filters- GO	GO100
Min. Working Temperature	-40°C	Water Separator-GWS	G100WS

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

Reference Conditions

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

Correction Factors for MRD Series

Inlet Temperature (°C)	F1	Pressure (barg)	F2
20	1.00	4.5	0.69
25	1.00	5	0.75
30	1.00	6	0.88
35	1.00	7	1.00
40	0.80	8	1.12
45	0.73	9	1.25
50	0.59	10	1.25

04

GAS GENERATION SYSTEMS

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.

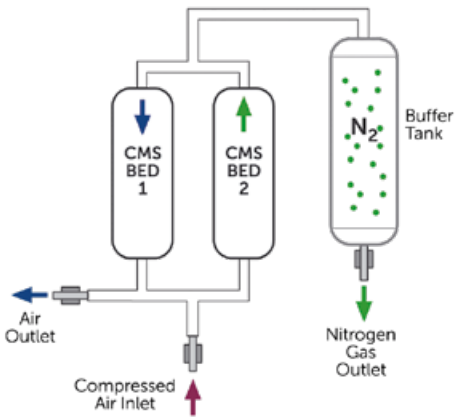
CMS adsorbs oxygen and water vapor molecules under a certain pressure while allowing nitrogen to pass through in the line.

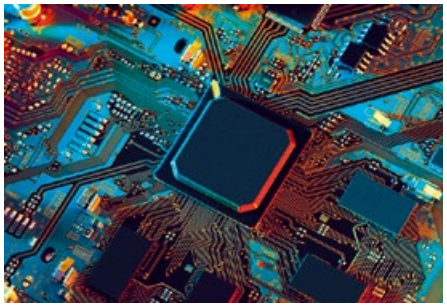
The Nitrogen Generator is a Two-Bed Adsorber System

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

- Electronics industry
- Metal processing industry
- Chemical industry
- Industrial cleaning processes
- Plastics industry
- Charging nitrogen gas in tires
- Food production and storage processes





FEATURES

Standard

- Nitrogen Generation Vessels
- Silencer
- Mini PLC
- Tank Manometers
- Pressure Transmitter
- ECO Mode
- T Filter
- Piston Valves

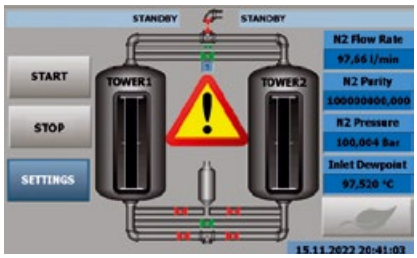
Optional

- Dew Point Sensor
- Flowmeter
- Carbolescer®
- Oxygen Analyzer
- Proportional Valves
- 3-Way By-Pass Valve
- 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 barg	7.5 barg	6 barg	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

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

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

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

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/N_2 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

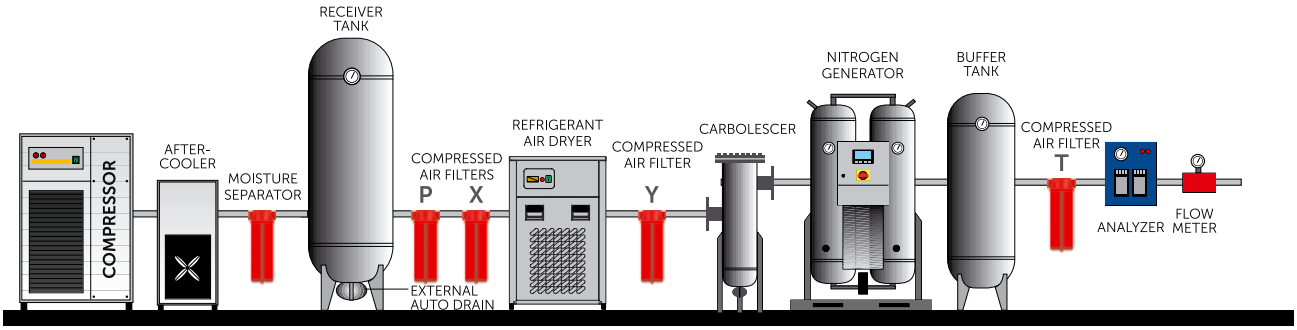
Mikropor Model	RECOMMENDED BUFFER TANK VOLUMES (LITER)									
	95%	97%	98%	99%	99.50%	99.90%	99.95%	99.99%	99.995%	99.999%
MNG-PRO-140	59	50	46	31	25	20	18	10	8	6
MNG-PRO-185	79	66	61	42	34	26	24	13	10	8
MNG-PRO-225	97	81	74	51	42	32	29	16	12	9
MNG-PRO-360	155	129	118	81	66	51	47	25	20	15
MNG-PRO-475	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

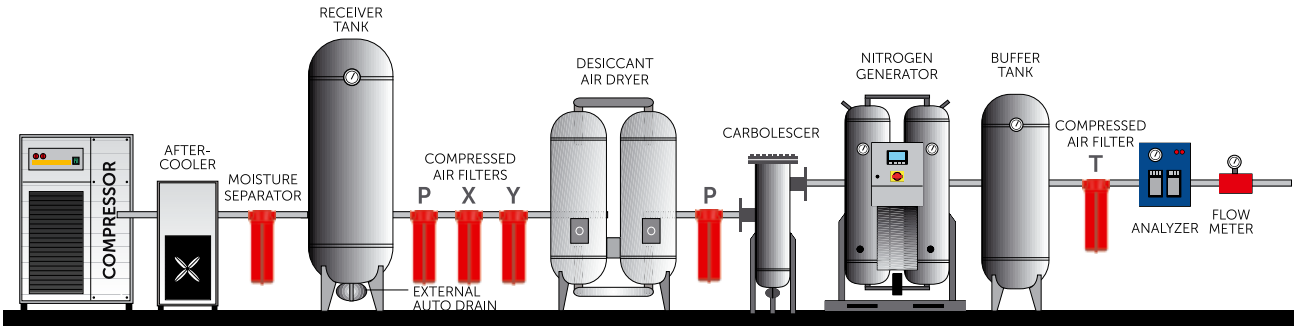
Inlet Pressure (barg)	F1	Ambient Temp. (°C)	F2
5	0.68	5	0.85
5.5	0.73	10	1.00
6	0.79	15	1.00
6.5	0.88	20	1.00
7	0.90	25	1.00
7.5	1.00	30	0.91
8	1.04	35	0.82
8.5	1.08	40	0.74
9	1.15	45	0.60
9.5	1.18	-	-
10	1.20	-	-

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.

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.

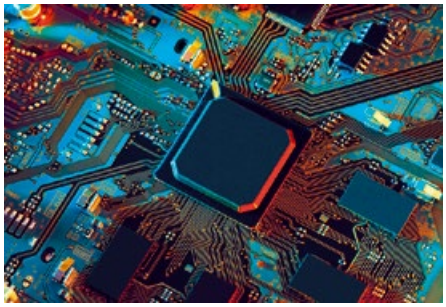
CMS adsorbs oxygen and water vapor molecules under a certain pressure while allowing nitrogen to pass through in the line.

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

- Electronics industry
- Metal processing industry
- Chemical industry
- Industrial cleaning processes
- Plastics industry
- Charging nitrogen gas in tires gas in tires
- Food production and storage processes



FEATURES

Standard

- Nitrogen Generation Modules
- Silencer
- Mini PLC
- Manometers
- Pressure Transmitter
- ECO Mode
- T Filter
- Piston Valves

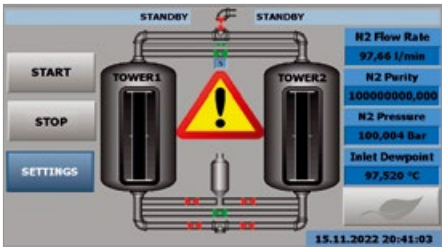
Optional

- Dew Point Sensor
- Flowmeter
- Carbolescer®
- Oxygen Analyzer
- 3-Way By-Pass Valve
- 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)
- Small footprint, lightweight, advanced compact design
- Corrosion protected Aluminium construction
- Can be floor, bench or wall mounted
- Quiet enough to be placed in any work environment
- Easy installation, easy maintenance

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

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

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	2.7	2.3	2.0	1.4	1.2	1.1	0.5	0.4	0.3
M-MNG-PRO-40	4.9	4.4	3.8	3.2	2.9	1.9	1.8	0.8	0.7	0.5
M-MNG-PRO-70	9.0	8.1	6.9	5.9	5.0	3.6	3.3	1.5	1.4	0.9
M-MNG-PRO-123	15.0	13.4	11.6	9.8	8.6	5.9	5.5	2.6	2.4	1.5
M-MNG-PRO-210	25.9	23.1	19.9	16.9	14.9	10.2	9.4	4.4	4.2	2.6
M-MNG-PRO-285	34.5	30.9	26.6	22.6	19.9	13.6	12.6	5.9	5.6	3.5
M-MNG-PRO-340	42.3	37.8	32.5	27.6	24.4	16.7	15.4	7.2	6.8	4.3
M-MNG-PRO-555	67.3	60.2	51.8	44.0	38.8	26.5	24.5	11.5	10.8	6.8
M-MNG-PRO-735	89.0	79.6	68.5	58.2	51.4	35.1	32.4	15.2	14.4	9.0
M-MNG-PRO-990	120.3	107.6	92.6	78.6	69.5	47.4	43.8	20.6	19.4	12.2
M-MNG-PRO-1130	137.8	123.3	106.1	90.1	79.6	54.3	50.2	23.6	22.2	14.0
M-MNG-PRO-1260	153.0	136.9	117.8	100.0	88.4	60.3	55.7	26.2	24.7	15.5
M-MNG-PRO-1650	200.3	179.2	154.2	130.9	115.6	78.9	72.9	34.3	32.3	20.3

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

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

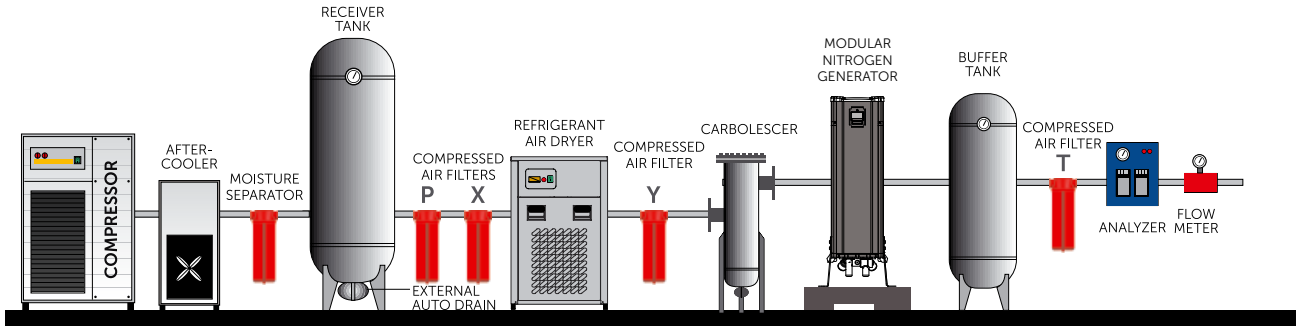
Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

Correction Factor

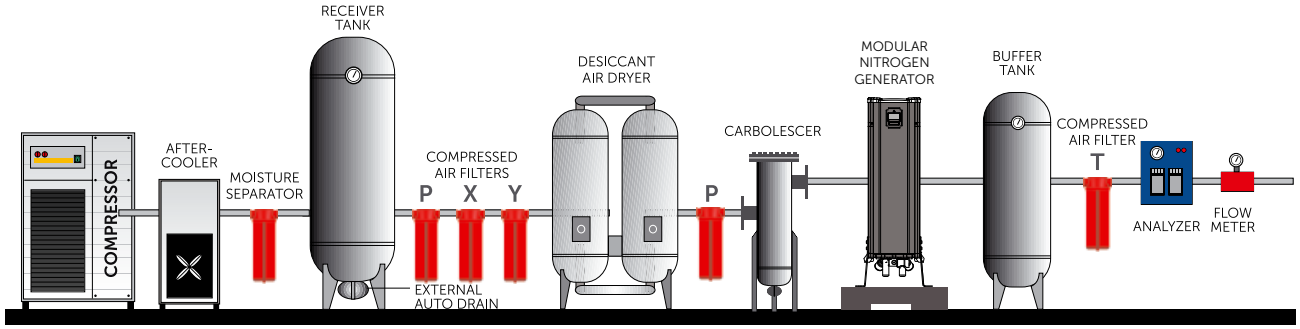
Inlet Pressure (barg)	F1	Ambient Temp. (°C)	F2
5	0.68	5	0.85
5.5	0.73	10	1.00
6	0.79	15	1.00
6.5	0.88	20	1.00
7	0.90	25	1.00
7.5	1.00	30	0.91
8	1.04	35	0.82
8.5	1.08	40	0.74
9	1.15	45	0.60
9.5	1.18	-	-
10	1.20	-	-

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.

MDX SERIES NITROGEN PURIFIER SYSTEMS

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

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-PRO 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.

MDX SERIES NITROGEN PURIFIER SYSTEMS

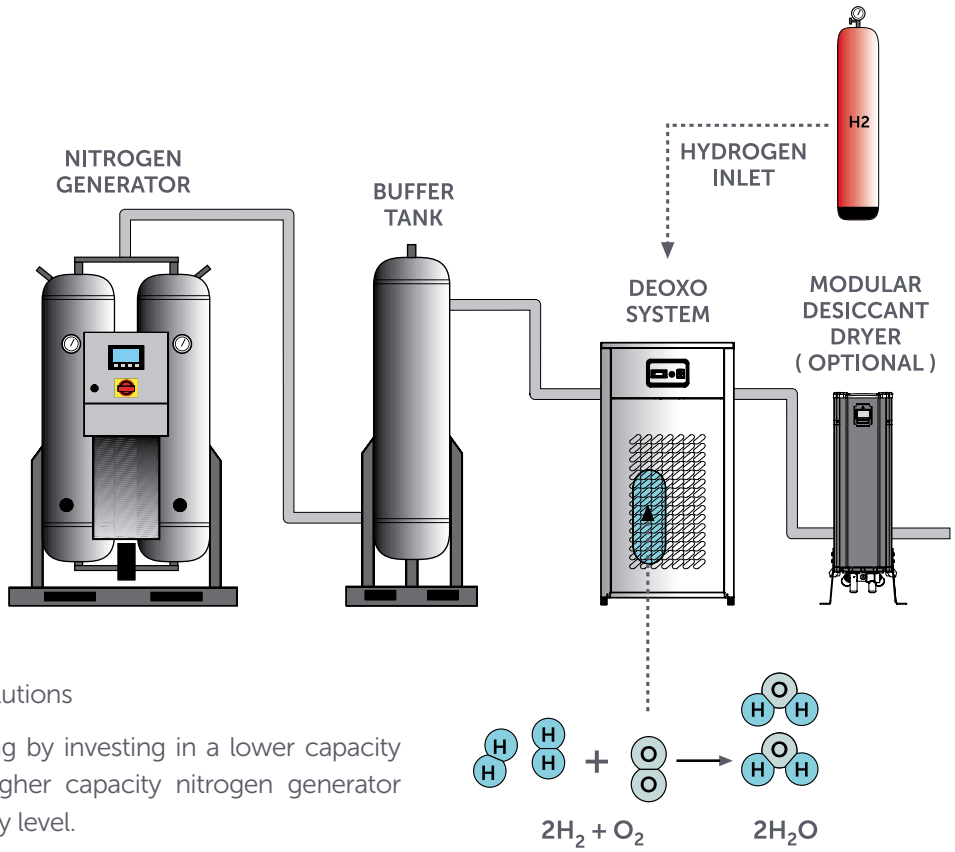
Inlet Nitrogen Purity (99.5% or 99.9%)

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

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

For higher capacities, please contact with your regional Area Manager

Nitrogen	99.999%
Oxygen	<10 ppm
Dew Point*	<3°C



Advantages

- Effective payback period
- Minimized installation area
- Long service life (>10 years)
- Top quality high-performance solutions
- Cost reduction and energy saving by investing in a lower capacity MDX rather than installing a higher capacity nitrogen generator system only for the same N_2 purity level.
- Up to 99.999% nitrogen purity with minimum space and energy requirement
- Low energy consumption
- Low CO_2 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 (2.5 instead of 8.4)
- Compact design, fully automated system
- 24/7 Nitrogen gas production in requested purity levels
- High level energy saving
- Cost effective and customized production
- Low maintenance cost

MGD SERIES GAS DRYER SYSTEM

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 unit and double unit 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.

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

Standard Features

- Mini PLC
- Particule (P) Filter

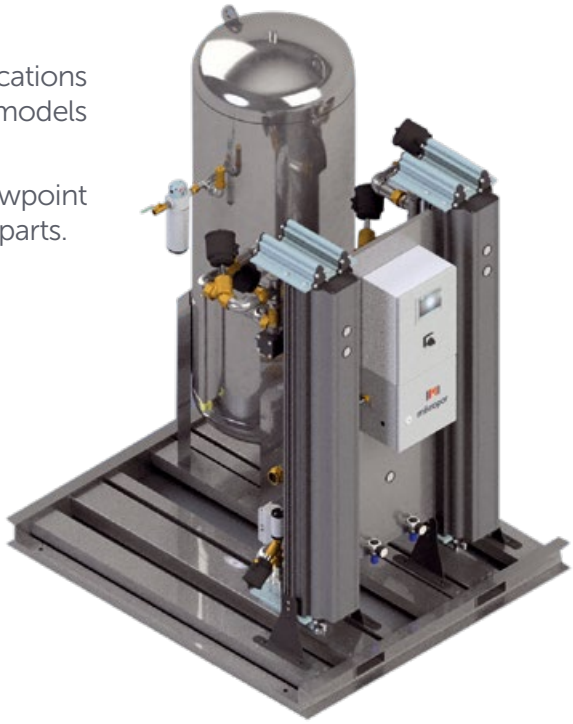
Optional Features

- Oxygen Analyzer
- 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 Analyzer
- Dew Point Sensor
- Pressure Transmitter

MGD SERIES GAS DRYER SYSTEM

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

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

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	1.00
5	0.75	25	1.00
6	0.88	30	1.00
7	1.00	35	1.00
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	-	-

MOG SERIES PSA OXYGEN GENERATORS

(Capacity 0.2 m³/h-240.5 m³/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.

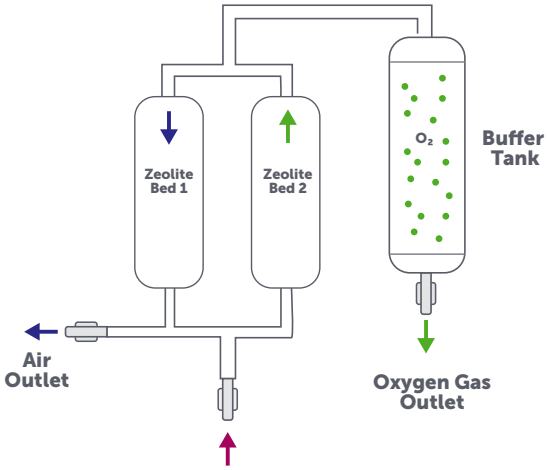
Working Principle

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 uninterruptible oxygen up to 95% purity.

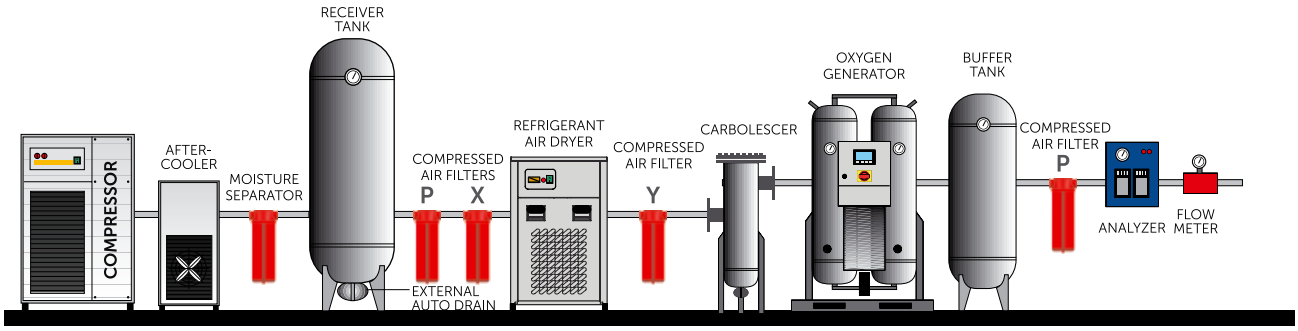
In order to achieve high purity oxygen production special zeolite granules are used. Zeolite, a microporous aluminosilicate mineral, is used as a molecular sieve and as an adsorbent of a wide variety of molecules.

Oxygen generation by utilising PSA technology follows these steps:

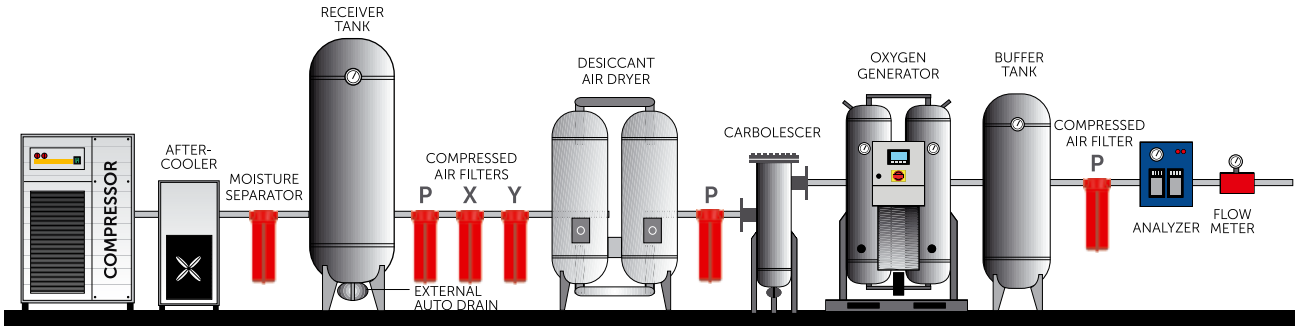
- **Pressurization:** Air is compressed to the tank to get the desired level of oxygen.
- **Adsorption:** Zeolite molecular sieve lets the oxygen flows and holds the other molecules at high pressure.
- **Regeneration:** The pressure of the tank is reduced. In that way, saturated zeolite molecules can 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



MOG SERIES PSA OXYGEN GENERATORS

Standard Features

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

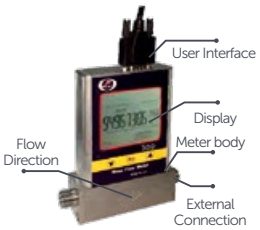
Advantages

- 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

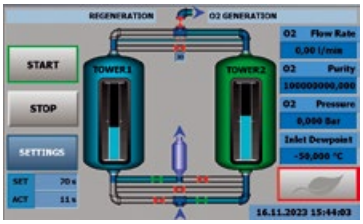
* Replace filter elements periodically, and get normal service for the compressor.

Long Life Valve

Oxygen Analyzer



Flow Meter



HMI Color Touch Screen PLC

Optional Features

- Carbolescer®
- HMI Color 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.

Correct Model= (Oxygen Flow Rate) / (F1) / (F2)

Inlet Temp. (°C)	F1	Inlet Pressure (barg)	F2
10	1.00	6	1.00
15	1.00	6.5	1.00
20	1.00	7	1.00
25	1.00	7.5	1.00
30	0.91	8	1.05
35	0.82	8.5	1.11
40	0.74	9	1.17
45	0.60	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		Mimimum Recommended Buffer Tank Volume (L)	Particle Filters (P Filters)	Electrical Data		
	90%	93%	95%	90%	93%	95%		Air Inlet	Oxygen Outlet	For 90% Purity		Power Supply (V / Ph / Hz)	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 / 50-60	<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 / 50-60	<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 / 50-60	<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 / 50-60	<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 / 50-60	<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 / 50-60	<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 / 50-60	<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 / 50-60	<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 / 50-60	<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 / 50-60	<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 / 50-60	<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 / 50-60	<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 / 50-60	<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 / 50-60	<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 / 50-60	<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 / 50-60	<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 / 50-60	<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 / 50-60	<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 / 50-60	<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 / 50-60	<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 / 50-60	<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 / 50-60	<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 / 50-60	<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 / 50-60	<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 / 50-60	<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 / 50-60	<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 / 50-60	<4	< 0.1

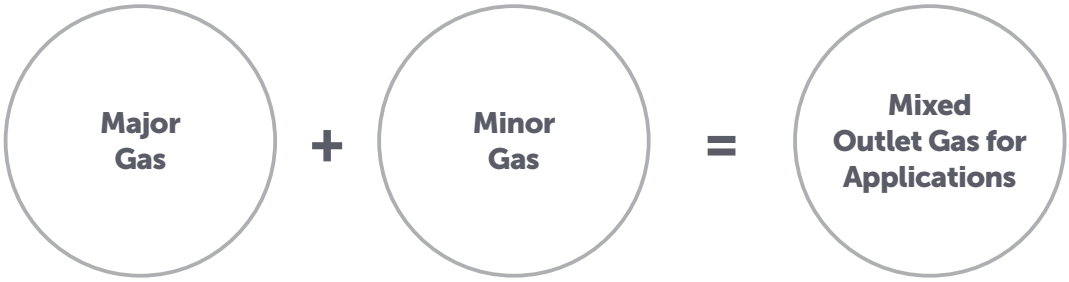
Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

MGM SERIES GAS MIXERS

Many different gases are produced and used in compressed air systems according to the needs. The most commonly used industrial gases are nitrogen and oxygen. These gases are produced and used in different quantities and purities according to the need. Many different gases are produced and used in compressed air systems according to the needs. Although each gas is used for different purposes, gas mixers provide the mixing of these gases as major gas and minor gas phases and gas production on demand. The gas mixer mixes two different gases in specific proportions to obtain a homogeneous gas mixture.

Working Principle

The system regulates the main and auxiliary gas flows to the same pressure. The main gas flows through an orifice, while the auxiliary gas passes through an adjustable valve. These gases are mixed under a flow condition and directed into a tank. When the pressure of the tank reaches a certain level, the gas flow is automatically stopped. Continuously monitor the accuracy of the mix in the mixer and make adjustments as needed.



Advantages

- Durable design and construction suitable for industrial applications
- Easy-to-operate by monitor controlling
- Automatic adjustment in any changes in pressure and gas flow
- Continuous and reliable mixing process
- On-site and instant homogenous gas mixture for related application

MGM SERIES GAS MIXERS

Standard

- Mini PLC
- P Filters
- Mixing Tank
- Pressure Regulators
- Nitrogen and Oxygen Manometers
- Pressure Transmitter
- Oxygen Analyser
- Manual Valve

Optional

- Nitrogen Flowmeter
- Oxygen Flowmeter
- Gas Inlet Temperature Sensor
- Aftercooler

Applications and Specific Designs

- Welding Manufacturing → Carbon Dioxide/Argon, Oxygen/Argon, Helium/Argon
- Food Packaging → Carbon Dioxide/Nitrogen, Oxygen/Carbon Dioxide
- Leak Detection → Helium/Nitrogen, Helium/Air
- Blanketing Atmospheres → Oxygen/Nitrogen
- Laser Cutting → Oxygen/Nitrogen

Technical Specifications

Models	Max. Flow Capacity (m^3/h)	Surge Tank Volume (l)	N_2 Inlet Connection Size	O_2 Inlet Connection Size	Mix Gas Outlet Connection Size
MGM-65	65	140	1/2"	1/4"	1/4"
MGM-135	135	280	1"	1/2"	1/4"
MGM-270	270	450	1 1/2"	1"	1/2"
MGM-500	500	910	1 1/2"	1"	1/2"

*For other or more information, please consult the Mikropor technical team.
Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

Reference Conditions

Mixed Gas Outlet Pressure Range (barg)	Supply Gas Inlet Pressure Range (barg)	Working Temperature Range (°C)	Power Supply
3.5	7	0-40	115 VAC, 50-60 Hz 220 VAC, 50-60 Hz

05

BREATHING AIR SYSTEMS

BREATHING AIR SYSTEMS

MBS PRO SERIES BREATHING AIR SYSTEM

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.) The new MBS PRO Series offers easy maintenance and practical service advantages thanks to its compact and innovative design.

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

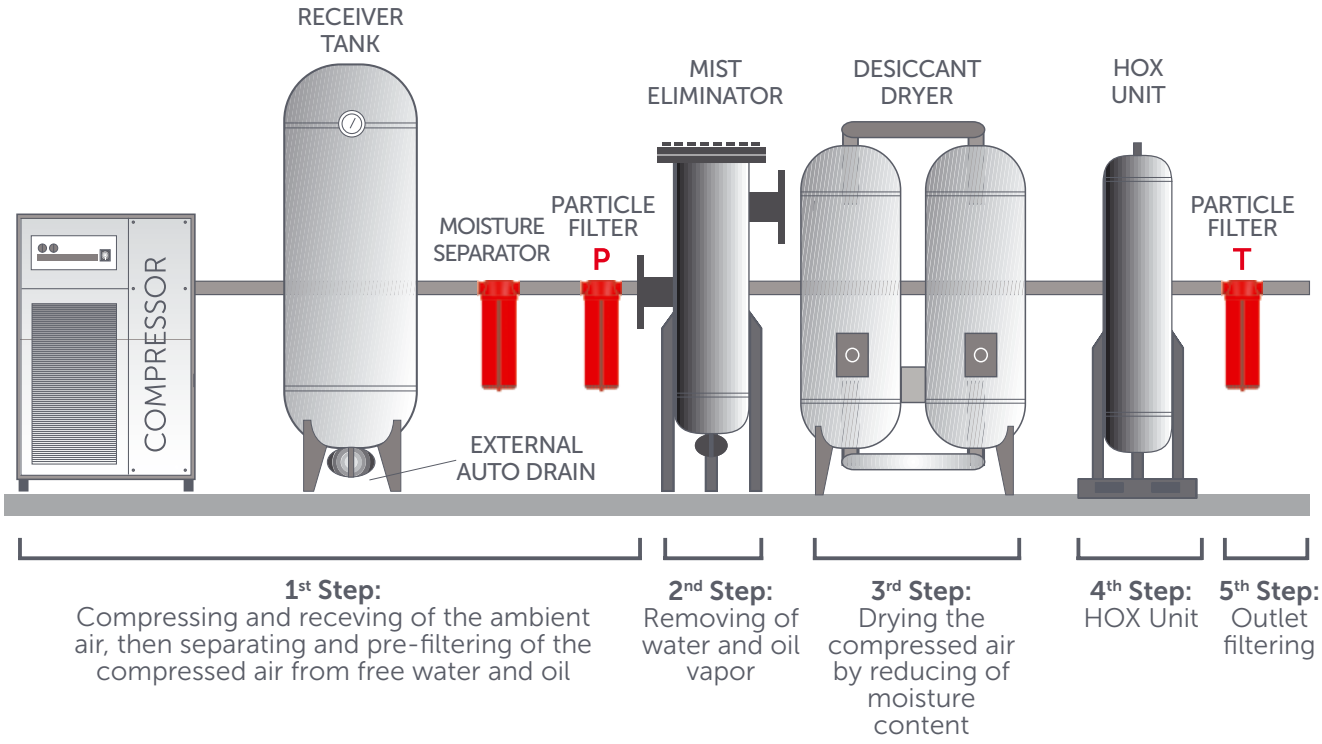
1st Step: Water and the oil droplets in the compressed air separated with help of the moisture and particle separators down to 1 micron.

2nd Step: Removing water and oil vapor down to 0.01 mg/m^3 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 vapor and odour are eliminated with activated carbon granules and, CO gas in the air is converted to CO_2 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 (barg)	Power Supply (V / Ph / Hz)
	(m^3/h)	(cfm)						
MBS-PRO 5	10	5	1/2"	G-ELM-100	GON-35	MON35	16	115-240 / 1 / 50-60
MBS-PRO 10	20	10	1/2"	G-ELM-100	GON-35	MON35	16	115-240 / 1 / 50-60
MBS-PRO 15	25	15	1/2"	G-ELM-100	GON-35	MON35	16	115-240 / 1 / 50-60
MBS-PRO 20	35	20	1/2"	G-ELM-100	GON-55	MON55	16	115-240 / 1 / 50-60
MBS-PRO 25	45	25	1/2"	G-ELM-150	GON-55	MON55	16	115-240 / 1 / 50-60
MBS-PRO 30	50	30	1/2"	G-ELM-200	GON-55	MON55	16	115-240 / 1 / 50-60
MBS-PRO 40	70	40	1 1/2"	G-ELM-250	GON-300	MON300	16	115-240 / 1 / 50-60
MBS-PRO 50	85	50	1 1/2"	G-ELM-300	GON-300	MON300	16	115-240 / 1 / 50-60
MBS-PRO 60	100	60	1 1/2"	G-ELM-500	GON-300	MON300	16	115-240 / 1 / 50-60
MBS-PRO 75	130	75	1 1/2"	G-ELM-600	GON-300	MON300	16	115-240 / 1 / 50-60
MBS-PRO 100	170	100	1 1/2"	G-ELM-851	GON-300	MON300	16	115-240 / 1 / 50-60
MBS-PRO 120	200	120	1 1/2"	G-ELM-1210	GON-300	MON300	16	115-240 / 1 / 50-60
MBS-PRO 180	300	180	1 1/2"	ELM-300	GON-300	MON300	16	115-240 / 1 / 50-60
MBS-PRO 240	400	240	1 1/2"	ELM-300	GON-500	MON500	16	115-240 / 1 / 50-60
MBS-PRO 250	440	250	1 1/2"	ELM-300	GON-500	MON500	16	115-240 / 1 / 50-60
MBS-PRO 300	575	300	1 1/2"	ELM-600	GON-600	MON600	16	115-240 / 1 / 50-60
MBS-PRO 400	680	400	2"	ELM-600	GON-800	MON800	16	115-240 / 1 / 50-60
MBS-PRO 500	850	500	2"	ELM-600	GON-1000	MON1000	16	115-240 / 1 / 50-60
MBS-PRO 600	1000	600	2"	ELM-600	GON-1200	MON1200	16	115-240 / 1 / 50-60
MBS-PRO 700	1250	700	DN80	ELM-800	GON-HC-1550	MONHC1550	16	115-240 / 1 / 50-60
MBS-PRO 800	1500	800	DN80	ELM-1200	GON-HC-1550	MONHC1550	16	115-240 / 1 / 50-60
MBS-PRO 1000	1800	1000	DN80	ELM-1200	GON-HC-2000	MONHC2000	16	115-240 / 1 / 50-60

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

Correction Factor for MBS-PRO

Inlet Temperature (°C)	Inlet Temperature (°F)	F1
20	68	1.00
25	77	1.00
30	86	1.00
35	95	1.00
40	104	0.80
45	113	0.73
50	122	0.59
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

Pressure (barg)	Pressure (psig)	F2
4.5	65	0.69
5	73	0.75
6	87	0.88
7	100	1.00
8	116	1.12
9	131	1.25
10	145	1.25
11	160	1.50
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	OSHA Grade D
Water	-	67 ppm (-45°C 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	-

P-MBS SERIES PORTABLE BREATHING AIR UNIT

High-quality breathing air is essential for many industrial applications, especially in field operations and confined spaces.

The Mikropor Portable Breathing Air Unit is designed to provide clean, safe, and compliant breathing air wherever it is needed.

Its advanced multi-stage filtration system removes harmful contaminants commonly found in compressed air lines, ensuring reliable protection for the user in demanding environments.

Why Safe Breathing Air Is Critical in the Field

During field work, compressed air becomes the worker's breathing source.

But without proper purification, this air may contain harmful contaminants.

A portable breathing air unit provides the clean, safe air required for healthy breathing in any environment.

Where Can You Use a Portable Breathing Air Unit?

Field operations such as maintenance, confined space entry and tank cleaning often involve contaminated air.

A portable breathing air unit delivers clean, safe air exactly where workers need it.

Application Areas

- Maintenance & repair operations
- Confined space entry
- Tank and vessel cleaning
- Industrial painting & coating applications
- Chemical and petrochemical plants
- Offshore and marine operations
- Refineries and gas processing facilities
- Food & beverage production areas
- Pharmaceutical & hygiene-sensitive environments
- General industrial service where clean breathing air is required

International Breathing Air Standards

The atmospheric air we breathe contains approximately 78% nitrogen, 21% oxygen, 1% argon and various trace gases.

Breathing air standards define the allowable limits for these components, as well as maximum concentrations of contaminants that may affect human health.

Mikropor Portable Breathing Air Units are designed and manufactured in compliance with major international breathing air standards, ensuring safe and high-quality air for industrial use.

- OHSA Grade D
- CSA Z180.1-00
- EN 12021

P-MBS SERIES PORTABLE BREATHING AIR UNIT

Working Principle

1. Compressed air first passes through a high-efficiency coalescing filter that removes oil aerosols and fine particulates down to 0.01 µm, reducing oil content to ≤0.01 mg/m^3.

2. The second stage provides advanced filtration and reduces carbon monoxide levels to below 5 ppm, ensuring breathing-air compliance for field operations.

3. A 5-micron particulate filter removes remaining dust and solid particles, providing final polishing before air delivery.

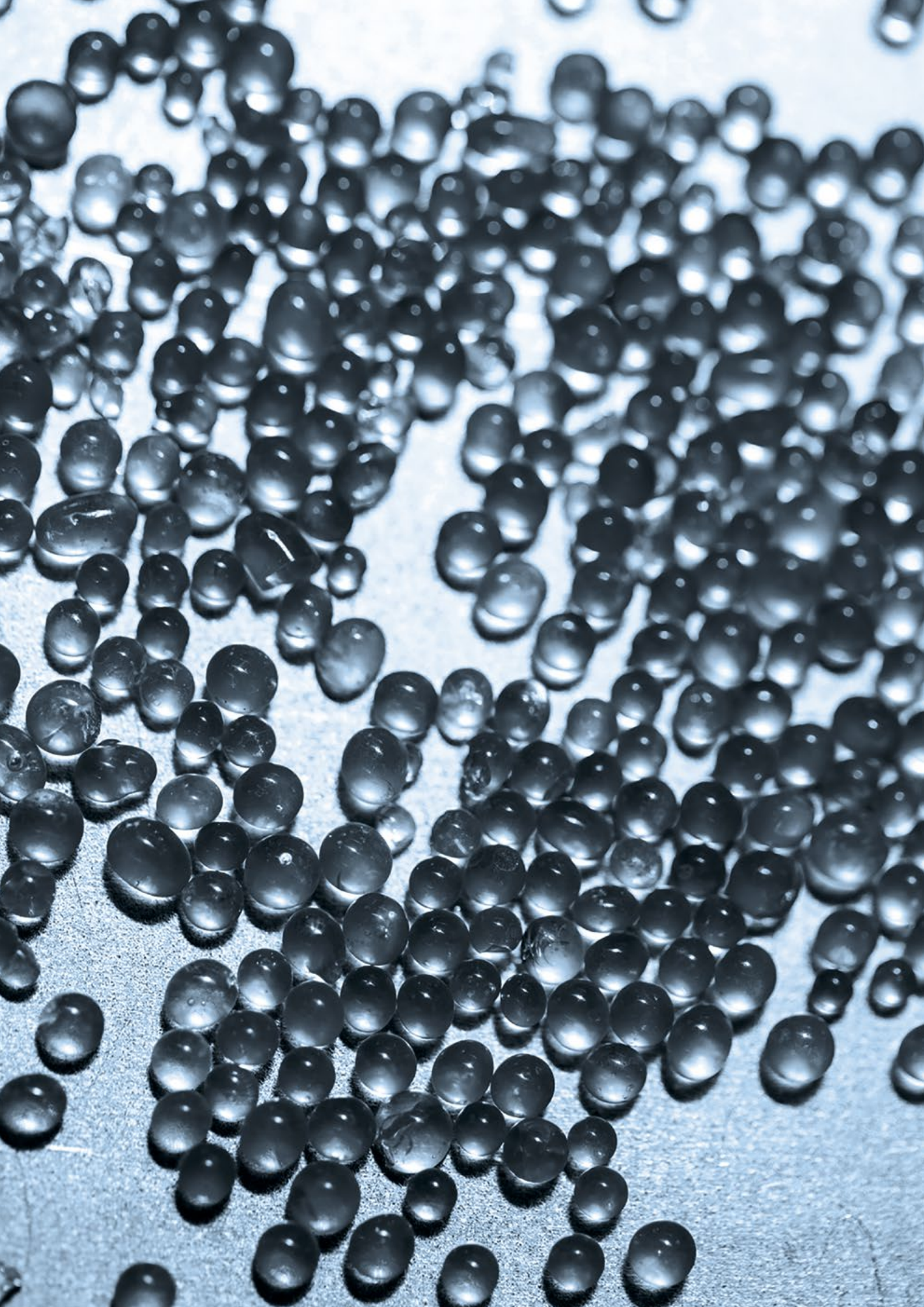
4. Filtered and stabilized air is maintained at consistent purity and pressure levels for safe breathing use.

5. Purified breathing air—free of aerosols, harmful gases and particulates—is supplied to the outlet for safe use in the field.

Technical Specifications

Model	User Quantity	Inlet Flow @7 barg (cfm / m^3/h)	Outlet Pressure	Power Supply	Weight (kg)
P-MBS-15	1	15 cfm (25 m^3/h)	Adjustable	9-16 VDC or 115 VAC 50/60 Hz	7.2
P-MBS-30	2	30 cfm (51 m^3/h)	Adjustable	9-16 VDC or 115 VAC 50/60 Hz	7.5
P-MBS-50	4	50 cfm (85 m^3/h)	Adjustable	9-16 VDC or 115 VAC 50/60 Hz	7.9

Filtration Stages: 3-Stage (Coalescing Filter + HOX CO Reduction + 5 µm Particulate Filter)
CO Reduction: CO < 5 ppm
Operating Temperature: -10°C to +50°C
Inlet / Outlet Connections: 1/4" Hose Barb (for pneumatic hose connection)
Dimensions (L × W × H): 358×460×185 mm
CO Alarm Level: 10 ppm
CO Sensor Range: 0–200 ppm



06

OIL-WATER SEPARATOR UNITS

OIL-WATER SEPARATOR UNITS

MWOS SERIES

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
- Lightweight and easy installation
- The indicator that shows overload of the flow
- User-friendly maintenance procedure
- Multiple inlet ports
- Oil storage box complient with environmental regulations of oil collection (for MWOS-37 and above models)
- Filtering system that prevents particles to enter the system from the environment

Oil Types	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	Dimensions		
			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	538	506	1080
MWOS-160	33	< 10 ppm	1076	506	1080
MWOS-200	44	< 10 ppm	1076	506	1080
MWOS-250	55	< 10 ppm	1076	506	1080

* Reference Conditions: Air Inlet Temp. 25°C, Relative Air Humidity 60%
* The dimensional data includes the accessories. Please contact the technical team for more data
Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO 7183 standard

07

ACCESSORIES

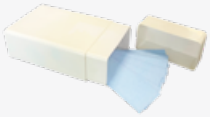
ACCESSORIES

ACCESSORIES

MEASUREMENT AND ANALYSIS INSTRUMENTS

Representative Sample Images				
Product Subgroups	ETHERNET-BASED DISPLAY AND GRAPHIC DATA LOGGER WITH 4 SENSOR INPUTS	ADVANCED DISPLAY AND GRAPHIC DATA LOGGER WITH 8 SENSOR INPUTS AND ETHERNET INTERFACE	MOBILE DATA LOGGER, PORTABLE FLOW METER AND DEW POINT MEASUREMENT DEVICE	PORTABLE DEW POINT MEASUREMENT SET FOR FIELD MEASUREMENTS IN COMPRESSED AIR SYSTEMS
Representative Sample Images				
Product Subgroups	IMMERSION-TYPE FLOW METER FOR DRY COMPRESSED AIR	INLINE FLOW METER FOR DRY AIR / WET AIR	ADVANCED ULTRASONIC LEAK DETECTOR WITH INTEGRATED CAMERA AND REPORTING SOFTWARE	BASIC ULTRASONIC LEAK DETECTOR

OIL MEASURING EQUIPMENTS

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

SENSORS / ANALYZERS

Representative Sample Images				
Product Subgroups	DEW POINT SENSOR (-40°C & -70°C)	CO SENSOR / CO_2 SENSOR	OXYGEN ANALYZER	INTEGRATED DISPLAY DEW POINT SENSOR
Representative Sample Images				
Product Subgroups	FLOW SENSOR	INTEGRATED DISPLAY AMBIENT CONDITIONS MONITORING SENSOR	THERMAL SENSOR	

FLOWMETERS

Representative Sample Images			
Product Subgroups	HYDROGEN FLOWMETER	AIR FLOWMETER	NITROGEN FLOWMETER

PRESSURE TRANSMITTERS

Representative Sample Images				
Product Subgroups	PRESSURE TRANSMITTER (0-1 BAR)	PRESSURE TRANSMITTER (0-16 BAR)	PRESSURE TRANSMITTER (0-34.5 BAR)	PRESSURE TRANSMITTER (0-45 BAR)

ACCESSORIES

GENERAL

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

DRAINS

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

DIFFERENTIAL PRESSURE GAUGES

Representative Sample Images		
Product Subgroups	DIFFERENTIAL PRESSURE GAUGE	DIFFERENTIAL PRESSURE GAUGE WITH SWITCH

PRESSURE REGULATORS

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

PROPORTIONAL VALVES

Representative Sample Images	
Product Subgroups	1" to 2" STEEL PROPORTIONAL VALVE

PNEUMATIC VALVES

Representative Sample Images					
Product Subgroups	1" to 2 1/2" BALL VALVE	BUTTERFLY VALVE	PISTON VALVE	SOLENOID VALVE	BALL VALVE

MANOMETERS

Representative Sample Images					
Product Subgroups	REFRIGERANT LOW PRESSURE MANOMETER Back Connection	REFRIGERANT HIGH PRESSURE MANOMETER Back Connection	0-6 BAR MANOMETER Back Connection	0-25 BAR MANOMETER Back Connection	0-25 BAR MANOMETER Bottom Connection

CONNECTION APPARATUS

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