



**mikropor**

**Manufacturing Forward**

# COMPRESSED AIR SYSTEMS

PRODUCT CATALOG





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 systems for a variety of industries.

As the company continues to create its own technology and shapes the industry with its innovative approach, Mikropor's "Best in Class" products and solutions are appreciated by customers in more than 140 countries.

The company's sustainable growth has been provided by its passion for innovation and commitment to quality, as well as its dedication to its people. The philosophy of producing the future from today has been adapted in all processes that make up the company; from production to human resources management, from research and development to logistics systems.

Mikropor's motto, "Manufacturing Forward" predicates that the company strives to carry the same philosophy into the future with its environmentally friendly manufacturing principles that contribute to a cleaner and healthier planet.



# 04

## **GAS TREATMENT AND GAS GENERATION**

PSA NITROGEN GENERATOR	<b>58</b>
ACTIVATED CARBON TOWER	<b>64</b>
BREATING AIR SYSTEM (MBS SERIES)	<b>66</b>



GAS TREATMENT AND  
GAS GENERATION

## ▶ PSA NITROGEN GENERATOR

Pressure Swing Adsorption (PSA) type Nitrogen Generation system that is used to separate and enrich Nitrogen from Oxygen employs CMS (Carbon Molecular Sieve) for adsorbent. Carbon Molecular Sieve (CMS) adsorbs Oxygen and Water Vapor molecules under certain pressure while allowing Nitrogen to pass through.

### The Nitrogen Generator is a Two-Bed Adsorber System

The Nitrogen Generator consists of two adsorber vessels filled with CMS, a valve assembly, air filters, main pressure regulator, and a product receiver tank. Clean and dry air is directed to one of the adsorber beds where oxygen and water vapor is adsorbed faster than nitrogen in the pore structure of the CMS, thus increasing the nitrogen purity of the product gas stream to the desired level (95-99.999% as required by customer). This product flows out from the top of the adsorber bed, through the valve and into the product receiver at a pressure slightly below the feed air pressure.



### Applications

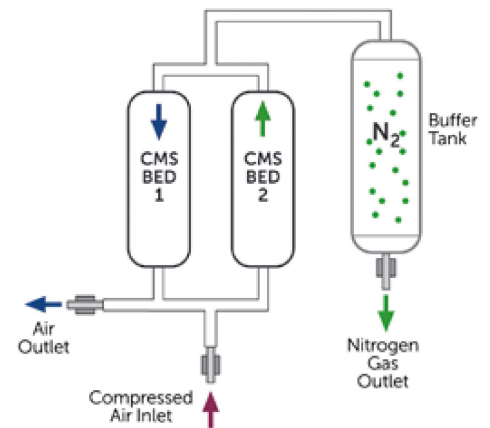
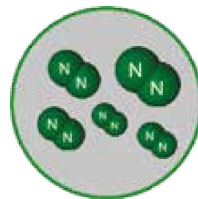
- Metal industry
- Chemical industry
- Purge
- Plastic industry
- Charge nitrogen gas in tires
- Production process and storage of food

### Optional

- Dew Point Sensor (pic.3 see next page)

### Standard

- Oxygen Analyzer / Nitrogen purity sensor
- Flow Meter
- Activated Carbon Tower
- Compressed air filters (P grade) after carbon tower and after buffer tank
- Nitrogen Generator / Silencer
- Basic Logo or Crouzet mini PLC for modular type
- Siemens HMI color touch screen PLC for twin towers
- Buffer Tank



## ▶ PSA NITROGEN GENERATOR

### Features

- Simple structure, compact design, full automated operation
- Replaces manifold usage (see pic .1)
- Touch Screen PLC for controlling the complete system (see pic. 2)
- 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 (see pic. 4)
- Durable piston valves for long-life operation (see pic. 5)
- On demand production, low cost
- 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.
- \*Replace filter element periodically only and service your compressor as normal



Replaces Manifold Usage - Pic. 1



Touch Screen PLC - Pic. 2



Dew Point Sensor - Pic. 3



Pic. 4



Long Life Piston Valve - Pic. 5



Air Filter

### Technical Specifications

Model	Air Demand @ Following Purity Level (m <sup>3</sup> /h)									
	95%	97%	98%	99%	99.50%	99.90%	99.95%	99.99%	99.999%	
MNG-10	6,3	5,6	5,1	4,5	4,1	3,5	3,1	2,8	2,2	Modular
MNG-20	10,1	9,0	8,2	7,2	7,0	5,6	5,1	4,4	3,6	
MNG-35	18,6	16,6	15,1	13,2	12,1	10,3	9,3	8,2	6,7	
MNG-60	31,0	27,6	25,1	22,0	20,2	17,1	15,5	13,6	11,1	
MNG-95	53,4	47,6	43,3	37,9	34,7	29,5	26,7	23,5	19,1	
MNG-120	71,3	63,6	57,8	50,6	46,4	39,4	35,6	31,4	25,5	
MNG-150	87,2	77,8	70,7	62,0	56,8	48,2	43,6	38,4	31,3	
MNG-250	138,8	123,8	112,5	98,6	90,3	76,7	69,4	61,1	49,7	
MNG-330	183,7	163,8	148,9	130,5	119,5	101,5	91,8	80,8	65,8	
MNG-450	248,2	221,4	201,2	176,3	161,5	137,2	124,1	109,2	89,0	
MNG-510	284,3	253,6	230,5	202,0	185,0	157,1	142,1	125,1	101,9	Twin Tower
MNG-570	315,8	281,6	256,0	224,3	205,5	174,5	157,8	139,0	113,2	
MNG-730	413,3	368,6	335,1	293,6	268,9	228,4	206,6	181,9	148,2	
MNG-910	505,6	450,9	409,9	359,1	329,0	279,4	252,7	222,5	181,2	
MNG-1110	614,6	548,2	498,3	436,6	399,9	339,7	307,2	270,5	220,3	
MNG-1230	678,0	604,7	549,7	481,6	441,2	374,7	338,9	298,4	243,1	
MNG-1370	751,3	670,1	609,1	533,7	488,9	415,2	375,5	330,6	269,3	
MNG-1820	1015,8	906,0	823,5	721,6	661,0	561,3	507,8	447,0	364,2	
MNG-2050	1185,0	1056,5	960,3	841,5	770,8	654,6	592,1	521,3	424,7	
MNG-2550	1420,1	1266,6	1151,3	1008,8	924,1	784,8	709,8	625,0	509,1	
MNG-2950	1751,6	1562,3	1420,0	1244,3	1139,8	968,0	875,6	770,9	627,9	
MNG-3540	2052,8	1830,9	1664,2	1458,2	1335,8	1134,4	1026,1	903,4	735,9	
MNG-4160	2367,2	2111,2	1919,0	1681,5	1540,3	1308,1	1183,2	1041,7	848,6	
MNG-5560	2849,7	2541,5	2310,1	2024,4	1854,0	1610,0	1424,2	1253,9	1022,2	
MNG-9170	4700,2	4191,7	3810,0	3338,5	3057,0	2655,5	2349,4	2068,1	1685,2	
MNG-11200	5740,3	5119,6	4654,5	4077,6	3734,0	3243,6	2869,4	2526,3	2057,5	



### Technical Specifications

Model	Free Nitrogen Delivery @ Following Purity Level (m <sup>3</sup> /h)									
	95%	97%	98%	99%	99.50%	99.90%	99.95%	99.99%	99.999%	
MNG-10	2,7	2,2	1,9	1,5	1	0,8	0,7	0,5	0,2	Modular
MNG-20	4,4	3,5	3,1	2,4	2	1,3	1,1	0,8	0,4	
MNG-35	8,1	6,5	5,6	4,4	3,5	2,3	2,0	1,4	0,7	
MNG-60	13,5	10,8	9,4	7,3	6	3,8	3,4	2,4	1,2	
MNG-95	23,3	18,6	16,2	12,6	10,4	6,6	5,9	4,1	2,0	
MNG-120	31,0	24,8	21,6	16,8	13,9	8,8	7,8	5,5	2,7	
MNG-150	38,0	30,4	26,4	20,6	17,0	10,8	9,6	6,7	3,3	
MNG-250	60,5	48,3	42,1	32,7	27,1	17,2	15,2	10,6	5,3	
MNG-330	80,0	63,9	55,7	43,3	35,8	22,8	20,1	14,1	7,0	
MNG-450	108,2	86,4	75,2	58,5	48,4	30,8	27,2	19,0	9,5	
MNG-510	123,9	99,0	86,2	67,1	55,5	35,3	31,2	21,8	10,9	Twin Tower
MNG-570	137,6	109,9	95,7	74,5	61,6	39,2	34,6	24,2	12,1	
MNG-730	180,1	143,9	125,3	97,5	80,6	51,3	45,3	31,6	15,8	
MNG-910	220,3	176,0	153,2	119,2	98,6	62,7	55,5	38,7	19,3	
MNG-1110	267,8	214,0	186,3	145,0	119,9	76,2	67,4	47,0	23,5	
MNG-1230	295,4	236,0	205,5	159,9	132,3	84,1	74,4	51,9	25,9	
MNG-1370	327,4	261,5	227,7	177,2	146,6	93,2	82,4	57,5	28,7	
MNG-1820	442,6	353,6	307,9	239,6	198,2	126,0	111,4	77,8	38,8	
MNG-2050	516,2	412,4	359,0	279,4	231,1	146,9	130,0	90,7	45,3	
MNG-2550	618,8	494,4	430,4	334,9	277,1	176,1	155,8	108,7	54,3	
MNG-2950	763,2	609,8	530,9	413,1	341,8	217,2	192,1	134,1	67,0	
MNG-3540	894,5	714,6	622,1	484,1	400,5	254,6	225,1	157,1	78,5	
MNG-4160	1031,4	824,1	717,4	558,3	461,9	293,6	259,6	181,2	90,5	
MNG-5560	1241,7	992,0	863,6	672,1	556,0	353,4	312,5	218,1	109,0	
MNG-9170	2048,0	1636,1	1424,3	1108,4	917,0	582,9	515,5	359,7	179,7	
MNG-11200	2501,2	1998,3	1740,0	1353,8	1120,0	712,0	629,6	439,4	219,4	

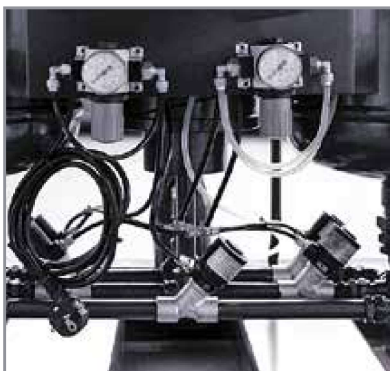
### Reference Conditions

Inlet Compressed Air Pressure	Outlet Nitrogen Pressure	Ambient Temperature	Inlet Air Dew Point	
7.5 bar	6 bar	25°C	3°C (Under or equal 99.5% purity)	-40°C (Above 99.5% purity)
			Refrigerant air dryer and activated carbon filter are required	Desiccant dryer and activated carbon filter are required

### N<sub>2</sub> NITROGEN

Model	Buffer Tank	Connections		Dimensions (mm)		
		Air Inlet	Nitrogen Outlet	Width	Length	Height
MNG-10	26 L	1/2"	1/2"	610	1120	1090
MNG-20	35 L	1/2"	1/2"	560	1081	1284
MNG-35	52 L	1/2"	1/2"	736	1179	1787
MNG-60	70 L	1/2"	1/2"	932,5	1115,5	1485
MNG-95	97 L	1"	1/2"	760	1659	1485
MNG-120	126 L	1"	1/2"	890	1634	1442
MNG-150	151 L	1"	1/2"	890	1634	1639
MNG-250	280 L	1"	1/2"	892	1760	1975
MNG-330	408 L	1"	1/2"	950	1910	2025
MNG-450	464 L	1"	1/2"	1010	2218	2134
MNG-510	515 L	1 1/2"	3/4"	1010	2208	2028
MNG-570	573 L	1 1/2"	3/4"	1010	2208	2226
MNG-730	712 L	1 1/2"	3/4"	1110	2685	2084
MNG-910	1,042 m <sup>3</sup>	1 1/2"	1"	1220	2727	2485
MNG-1110	1,290 m <sup>3</sup>	1 1/2"	1"	1322	2896	2521
MNG-1230	1,402 m <sup>3</sup>	2"	1"	1322	2898	2724
MNG-1370	1,498 m <sup>3</sup>	2"	1 1/4"	1355	2895	2941
MNG-1820	2,019 m <sup>3</sup>	2"	1 1/2"	1793	3599	2634
MNG-2050	2,336 m <sup>3</sup>	DN80	1 1/2"	1964	3390	3124
MNG-2550	2,336 m <sup>3</sup>	DN80	2"	2139	3666	3194
MNG-2950	2,336 m <sup>3</sup>	DN80	2"	2245	4074	2787
MNG-3540	2,336 m <sup>3</sup>	DN80	2"	2375	4024	3054
MNG-4160	2,336 m <sup>3</sup>	DN80	2"	2376	4020	3361
MNG-5560	2,336 m <sup>3</sup>	DN100	2 1/2"	2425	4125	3890
MNG-9170	2,336 m <sup>3</sup>	DN150	DN80	2986	4502	4364
MNG-11200	2,336 m <sup>3</sup>	DN150	DN100	4672	3081	4728

**Note:** Mikropor supplies buffer tank volumes for 99,5% and higher Nitrogen purities. For purities lower than 99,5%, it may be necessary to use an additional tank.



### Correction Factor

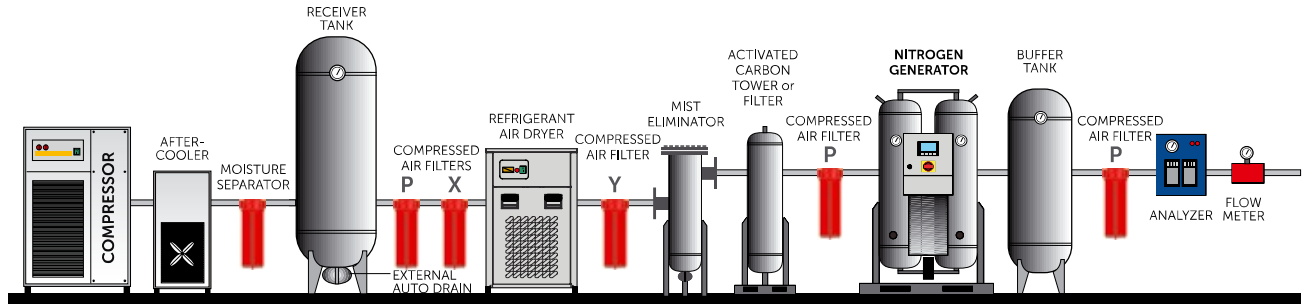
Inlet Pressure (bar)	F1	Ambient Temp. (°C)	F2
6	0,82	5	0,85
6,5	0,88	10	1
7	0,94	15	1
7,5	1	20	1
8	1,05	25	1
8,5	1,1	30	0,91
9	1,14	35	0,82
9,5	1,2	40	0,74
10	1,21	45	0,6

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

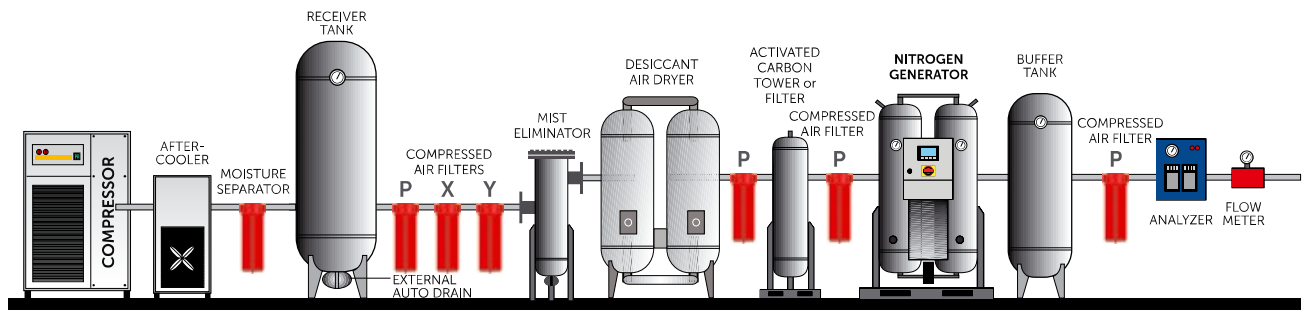
# PSA NITROGEN GENERATOR

"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."

AIR LINE DESIGN (Under or equal 99.5% purity)



AIR LINE DESIGN (Above 99.5% purity)



## ▶ ACTIVATED CARBON TOWER

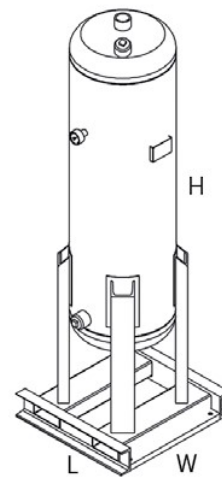
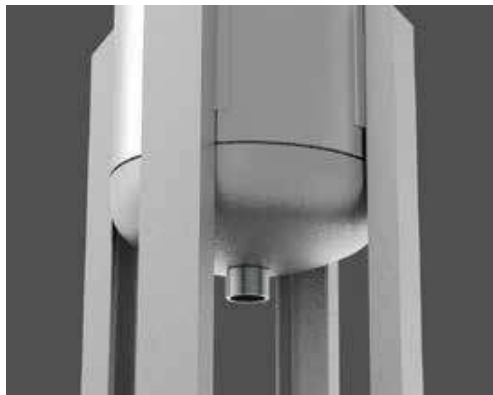
Many industries such as the electronic and hospital industries, pharmaceutical industries, food and beverage sectors require the removal of residual oil vapors and odors from the compressed air. Mikropor's solution for this application is the MCT Series activated carbon towers. With standard pre and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



### Correction Factor

Operating Pressure (bar)	PSI	Correction Factor
1	15	0,5
3	44	0,71
5	73	0,87
7	100	1
9	131	1,12
10	145	1,15

Max. Recommended Operating Temperature	Max. Oil Carryover at 21°C ( $\text{mg/m}^3$ )	Max. Working Pressure
25°C	0,003°C	10 bar



### Technical Specifications

Model	Connection Size	Flow Rate (m <sup>3</sup> /h)	Max. Working Pressure (bar)	Active Carbon (kg)	Housing Dimensions (mm)		
					Length	Width	Height
MTC130	1"	130	10	14	347	450	1172
MTC185	1"	185	10	20	450	563	1413
MTC250	1"	250	10	28	430	601	1370
MTC300	1 1/2"	300	10	37	500	649	1336
MTC360	1 1/2"	360	10	37	500	649	1336
MTC440	1 1/2"	440	10	46	500	648	1536
MTC575	1 1/2"	575	10	56	469	604	1733
MTC680	2"	680	10	74	550	540	1936
MTC850	2"	850	10	97	580	600	1957
MTC1000	2"	1000	10	128	657	638	1617
MTC1250	DN80	1250	10	149	708	880	2400
MTC1500	DN80	1500	10	167	708	880	2558
MTC1800	DN80	1800	10	210	810	980	2423
MTC2200	DN80	2200	10	262	810	1100	2600
MTC2700	DN80	2700	10	320	910	1100	2758
MTC3200	DN100	3200	10	356	866	1050	3023
MTC3600	DN100	3600	10	400	866	1050	3237
MTC4400	DN100	4400	10	537	1130	1250	2914
MTC5000	DN100	5000	10	624	1130	1310	3420
MTC6300	DN150	6300	10	754	1230	1230	3365
MTC7200	DN150	7200	10	845	1430	1430	3075
MTC8800	DN150	8800	10	1009	1430	1430	3369
MTC10800	DN200	10800	10	1148	1430	1430	3863

# ► BREATHING AIR SYSTEM MBS SERIES

GAS TREATMENT AND  
GAS GENERATION ◀

## Breathing Air Solutions

High-quality compressed air is crucial to many industries and has a vital role in 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 to protect against a range of contaminants that may be present in a compressed air fed breathing air system.)



## Technical Specifications

Model	Capacity		Connection Size	Replacement Filter Kit Model	Voltage	Max. Working Pressure (bar)
	(m <sup>3</sup> /h)	(cfm)				
MBS 5	10	5	1/2"	G100-ELM	115-240V/50-60Hz.	16
MBS 10	20	10	1/2"	G100-ELM	115-240V/50-60Hz.	16
MBS 15	25	15	1/2"	G100-ELM	115-240V/50-60Hz.	16
MBS 20	35	20	1/2"	G100-ELM	115-240V/50-60Hz.	16
MBS 25	45	25	1/2"	G150-ELM	115-240V/50-60Hz.	16
MBS 30	50	30	1/2"	G200-ELM	115-240V/50-60Hz.	16
MBS 40	70	40	1 1/2"	G250-ELM	115-240V/50-60Hz.	16
MBS 50	85	50	1 1/2"	G300-ELM	115-240V/50-60Hz.	16
MBS 60	100	60	1 1/2"	G500-ELM	115-240V/50-60Hz.	16
MBS 75	130	75	1 1/2"	G600-ELM	115-240V/50-60Hz.	16
MBS 100	170	100	1 1/2"	G851-ELM	115-240V/50-60Hz.	16
MBS 120	200	120	1 1/2"	G1210-ELM	115-240V/50-60Hz.	16
MBS 180	300	180	1 1/2"	ELM 300	115-240V/50-60Hz.	16
MBS 240	400	240	1 1/2"	ELM 300	115-240V/50-60Hz.	16
MBS 250	440	250	1 1/2"	ELM 300	115-240V/50-60Hz.	16
MBS 300	575	300	1 1/2"	ELM 600	115-240V/50-60Hz.	16
MBS 400	680	400	2"	ELM 600	115-240V/50-60Hz.	16
MBS 500	850	500	2"	ELM 600	115-240V/50-60Hz.	16
MBS 600	1000	600	2"	ELM 600	115-240V/50-60Hz.	16
MBS 700	1250	700	DN80	ELM 800	115-240V/50-60Hz.	16
MBS 800	1500	800	DN80	ELM 1200	115-240V/50-60Hz.	16
MBS 1000	1800	1000	DN80	ELM 1200	115-240V/50-60Hz.	16
MBS 1250	2200	1250	DN80	ELM 1600	115-240V/50-60Hz.	16

Contaminants	CSA Z180.1	European Pharmacopoeia	OHSA Grade D
Water	Pressure dew point of 5°C below lowest system temp.	67 ppm (-45°C atmospheric dew point)	-
Oil/Lubricant	<1 mg/m <sup>3</sup>	0,1 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>
Carbon Dioxide (CO <sub>2</sub> )	<500 ppm	<500 ppm	<1000 ppm
Carbon Monoxide (CO)	<5 ppm	<5 ppm	<10 ppm
Nitrogen Oxides (NO+NO <sub>2</sub> )	-	<2 ppm	-
Sulphur Dioxide (SO <sub>2</sub> )	-	<1 ppm	-
Oxygen (O <sub>2</sub> )	-	21±1	-
Taste and Odor	-	Free	-





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