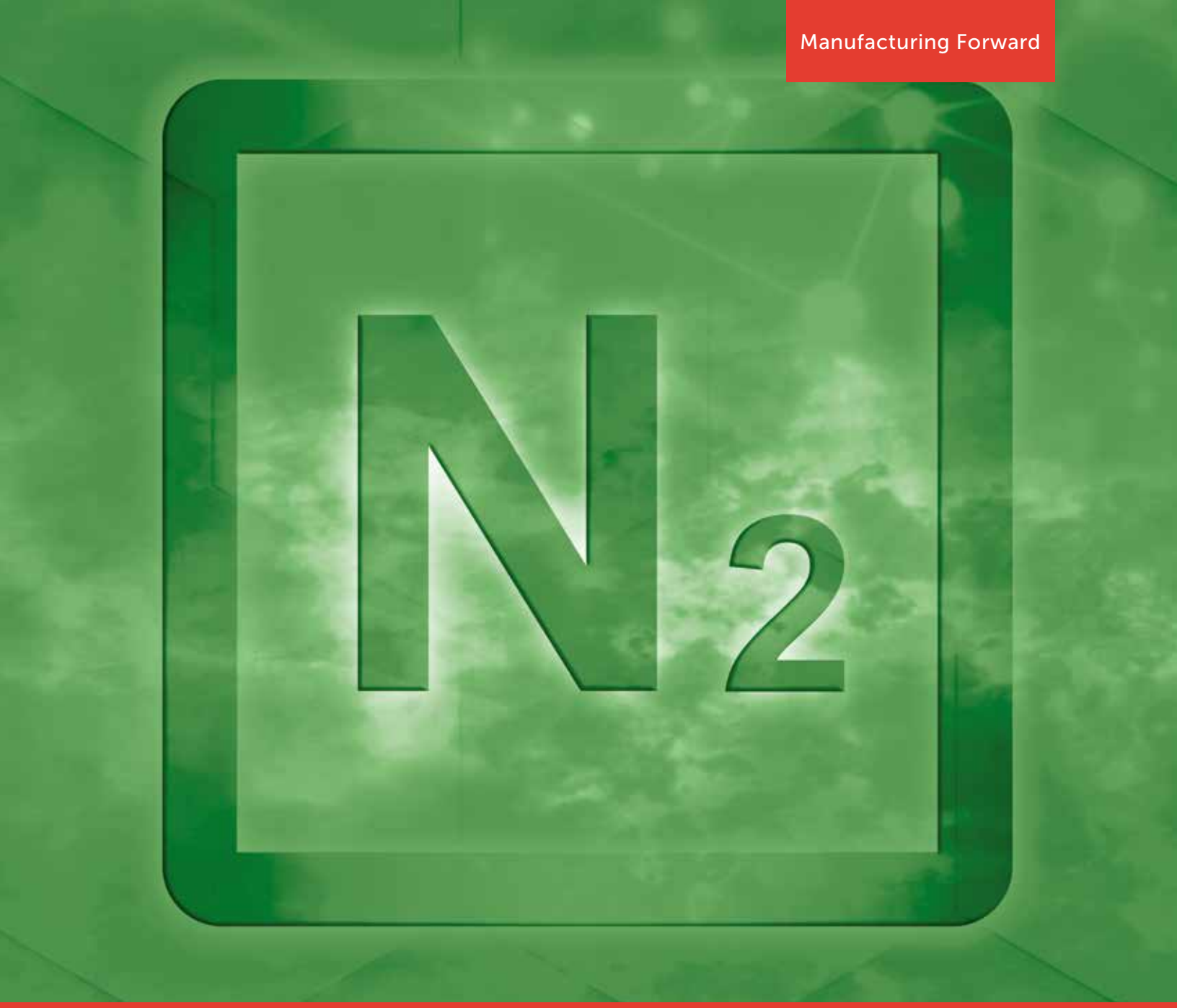
Manufacturing Forward



MNG-US-PRO SERIES
PSA NITROGEN GENERATORS

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mikropor

Manufacturing Forward

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.

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MNG-US-PRO SERIES PSA NITROGEN GENERATORS

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

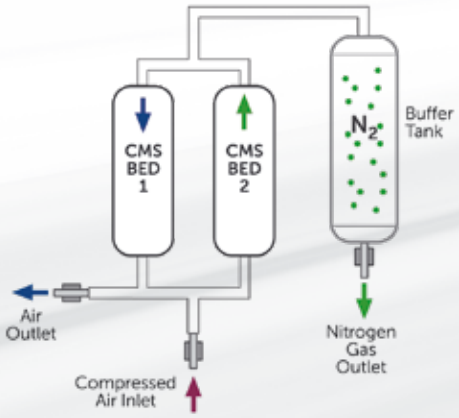
CMS adsorbs oxygen and water vapor molecules under a certain pressure while allowing nitrogen to pass through in the line.

The Nitrogen Generator is a Two-Bed Adsorber System

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

Applications

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



MNG-US-PRO SERIES PSA NITROGEN GENERATORS

FEATURES

Standard

- Nitrogen Modules
- Silencer
- Manometers
- Pressure Transmitter
- ECO Mode
- T Filter
- Piston Valves
- Valve Control Regulator
- 3-Way-By-Pass Valve
- Flowmeter
- Carbolescer
- HMI Color Touch Screen PLC
- Oxygen Analyzer

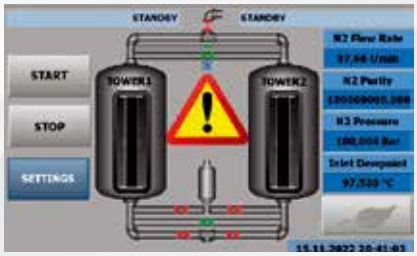
Optional

- Dew Point Sensor
- Proportional Valve
- Pressure Regulator (Nitrogen Outlet)
- 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

MNG-US-PRO SERIES PSA NITROGEN GENERATORS

Reference Conditions

Pressure Drop	Inlet Compressed Air Pressure	Outlet Nitrogen Pressure	Ambient Temperature	Inlet Air Dew Point
22 psi	110 psi	87 psi	77°F	≤37 °F

Technical Specifications

Mikropor Model	Air Demand @ Following Purity Level (SCFM)									
	95%	97%	98%	99%	99.50%	99.90%	99.95%	99.99%	99.995%	99.999%
MNG-PRO-140	30.4	28.5	27.6	21.9	20.3	18.2	17.7	16.1	13.5	13.3
MNG-PRO-185	40.5	38.0	36.9	29.3	27.1	24.3	23.6	21.5	18.0	17.8
MNG-PRO-225	49.6	46.5	45.1	35.9	33.2	29.7	28.9	26.3	22.1	21.7
MNG-PRO-360	79.0	74.1	71.8	57.1	52.8	47.2	46.0	41.8	35.1	34.6
MNG-PRO-475	104.5	98.0	95.1	75.5	69.9	62.5	60.9	55.3	46.5	45.8
MNG-PRO-640	141.2	132.5	128.5	102.1	94.5	84.5	82.4	74.8	62.8	61.9
MNG-PRO-700	161.8	151.7	147.2	116.9	108.3	96.8	94.3	85.7	72.0	70.9
MNG-PRO-810	179.7	168.5	163.4	129.8	120.2	107.5	104.8	95.1	79.9	78.7
MNG-PRO-1065	235.1	220.5	213.9	169.9	157.4	140.7	137.1	124.5	104.6	103.0
MNG-PRO-1300	287.6	269.8	261.7	207.9	192.5	172.1	167.7	152.3	128.0	126.0
MNG-PRO-1580	349.7	328.0	318.1	252.7	234.0	209.2	203.9	185.2	155.6	153.2
MNG-PRO-1750	385.8	361.8	350.9	278.8	258.2	230.7	224.9	204.3	171.6	169.0
MNG-PRO-1940	427.4	400.9	388.9	308.9	286.1	255.7	249.2	226.4	190.1	187.2
MNG-PRO-2610	577.9	542.0	525.8	417.7	386.8	345.7	337.0	306.0	257.1	253.1
MNG-PRO-3050	674.0	632.1	613.1	487.1	451.0	403.1	393.2	357.0	299.9	295.3
MNG-PRO-3660	808.0	757.8	735.0	583.9	540.7	483.3	471.1	427.9	359.4	353.9
MNG-PRO-4500	996.6	934.7	906.6	720.2	667.0	596.1	581.1	527.7	443.3	436.5
MNG-PRO-5290	1168.0	1095.4	1062.5	844.0	781.7	698.6	681.0	618.5	519.5	511.6
MNG-PRO-6100	1346.8	1263.2	1225.2	973.3	901.3	805.6	785.3	713.2	599.1	589.9
MNG-PRO-7340	1621.3	1520.6	1475.0	1171.7	1085.0	969.8	945.4	858.6	721.4	710.5
MNG-PRO-9060	2001.2	1876.9	1820.6	1446.2	1339.3	1197.0	1166.9	1059.8	890.2	876.5
MNG-PRO-10780	2380.8	2232.9	2165.9	1720.5	1593.3	1424.1	1388.2	1260.7	1059.0	1042.7
MNG-PRO-12100	2674.2	2507.9	2432.6	1932.4	1789.5	1599.5	1559.2	1416.0	1189.4	1171.2
MNG-PRO-14780	3266.0	3063.1	2971.7	2360.2	2185.7	1953.7	1904.4	1729.5	1452.8	1430.4

MNG-US-PRO SERIES PSA NITROGEN GENERATORS

Technical Specifications

Mikropor Model	Free Nitrogen Delivery @ Following Purity Level (SCFM)									
	95%	97%	98%	99%	99.50%	99.90%	99.95%	99.99%	99.995%	99.999%
MNG-PRO-140	19.0	15.8	14.5	10.0	8.1	6.3	5.7	3.1	2.4	1.8
MNG-PRO-185	25.3	21.1	19.4	13.3	10.9	8.4	7.6	4.1	3.2	2.4
MNG-PRO-225	31.0	25.9	23.8	16.3	13.3	10.2	9.3	5.1	3.9	3.0
MNG-PRO-360	49.3	41.1	37.8	25.9	21.1	16.3	14.9	8.0	6.3	4.7
MNG-PRO-475	65.3	54.4	50.0	34.3	28.0	21.6	19.7	10.6	8.3	6.3
MNG-PRO-640	88.3	73.6	67.6	46.4	37.8	29.1	26.6	14.4	11.2	8.5
MNG-PRO-700	101.1	84.3	77.5	53.1	43.3	33.4	30.4	16.5	12.8	9.7
MNG-PRO-810	112.3	93.6	86.0	59.0	48.1	37.1	33.8	18.3	14.3	10.8
MNG-PRO-1065	147.0	122.5	112.6	77.2	62.9	48.5	44.2	23.9	18.7	14.1
MNG-PRO-1300	179.8	149.9	137.7	94.5	77.0	59.3	54.1	29.3	22.8	17.3
MNG-PRO-1580	218.6	182.2	167.4	114.9	93.6	72.1	65.8	35.6	27.8	21.0
MNG-PRO-1750	241.1	201.0	184.7	126.7	103.3	79.6	72.6	39.3	30.6	23.1
MNG-PRO-1940	267.2	222.7	204.7	140.4	114.4	88.2	80.4	43.5	34.0	25.6
MNG-PRO-2610	361.2	301.1	276.7	189.8	154.7	119.2	108.7	58.9	45.9	34.7
MNG-PRO-3050	421.3	351.2	322.7	221.4	180.4	139.0	126.8	68.7	53.6	40.5
MNG-PRO-3660	505.0	421.0	386.9	265.4	216.3	166.7	152.0	82.3	64.2	48.5
MNG-PRO-4500	622.9	519.3	477.2	327.4	266.8	205.6	187.5	101.5	79.2	59.8
MNG-PRO-5290	730.0	608.6	559.2	383.7	312.7	240.9	219.7	118.9	92.8	70.1
MNG-PRO-6100	841.8	701.8	644.9	442.4	360.5	277.8	253.3	137.2	107.0	80.8
MNG-PRO-7340	1013.3	844.8	776.3	532.6	434.0	334.4	305.0	165.1	128.8	97.3
MNG-PRO-9060	1250.8	1042.7	958.2	657.4	535.7	412.8	376.4	203.8	159.0	120.1
MNG-PRO-10780	1488.0	1240.5	1139.9	782.0	637.3	491.1	447.8	242.4	189.1	142.8
MNG-PRO-12100	1671.4	1393.3	1280.3	878.4	715.8	551.5	503.0	272.3	212.4	160.4
MNG-PRO-14780	2041.2	1701.7	1564.1	1072.8	874.3	673.7	614.3	332.6	259.4	196.0

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.

MNG-US-PRO SERIES PSA NITROGEN GENERATORS

Technical Specifications

Mikropor Model	RECOMMENDED BUFFER TANK VOLUMES (GALLON)									
	95%	97%	98%	99%	99. 50%	99.90%	99.95%	99.99%	99.995%	99.999%
MNG-PRO-140	16	13	12	8	7	5	5	3	2	2
MNG-PRO-185	21	17	16	11	9	7	6	3	3	2
MNG-PRO-225	26	21	20	13	11	8	8	4	3	2
MNG-PRO-360	41	34	31	21	17	13	12	7	5	4
MNG-PRO-475	54	45	41	28	23	18	16	9	7	5
MNG-PRO-640	73	61	56	38	31	24	22	12	9	7
MNG-PRO-700	84	70	64	44	36	28	25	14	11	8
MNG-PRO-810	93	77	71	49	40	31	28	15	12	9
MNG-PRO-1065	121	101	93	64	52	40	37	20	15	12
MNG-PRO-1300	149	124	114	78	64	49	45	24	19	14
MNG-PRO-1580	181	151	138	95	77	60	54	29	23	17
MNG-PRO-1750	199	166	153	105	85	66	60	32	25	19
MNG-PRO-1940	221	184	169	116	95	73	66	36	28	21
MNG-PRO-2610	299	249	229	157	128	99	90	49	38	29
MNG-PRO-3050	348	290	267	183	149	115	105	57	44	33
MNG-PRO-3660	417	348	320	219	179	138	126	68	53	40
MNG-PRO-4500	515	429	394	271	221	170	155	84	65	49
MNG-PRO-5290	603	503	462	317	258	199	182	98	77	58
MNG-PRO-6100	696	580	533	366	298	230	209	113	88	67
MNG-PRO-7340	838	698	642	440	359	276	252	136	106	80
MNG-PRO-9060	1034	862	792	543	443	341	311	168	131	99
MNG-PRO-10780	1230	1026	942	647	527	406	370	200	156	118
MNG-PRO-12100	1382	1152	1058	726	592	456	416	225	176	133
MNG-PRO-14780	1687	1407	1293	887	723	557	508	275	214	162

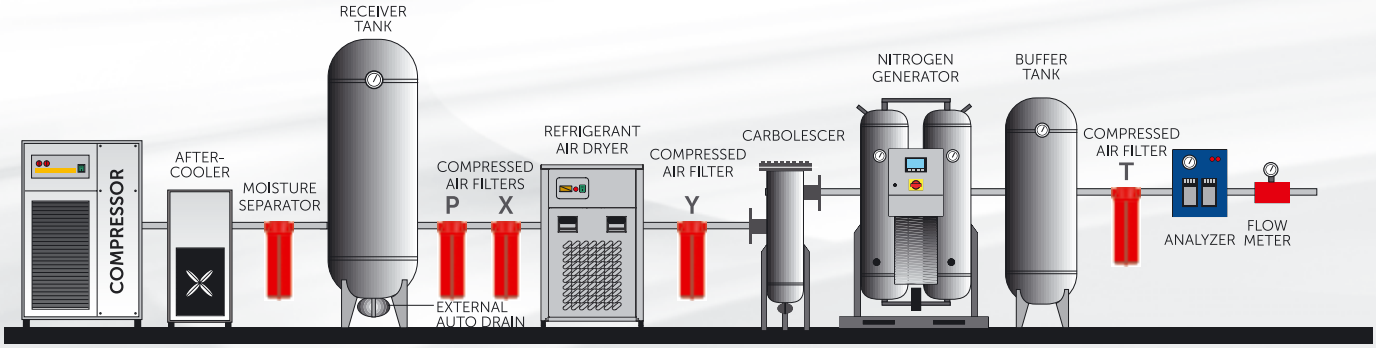
MNG-US-PRO SERIES PSA NITROGEN GENERATORS

Correction Factor

Inlet Pressure (psi)	F1	Ambient Temp. (°F)	F2
72	0.68	41	0.85
80	0.73	50	1
87	0.79	59	1
94	0.88	68	1
100	0.90	77	1
110	1	86	0.91
116	1.04	95	0.82
123	1.08	104	0.74
130	1.15	113	0.6

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

AIR LINE DESIGN



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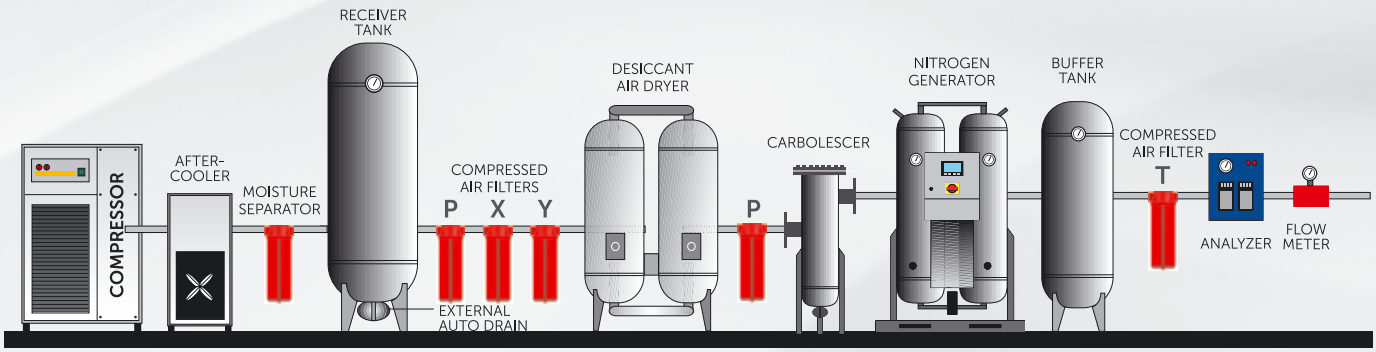

*Mikropor reserves the right to change the design and/or dimensions and/or weight of his products at any time without any notice or liability.

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