MMD-VP SERIES
DESICCANT COMPRESSED AIR DRYERS

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
- Electronic
- 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

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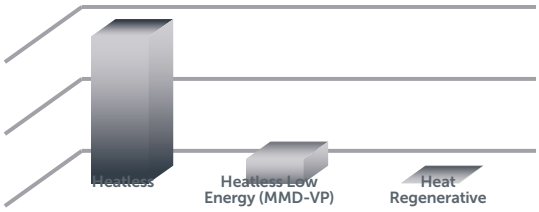
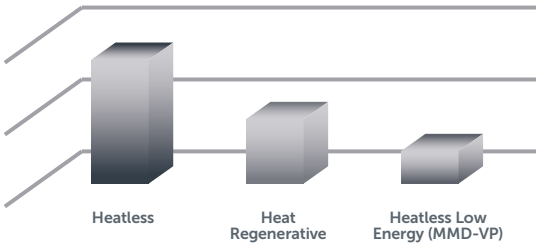
Dry Compressed Air Loss



Power Consumption



Features

- **Standard Properties**
  - Corrosion protected aluminum construction
  - Lightweight with a compact design
  - High-efficiency regeneration due to the vacuum pump addition
  - High crush strength adsorption material
  - User-friendly controller
  - Easy installation and maintenance
- **Optional Propertie:**
  - PLC touch screen monitoring and controller
  - Dew point sensor

Working Principle

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

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

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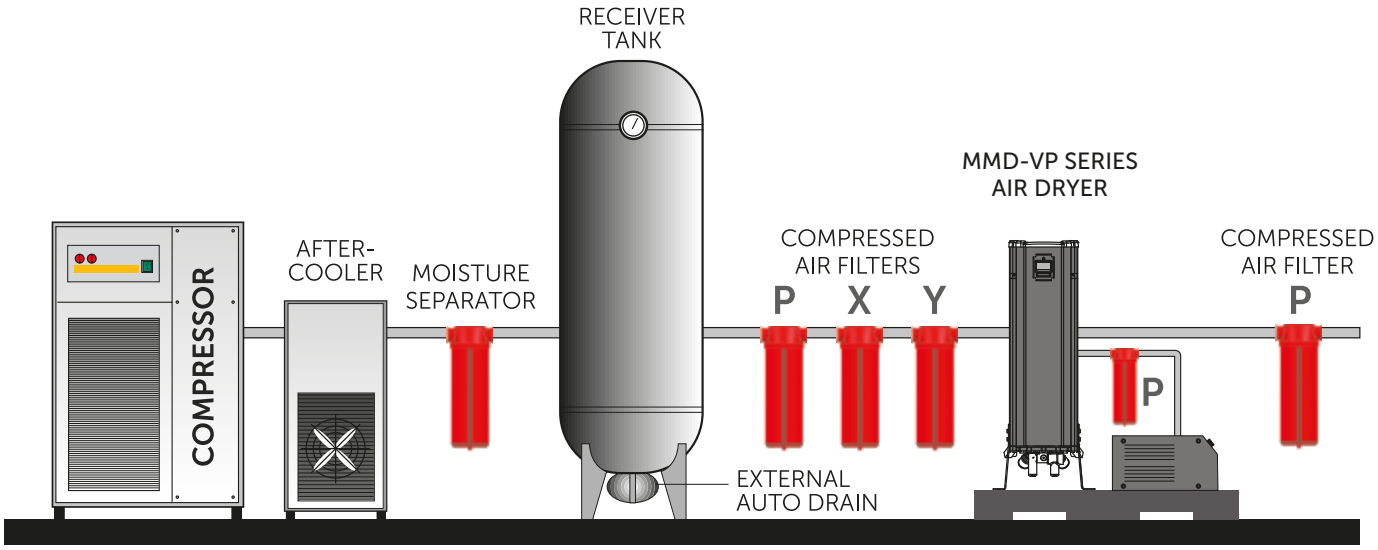
AIR LINE DESIGN



Technical Specifications

Model	Flow Rate (m³/h)	Vacuum Pump (kW)	Connection Size	Voltage	Max. Working Pressure (bar)	P Filter Model
MMD-VP-60	100	1,1	1 1/2"	400/3/50	16	GON-35
MMD-VP-75	130	1,1	1 1/2"	400/3/50	16	GON-35
MMD-VP-100	170	1,3	1 1/2"	400/3/50	16	GON-35
MMD-VP-120	200	2,2	1 1/2"	400/3/50	16	GON-35
MMD-VP-180	300	2,2	1 1/2"	400/3/50	16	GON-35
MMD-VP-240	400	3	1 1/2"	400/3/50	16	GON-35
MMD-VP-340	575	4	1 1/2"	400/3/50	16	GON-35
MMD-VP-400	680	4	2"	400/3/50	16	GON-35
MMD-VP-500	850	5,5	2"	400/3/50	16	GON-35
MMD-VP-590	1000	5,5	2"	400/3/50	16	GON-35
MMD-VP-740	1250	7,5	3"	400/3/50	16	GON-35

Correction Factor for MMD-VP Series

Inlet Temperature (°C)	F1	Pressure (bar)	F2
20	0,69	4,5	1
25	0,75	5	1
30	0,88	6	1
35	1	7	1
40	1,12	8	0,8
45	1,25	9	0,73
50	1,25	10	0,59
	1,5	11	
	1,62	12	
	1,74	13	
	1,87	14	
	1,99	15	
	2,11	16	

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)]

Example for Choosing the Correct Dryer:

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

400 / (0.88*0.8) = 568 m³/h

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