

Mist Eliminator

MIS 300 – 8000 Series

Aircel provides a full line of mist eliminators to effectively remove oil, solids and water from your compressed air system. In addition, this technology can serve as an efficient prefilter and contaminant separator for refrigerated and desiccant compressed air dryers. By reducing the liquid loading potential and preventing liquid slugs from reaching the dryer, it will extend the life of your refrigerated dryer's heat exchanger or the life of desiccant in regenerative dryers.

Features

- Low pressure differential ΔP 0.5 - 1.0 psi @ rated capacity under typical conditions.
- Long service life.
- Pressure vessel ASME U Stamped standard National Board Registered.
- CRN available upon request.
- Low pressure drop, maximum filter area and dirt capacity.
- Hinged flange and lift lug standard on closure flanges.
- Service access without breaking connections.
- Rugged enameled steel.
- Connections sizes from 2 to 10-inch ANSI flange.
- 5-year performance warranty.

Optional Features

- Installed differential pressure gauge.
- Zero air-loss drain valve.



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The Aircel Mist Eliminator features an element with patent pending urethane threaded end. This unique design requires no internal loose parts and no internal housing center core. This provides easy, hassle-free element changeout and reduces the overall initial unit shipping weight, saving on freight costs. The element is designed with optimum pleat spacing and fin depth to provide unsurpassed low differential pressure, dirt holding capacity, and efficiency. Filtration efficiency and permeability are based on independent laboratory testing by Interbasic Resources, Inc.

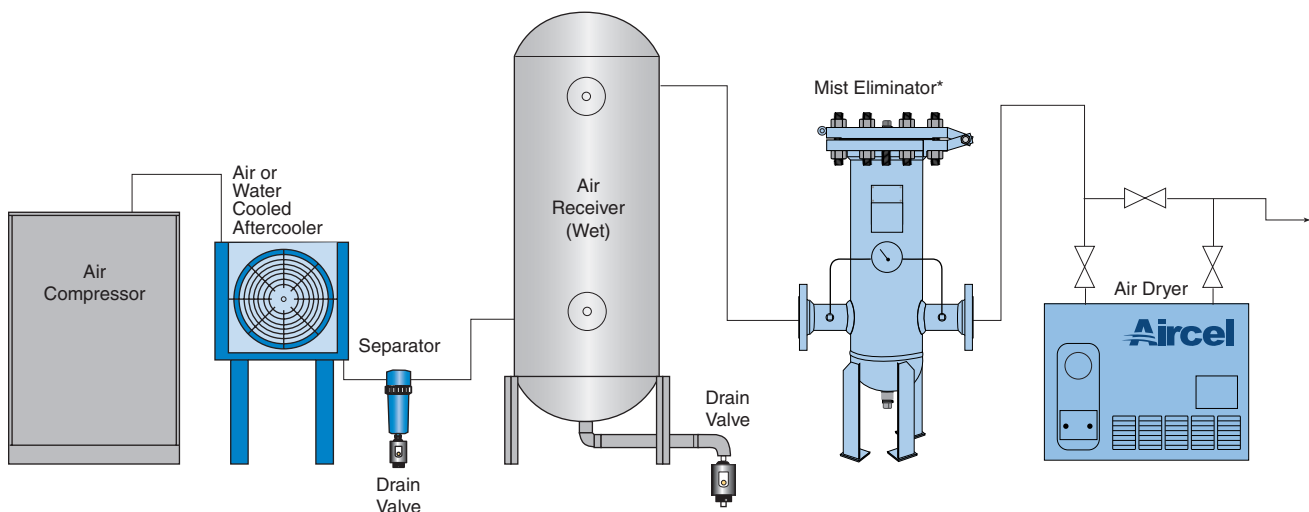


Element Features

- High efficiency pleated construction.
- High efficiency needed polyester outer layer particulate removal.
- Two stage borosilicate glass coalescing media.
- Unique threaded element "design" (patent pending) requires no internal loose parts and no internal housing center core.
- The filter element will collect particles greater than 1 micron with 99.5% efficiency. Particles 0.5 micron in size will be filtered at an efficiency of 99.3%.

Recommended Installation

Locating a mist eliminator downstream from the compressor effectively lengthens the maintenance cycle on all elements, significantly reducing costs of system maintenance.



Note: Mist Eliminator is shown with optional installed differential pressure gauge.

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Dimensions & Specifications

Model Number	Capacity ¹ (scfm)	Connections (ANSI)	Dimensions (inches)				Wt. (lbs)	Element Model Number	Optional Zero Air-Loss Drain Size
			OH	OD	C	Service Space			
MIS-300	300	2"	36	8-5/8	16	10	120	MIS-300E	UFM-T1
MIS-500	500	2"	40	8-5/8	16	16	150	MIS-500E	UFM-T20
MIS-1000	1000	3"	48	8-5/8	20	20	180	MIS-1000E	UFM-T100
MIS-1500	1500	4"	52	10-3/4	20	20	300	MIS-1500E	UFM-T100
MIS-2000	2000	4"	54	10-3/4	20	24	325	MIS-2000E	UFM-T100
MIS-3000	3000	6"	60	12-3/4	24	26	400	MIS-3000E	UFM-T100
MIS-4500	4500	6"	64	12-3/4	24	26	500	MIS-4500E	UFM-T100
MIS-6500	6500	8"	78	16	28	36	850	MIS-6500E	UFM-T100
MIS-8000	8000	10"	88	20	32	36	1200	MIS-8000E	UFM-T100

¹ Capacity rated at 100 psig operating pressure, 100°F inlet temperature.

Maximum working pressure: 250 psig Cover style: Blind flange

Operating temperature range: -20°F to 200°F Carbon steel leg height: 12" (included in OH dimension above)

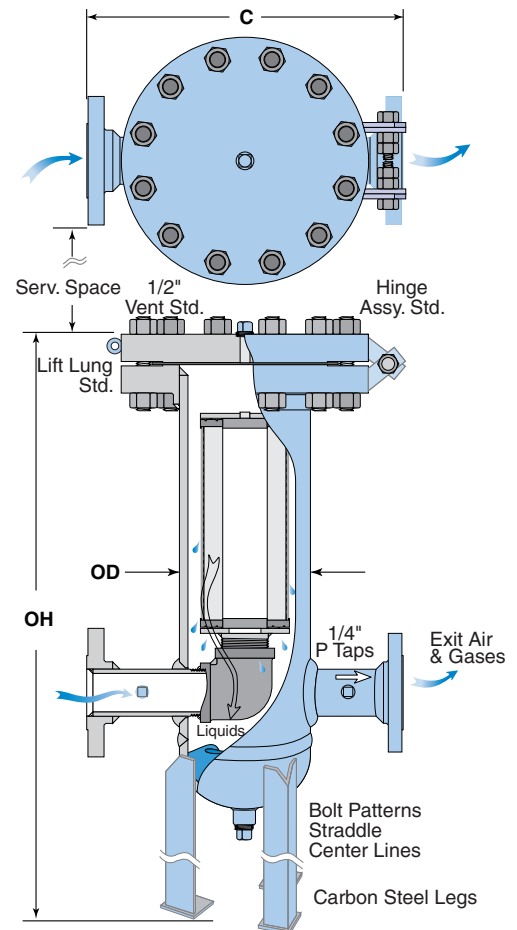
Mist Eliminator Provides Energy Savings

For every 8 psi pressure drop, compressor horsepower efficiency will be reduced by 4%. Therefore, the annual energy cost to run a typical 100 hp compressor can be figured as follows:

- Convention Filter: \$0.07/KW-hr x 8760 hours x 74.6 KW-hr x 4% = \$1829.80
- Mist Eliminator: \$0.07/KW-hr x 8760 hours x 74.6 KW-hr x 0.5% = \$228.70 (1 psi pressure drop = 0.5%)
- That's a savings of \$1601.10 per year.

Aircel Ultramat Zero Air-Loss

Condensate Drain valves assure that no compressed air is lost when condensate is drained, resulting in significant energy savings.



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Capacity Correction Factors

The published standard capacities for compressed air mist eliminators are based on 100 psig inlet pressure and 100°F inlet temperature. When these conditions vary, a given mist eliminator will be able to filter either more or less compressed air than its standard capacity. There are two ways in which this information can be used. The first is to start with a specific mist eliminator size and recalculate its capacity based on the known operating conditions using the correction factors given below. The other, with a given set of operating conditions, is to select the proper mist eliminator size based on applying the correction factors to the flow rate. Examples based on applying the correction factors are shown below.

Capacity correction factors for differing system air pressure													
System Pressure (psig)	20	40	60	80	100	120	140	160	180	200	220	240	250
Correction Factor - C1	0.30	0.48	0.65	0.83	1.00	1.17	1.35	1.52	1.70	1.87	2.05	2.22	2.31

Capacity correction factors for differing system air temperature													
System Pressure (°F)	-20	0	20	40	60	80	100	120	140	160	180	200	
Correction Factor - C2	1.52	1.41	1.31	1.22	1.14	1.07	1.00	0.94	0.88	0.83	0.79	0.75	

To Size the Mist Eliminator Capacity for Actual Conditions

Adjusted Capacity = scfm x C1	
<p>To calculate the capacity of a given mist eliminator based on non-standard operating conditions, multiply the standard capacity by the appropriate correction factor.</p>	
EXAMPLE:	<p>Mist Eliminator Model: MIS-1000</p> <p>Standard Capacity: 1000 scfm</p> <p>Actual Operating Conditions: 80 psig inlet pressure: C1 = 0.83 120°F inlet temperature: C2 = 0.94</p> <p>Adjusted Capacity = 1000 scfm x 0.83 x 0.94 = 780 scfm</p>

To Select the Mist Eliminator for Actual Conditions

Adjusted Capacity = scfm/C1	
<p>To choose a mist eliminator based on a given flow at non-standard operating conditions, divide the given flow by the appropriate correction factors.</p>	
EXAMPLE:	<p>Given Flow: 1000 scfm</p> <p>Actual Operating Conditions: 80 psig inlet pressure: C1 = 0.83 120°F inlet temperature: C2 = 0.94</p> <p>Adjusted Capacity = 1000 scfm / (0.83 x 0.94) = 1282 scfm</p> <p>Adjusted Mist Eliminator Model Size: MIS-1500</p>



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Bulletin No. UFSB0138
Mist Eliminator 09-07