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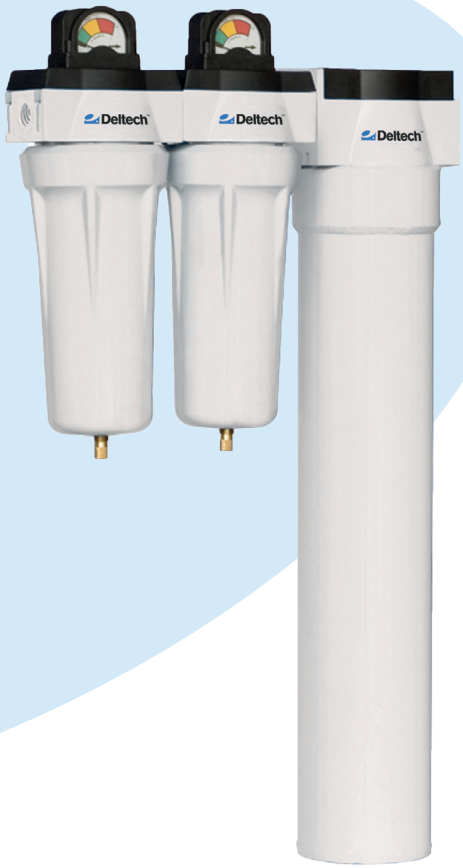

DMD Series
Membrane Compressed Air Dryer

Models:
DMD1-3, DMD2-3, DMD3-4, DMD4-4, DMD5-6, DMD6-6, DMD7-8, DMD8-16, DMD9-16

FORM NO.: 3227496
REVISION: 04/2024

INSTRUCTION MANUAL

Read and understand this manual prior to operating or servicing this product.

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Contents

1.0 Safety

All compressed gases, including air, can be dangerous. Know and follow all safety rules when using compressed air and especially when breaking into and blowing down compressed air lines to install or modify equipment.

Compressed air treated by this equipment may not be suitable for breathing without further purification. See OSHA standard 29 CRF 1910.134 for breathing air requirements.

Specific safety procedures, including training of all personnel, should be developed and implemented.

2.0 Installation, Start-Up and Operation

2.1 Filtration

Membrane dryers are specifically designed to remove water vapor. Dryer performance and life may be reduced if liquid water, liquid compressor oils, or particulate (e.g. Pipe scale, metal shavings, etc.) enter the dryer. Filter(s) must be installed in front of the dryer to remove both liquid water, particulate, and oil aerosols. Suitable filters are available from the factory.

The extended three year warranty on dryers requires use of factory supplied or approved coalescing filters. A written record of filter element changes every six months, and drain mechanism replacement yearly must be maintained.

Prefilter Package - One Prefilter

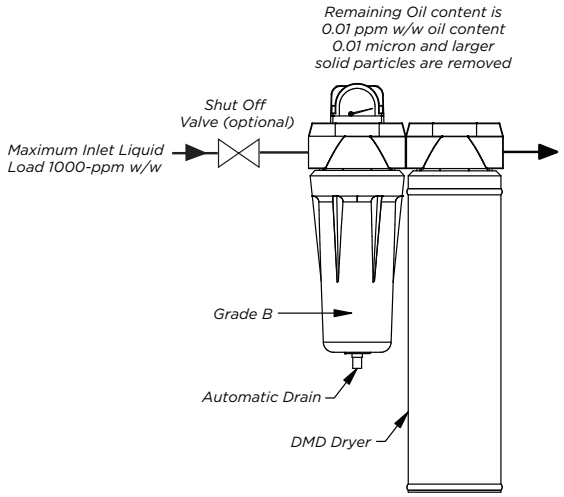

Figure 2.1A

Prefilter Package - Two Prefilters

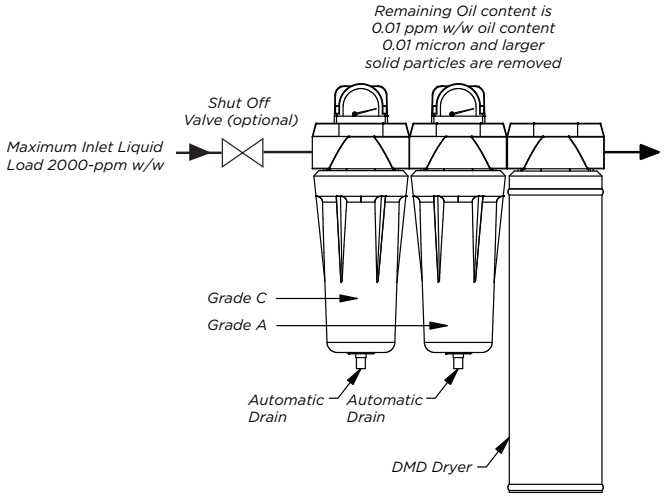

Figure 2.1B

2.2 Pre-Installation

1. Membrane dryers can be used with oil lubricated, water lubricated or non-lubricated compressors.
2. Membrane dryers can be installed indoors or outdoors.
3. Always install a drainable drip leg prior to the inlet filtration to the dryer. This helps prevent the accumulation of water at low points that could overwhelm the water handling capability of the filter.
4. The inlet to the dryers should be as close as possible to the outlet of the filters. Long runs of piping and mounting the dryer inlet below the filter outlet may allow condensate to flow into the dryer and damage it.
5. Piping material between the pre-filtration outlet and membrane dryer inlet shall be non-corrosive. Type 304 or 316 stainless steel is the recommended piping material ahead of the membrane dryer inlet. Piping that is susceptible to rusting and corrosion (e.g. carbon steel) is prohibited and will void the warranty.
6. Before installing the dryer verify that:
   a) The maximum pressure that could be encountered is less than the dryer and filter rated pressure.
   b) The compressed air supply temperature and ambient temperature at the dryer will not exceed 150°F (66°C) or the filter temperature rating if this is lower.
   c) The dryer sweep air will not be obstructed.

7. Membrane dryers and any related Prefiltration equipment are designed to be mounted in a vertical position. In most cases, we do not recommend supporting the module with the process piping. We recommend piping supports be located on either side of, directly in front of, or behind the dryer and filters. Integral dryer support brackets are available from the manufacturer to simplify your installation.

   NOTE: It is IMPORTANT for maximum membrane life, that the appropriate filtration system be included with the membrane dryer. Proper prefiltration will ensure the effective removal of particulates, water, compressor lubricant oil, and other types of contaminants. This is best accomplished by the use of our optional integrated pre-filtration. Damage to the membrane dryer or dew point degradation may result if the Prefiltration is removed or relocated at a distance away from the module.

8. Consult your supplier or refer to your Filtration Manual for specific details.

2.3 Installation (Continuous Operation)

1. A typical membrane dryer installation is shown schematically in Figures 2.1A and 2.1B.
2. Prior to installing the dryer and filters, slowly open the compressed air line shut off valve and allow any accumulated water, oil, or particulates to blow out. Use extreme caution to prevent accidents and injuries during this operation.
3. If after blowing out the line, the compressed air is visibly contaminated with water, oil, or particulates, proper prefiltration, sized for the supply air flow and pressure, must be installed before the dryer to protect and prolong the dryer life. Prefilters are available from the factory. As referenced in Section 2.1.
4. Connect the compressed air supply to the filter and then to the dryer. The coalescing filter should be as close to the dryer as practical (less than one foot separation) (use connector kit) to prevent cooling of the air and condensation of water and oil between the coalescing filter and the dryer. A shut-off valve (ball or gate valve) the same size as the supply line should be installed before the filter and dryer so that the dryer and application can be isolated.
5. Connect the dry air outlet to the application.
6. The filter drains may discharge oil and water. Route the filter drain line to a suitable location in compliance with local regulations.
7. Multiple Dryers for Higher Capacities - Multiple dryers in parallel (see Figure 2.2) can be used to increase capacity beyond that available with a single dryer. All the dryers should be the same model. It is not necessary to provide any mechanism to balance flows between the dryers. Installing prefilters upstream is preferred (for pressure-drop balance and cost). Size prefilters for the combined flow. Figure 2.2 does not show valves that could be used to isolate one dryer; valves are not recommended, but if used, identical valves and configuration must be used for all dryers.

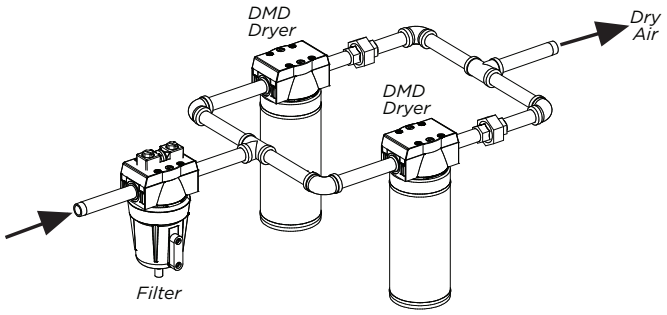

Figure 2.2

2.4 Start-up and Operation

1. Open the air supply to the dryer and check for any possible leaks. Maximum pressurization rate of 10 psi/sec.

   NOTE: Prefilters: The automatic drain may leak air until the pressure builds up to about 10 psig (0.7 kgf/cm^2) and will then seal except when discharging accumulated water and oil.

2. The filter differential pressure indicator(s) and drain(s) should be inspected on a regular schedule, preferably at least weekly. If the filter differential pressure indicator enters the red area on either the prefilter or coalescing filter, both of the filter element(s) must be changed. It is recommended that replacement filter elements be kept on hand as spares for fast change-outs to eliminate down time.

   NOTE: If coalescing filter life is consistently less than six months, a prefilter should be installed. If filter life remains less than six months with a prefilter installed, compressor maintenance or excessive line corrosion and/or contamination is indicated.

   NOTE: If any decrease is observed in the drain rate, the filter should be depressurized and the bowl removed. If the liquid level in the bowl is above the automatic drain float, the automatic drain is not operating correctly and should be replaced.

3. Filter element(s) should be replaced on a regular schedule (preferably every six months). When replacing the filter element, the filter bowl and automatic drain should be washed with warm soapy water to remove any accumulated oil.
4. To shutdown the dryer turn off the air supply and allow the pressure to decrease to atmospheric. Maximum depressurization of 10 psi/sec.

2.5 Intermittent or Cyclic Operation

When the dryer is operated in a cyclic or intermittent manner, the pressurization and depressurization rates must be 10 psi/sec (or less) to prevent damage to the membrane bundle.

See your membrane dryer distributor for details regarding installation.

3.0 Maintenance and Troubleshooting

The only routine maintenance required is replacement of the filter element(s) every six months and rebuilding or replacing the drain mechanism annually. There are no repairable components within the membrane dryer. Replacement of the membrane bundle can be performed if damaged or oil soaked.

To ensure performance of the membrane dryer and to obtain maximum compressor life, all compressor maintenance schedules recommended by the compressor manufacturer should be followed.

3.1 Filter Elements

If the filter differential pressure indicator shows red, filter element(s) must be changed. Continuing to operate for an extended period after the filter differential pressure indicator(s) have changed completely to red could result in low air pressure, high dew points; and eventually in failure of the filter element leading to contamination and damage of the dryer.

Filter element(s) should be changed at least every six months. See Section 2.1.

If the coalescing filter element life is consistently less than six months, a prefilter should be installed. If filter element life remains less than six months with a prefilter installed, compressor maintenance or excessive line corrosion or contamination is indicated.

Detailed instructions for element replacement are supplied with the filter(s) and replacement element(s).

3.2 Filter Automatic Drains

If a high water level is observed in a filter liquid level indicator, the automatic drain is not functioning correctly. The dryer should be shut down and the drain mechanism should be repaired or replaced before proceeding. Extended operation with malfunctioning automatic drain(s) could result in liquid water and oil entering the dryer, resulting in elevated dew points and damage to the dryer. See instructions supplied with the filter to replace the automatic drain.

3.3 High Dew Point

Before attempting to troubleshoot the membrane dryer verify that the dry air usage is at or below the design level. High air flow will result in high dew points.

The most likely cause of high dew point is low air supply pressure, due to either low pressure to the filters or high pressure drop across the filters. The latter will be indicated by the filter differential pressure indicator.

Another possible cause of high dew point is failure of the automatic drains as discussed in section 3.2.

3.4 Recovery From Water Flooding

Liquid water entering the membrane dryer will result in a fluctuating or elevated outlet dew point. Dryer performance will return to normal after the liquid water is eliminated

3.5 Membrane Bundle Replacement

For maximum performance and efficiency, the bundle should be replaced every 3 to 5 years of service or when the performance of the unit has dropped noticeably.

NOTE: If performance has dropped noticeably, investigate the possible cause before replacing the bundle.

⚠WARNING Handle membrane bundles carefully. Do not drop bundles and maintain cleanliness during installation.

⚠ CAUTION The DMD Series units are pressure-containing devices. Depressurize unit before servicing.

3.5.1 Procedure for Bundle Replacement

1. Isolate membrane unit (close inlet and outlet valves if installed) or shut off air supply.
2. Let the unit self-depressurize through the purge exhaust vent. If installed, slowly open a pressure bleed type valve to depressurize.
3. Bowl/Bundle Sub-Assembly Removal:
   a. For sizes 1 through 6 (1/8th turn): Push the bowl up and rotate the bowl 1/8th turn to the left. Then pull straight down on the bowl to remove from the mating head.
   b. For sizes 7 through 9 (Threaded): Unscrew the bowl from the mating head by hand or use of a strap wrench.
4. Bundle Removal Procedure:
   a. Remove hex purge plug fitting (offset fitting) from bottom of bowl.
   b. Remove bundle from bowl by placing a small round (blunt) object (approximately 1/2-inch diameter) into the hole and applying slight, steady pressure in a downward motion against a solid surface.
   c. Once the bundle is loose in the bowl, slide the bundle out of the bowl.

Replacement Bundles

Model Number	Replacement Bundle Part Number
DMD1-3	DMB1-II
DMD2-3	DMB2-II
DMD3-4	DMB3-II
DMD4-4	DMB4-II
DMD5-6	DMB5-II
DMD6-6	DMB6-II
DMD7-8	DMB7-II
DMD8-16	DMB8-II
DMD9-16	DMB9-II

5. Once the bundle has been removed, unscrew the threaded center fitting in the bottom of the bowl per one of the following:
   a. For sizes 1 through 7: 3/4-inch deep well socket
   b. For sizes 8 & 9: 1-3/8" regular length socket or box wrench
6. Remove the bowl o-ring and wave spring (on applicable sizes) and inspect. Also, inspect the o-rings of the center fittings used on sizes 1 through 7.
7. Clean the bowl with soap and water. Replace the bowl o-ring and wave spring (on applicable sizes). Lubricate bowl and center fitting o-rings.

   NOTE: Wave spring ends should be pointed down to prevent the wave spring from interfering with reassembly.
8. Replace the center fittings into the bottom of the bowl.
9. Examine the replacement bundle. Make sure that an o-ring is present in the plastic top cap of the assembly. Slightly lubricate the o-ring.
10. Bundle Replacement
    a. Slide the dryer cartridge into the bowl, aligning the center fitting with the center port of the cartridge. With the cartridge started onto the fitting, visually check the offset port on the bottom of the bowl to ensure the cartridge port is aligned properly. With the cartridge aligned properly, apply slight pressure to the top cap of the cartridge to seat it into the bowl.

       NOTE: DO NOT apply excessive force to the bundle during installation. This may cause damage to the bundle and effect performance.
    b. Visually inspect the offset purge hex plug o-ring for damage. If no damage is evident, lubricate o-ring.
    c. Ensure offset port of bowl is aligned with offset port of the bundle by looking through the hole on the bottom of the bowl. If not, use a blunt object to rotate bundle in bowl until aligned.
    d. Thread the offset purge plug into the bottom of the bowl. Wrench tighten fitting to a snug fit.
11. For sizes 1 through 7, lubricate the bowl threads prior to installation to the mating head.
12. Align the bowl/bundle subassembly with the mating head.
    a. For sizes 1 through 6, push the subassembly upwards onto the head and turn clockwise 1/8th of a turn, then pull subassembly downward until seated.
    b. For sizes 7 through 9, align subassembly and thread onto mating head.
13. Check that the unit has been properly assembled prior to pressurization.
14. Slowly pressurize the unit (5-7 psi/sec). Do not allow rapid pressurization to occur as this may damage the bundle.
15. Refer to the operating procedures detailed in the instruction manual of the dryer for proper operating procedures.

4.0 Sizing Tables

Table 1 Inlet and Outlet Flow Capacities (scfm) at 100 psig

	Inlet Temperature (1)		Outlet Pressure Dew Point					
			50°F (10°C)	40°F (4.4°C)	20°F (-6.7°C)	0°F (-17.8°C)	-20°F (-29°C)	-40°F (-40°C)
DMD1-3	40°F (4.4°C)	Inlet	-	-	-	1.48	1.07	0.81
		Outlet	-	-	-	1.29	0.88	0.62
	60°F (16°C)	Inlet	-	-	1.62	1.18	0.90	0.69
		Outlet	-	-	1.43	0.99	0.71	0.50
	80°F (27°C)	Inlet	-	1.76	1.29	0.99	0.77	0.60
		Outlet	-	1.57	1.10	0.80	0.58	0.41
	100°F (38°C)	Inlet	1.59	1.39	1.08	0.85	0.67	0.53
		Outlet	1.40	1.20	0.89	0.66	0.48	0.34
	120°F (49°C)	Inlet	1.31	1.17	0.94	0.75	0.60	0.48
		Outlet	1.12	0.98	0.75	0.56	0.41	0.29
	150°F (66°C)	Inlet	1.06	0.96	0.79	0.64	0.52	-
		Outlet	0.87	0.77	0.60	0.45	0.33	-
DMD2-3	40°F (4.4°C)	Inlet	-	-	-	4.80	3.56	2.75
		Outlet	-	-	-	4.20	2.96	2.15
	60°F (16°C)	Inlet	-	-	5.24	3.88	3.02	2.38
		Outlet	-	-	4.64	3.28	2.42	1.78
	80°F (27°C)	Inlet	-	5.67	4.23	3.30	2.63	2.10
		Outlet	-	5.07	3.63	2.70	2.03	1.50
	100°F (38°C)	Inlet	5.15	4.55	3.60	2.89	2.34	1.88
		Outlet	4.55	3.95	3.00	2.29	1.74	1.28
	120°F (49°C)	Inlet	4.29	3.88	3.16	2.58	2.10	1.70
		Outlet	3.69	3.28	2.56	1.98	1.50	1.10
	150°F (66°C)	Inlet	3.52	3.23	2.69	2.22	1.83	-
		Outlet	2.92	2.63	2.09	1.62	1.23	-
DMD3-4	40°F (4.4°C)	Inlet	-	-	-	10.04	7.21	5.38
		Outlet	-	-	-	8.72	5.89	4.06
	60°F (16°C)	Inlet	-	-	11.09	7.93	5.98	4.57
		Outlet	-	-	9.77	6.61	4.66	3.25
	80°F (27°C)	Inlet	-	12.07	8.73	6.62	5.11	3.97
		Outlet	-	10.75	7.41	5.30	3.79	2.65
	100°F (38°C)	Inlet	10.87	9.47	7.29	5.69	4.47	3.50
		Outlet	9.55	8.15	5.97	4.37	3.15	2.18
	120°F (49°C)	Inlet	8.88	7.92	6.29	4.99	3.96	3.13
		Outlet	7.56	6.60	4.97	3.67	2.64	1.81
	150°F (66°C)	Inlet	7.09	6.44	5.24	4.22	3.39	-
		Outlet	5.77	5.12	3.92	2.90	2.07	-

	Inlet Temperature (1)		Outlet Pressure Dew Point					
			50°F (10°C)	40°F (4.4°C)	20°F (-6.7°C)	0°F (-17.8°C)	-20°F (-29°C)	-40°F (-40°C)
DMD4-4	40°F (4.4°C)	Inlet	-	-	-	14.41	10.83	8.46
		Outlet	-	-	-	12.63	9.05	6.68
	60°F (16°C)	Inlet	-	-	15.72	11.75	9.24	7.36
		Outlet	-	-	13.94	9.97	7.46	5.58
	80°F (27°C)	Inlet	-	16.96	12.76	10.07	8.10	6.53
		Outlet	-	15.18	10.98	8.29	6.32	4.75
	100°F (38°C)	Inlet	15.45	13.69	10.94	8.86	7.22	5.87
		Outlet	13.67	11.91	9.16	7.08	5.44	4.09
	120°F (49°C)	Inlet	12.95	11.74	9.65	7.93	6.52	5.33
		Outlet	11.17	9.96	7.87	6.15	4.74	3.55
	150°F (66°C)	Inlet	10.68	9.84	8.26	6.88	5.71	-
		Outlet	8.90	8.06	6.48	5.10	3.93	-
DMD5-6	40°F (4.4°C)	Inlet	-	-	-	25.7	18.4	13.3
		Outlet	-	-	-	22.4	15.1	10.0
	60°F (16°C)	Inlet	-	-	28.4	20.3	15.0	11.0
		Outlet	-	-	25.1	17.0	11.7	7.7
	80°F (27°C)	Inlet	-	30.8	22.4	16.8	12.6	9.3
		Outlet	-	27.5	19.1	13.5	9.3	6.0
	100°F (38°C)	Inlet	27.8	24.3	18.6	14.2	10.7	7.9
		Outlet	24.5	21.0	15.3	10.9	7.4	4.6
	120°F (49°C)	Inlet	22.8	20.3	15.9	12.2	9.3	6.8
		Outlet	19.5	17.0	12.6	8.9	6.0	3.5
	150°F (66°C)	Inlet	18.1	16.3	12.9	10.0	7.6	-
		Outlet	14.8	13.0	9.6	6.7	4.3	-
DMD6-6	40°F (4.4°C)	Inlet	-	-	-	42.6	32.4	25.3
		Outlet	-	-	-	37.5	27.3	20.2
	60°F (16°C)	Inlet	-	-	46.2	35.1	27.7	21.9
		Outlet	-	-	41.1	30.0	22.6	16.8
	80°F (27°C)	Inlet	-	49.6	37.9	30.2	24.2	19.3
		Outlet	-	44.5	32.8	25.1	19.1	14.2
	100°F (38°C)	Inlet	45.5	40.5	32.7	26.6	21.5	17.1
		Outlet	40.4	35.4	27.6	21.5	16.4	12.0
	120°F (49°C)	Inlet	38.5	35.0	28.9	23.7	19.2	15.3
		Outlet	33.4	29.9	23.8	18.6	14.1	10.2
	150°F (66°C)	Inlet	32.0	29.5	24.7	20.4	16.6	-
		Outlet	26.9	24.4	19.6	15.3	11.5	-

	Inlet Temperature (1)		Outlet Pressure Dew Point					
			50°F (10°C)	40°F (4.4°C)	20°F (-6.7°C)	0°F (-17.8°C)	-20°F (-29°C)	-40°F (-40°C)
DMD7-8	40°F (4.4°C)	Inlet	-	-	-	71.1	48.6	33.7
		Outlet	-	-	-	61.5	39.0	24.1
	60°F (16°C)	Inlet	-	-	79.2	54.5	38.6	27.1
		Outlet	-	-	69.6	44.9	29.0	17.5
	80°F (27°C)	Inlet	-	86.7	60.8	43.8	31.5	22.2
		Outlet	-	77.1	51.2	34.2	21.9	12.6
	100°F (38°C)	Inlet	77.5	66.6	49.3	36.2	26.2	18.5
		Outlet	67.9	57.0	39.7	26.6	16.6	8.9
	120°F (49°C)	Inlet	62.0	54.4	41.2	30.5	22.1	15.6
		Outlet	52.4	44.8	31.6	20.9	12.5	6.0
	150°F (66°C)	Inlet	47.7	42.4	32.5	24.2	17.6	-
		Outlet	38.1	32.8	22.9	14.6	8.0	-
DMD8-16	40°F (4.4°C)	Inlet	-	-	-	113.0	79.8	57.6
		Outlet	-	-	-	98.3	65.1	42.9
	60°F (16°C)	Inlet	-	-	124.8	88.5	65.0	47.4
		Outlet	-	-	110.1	73.8	50.3	32.7
	80°F (27°C)	Inlet	-	135.9	97.8	72.7	54.2	39.8
		Outlet	-	121.2	83.1	58.0	39.5	25.1
	100°F (38°C)	Inlet	122.4	106.3	80.8	61.4	46.1	33.8
		Outlet	107.7	91.6	66.1	46.7	31.4	19.1
	120°F (49°C)	Inlet	99.5	88.4	68.8	52.7	39.7	29.2
		Outlet	84.8	73.7	54.1	38.0	25.0	14.5
	150°F (66°C)	Inlet	78.5	70.6	55.8	43.0	32.4	-
		Outlet	63.8	55.9	41.1	28.3	17.7	-
DMD9-16	40°F (4.4°C)	Inlet	-	-	-	146.5	104.8	76.6
		Outlet	-	-	-	127.7	86.0	57.8
	60°F (16°C)	Inlet	-	-	161.4	115.7	86.0	63.7
		Outlet	-	-	142.6	96.9	67.2	44.9
	80°F (27°C)	Inlet	-	175.3	127.4	95.8	72.4	53.8
		Outlet	-	156.5	108.6	77.0	53.6	35.0
	100°F (38°C)	Inlet	158.3	138.1	106.1	81.4	62.0	46.2
		Outlet	139.5	119.3	87.3	62.6	43.2	27.4
	120°F (49°C)	Inlet	129.6	115.5	90.9	70.4	53.8	40.1
		Outlet	110.8	96.7	72.1	51.6	35.0	21.3
	150°F (66°C)	Inlet	103.1	93.1	74.4	58.0	44.4	-
		Outlet	84.3	74.3	55.6	39.2	25.6	-

(1) Use inlet air temperature if the air entering the dryer has not been dried upstream (air is saturated). If air has been dried. (e.g. in a refrigerated dryer) use the dew point temperature of the inlet air.

(2) Flow capacities at 100 psig (7 kgf/cm²). For capacities at other pressures consult factory. Capacities are established in accordance with CAGI (Compressed Air and Gas Institute) Standard ADF 700: Membrane Compressed Air Dryers - Methods for Testing and Rating.

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Table 2 Inlet and Outlet Flow Capacities (m^3/min) @ 7 bar g (2)

	Inlet Temperature (1)		Outlet Pressure Dew Point					
			10°C (50°F)	3°C (37°F)	-10°C (14°F)	-20°C (-4°F)	-30°C (-22°F)	-40°C (-40°F)
DMD1-3	5°C (41°F)	Inlet	-	-	-	0.038	0.029	0.023
		Outlet	-	-	-	0.033	0.024	0.017
	20°C (68°F)	Inlet	-	-	0.038	0.029	0.023	0.018
		Outlet	-	-	0.032	0.024	0.018	0.013
	30°C (86°F)	Inlet	-	0.044	0.032	0.025	0.020	0.016
		Outlet	-	0.039	0.026	0.020	0.015	0.011
	40°C (104°F)	Inlet	0.043	0.037	0.028	0.022	0.018	0.015
		Outlet	0.038	0.031	0.022	0.017	0.013	0.009
	50°C (122°F)	Inlet	0.036	0.032	0.025	0.020	0.016	0.013
		Outlet	0.031	0.026	0.019	0.015	0.011	0.008
	66°C (150°F)	Inlet	0.030	0.027	0.021	0.017	0.014	-
		Outlet	0.024	0.021	0.015	0.012	0.009	-
DMD2-3	5°C (41°F)	Inlet	-	-	-	0.126	0.097	0.077
		Outlet	-	-	-	0.108	0.080	0.060
	20°C (68°F)	Inlet	-	-	0.123	0.098	0.079	0.064
		Outlet	-	-	0.106	0.080	0.062	0.047
	30°C (86°F)	Inlet	-	0.143	0.105	0.086	0.070	0.057
		Outlet	-	0.126	0.088	0.068	0.053	0.040
	40°C (104°F)	Inlet	0.140	0.121	0.093	0.077	0.063	0.052
		Outlet	0.123	0.103	0.076	0.059	0.046	0.035
	50°C (122°F)	Inlet	0.120	0.106	0.083	0.069	0.058	0.048
		Outlet	0.102	0.088	0.066	0.052	0.040	0.031
	66°C (150°F)	Inlet	0.099	0.089	0.072	0.061	0.051	-
		Outlet	0.082	0.072	0.055	0.043	0.034	-
DMD3-4	5°C (41°F)	Inlet	-	-	-	0.261	0.196	0.151
		Outlet	-	-	-	0.223	0.158	0.113
	20°C (68°F)	Inlet	-	-	0.256	0.197	0.154	0.122
		Outlet	-	-	0.218	0.158	0.117	0.084
	30°C (86°F)	Inlet	-	0.302	0.214	0.170	0.135	0.108
		Outlet	-	0.264	0.177	0.132	0.097	0.070
	40°C (104°F)	Inlet	0.294	0.249	0.186	0.149	0.120	0.097
		Outlet	0.256	0.212	0.148	0.111	0.082	0.059
	50°C (122°F)	Inlet	0.247	0.215	0.164	0.133	0.108	0.088
		Outlet	0.209	0.177	0.126	0.095	0.070	0.050
	66°C (150°F)	Inlet	0.201	0.178	0.139	0.114	0.094	-
		Outlet	0.163	0.140	0.101	0.076	0.056	-

	Inlet Temperature (1)		Outlet Pressure Dew Point					
			10°C (50°F)	3°C (37°F)	-10°C (14°F)	-20°C (-4°F)	-30°C (-22°F)	-40°C (-40°F)
DMD4-4	5°C (41°F)	Inlet	-	-	-	0.379	0.296	0.238
		Outlet	-	-	-	0.328	0.245	0.186
	20°C (68°F)	Inlet	-	-	0.372	0.297	0.242	0.198
		Outlet	-	-	0.321	0.246	0.191	0.147
	30°C (86°F)	Inlet	-	0.430	0.320	0.262	0.216	0.179
		Outlet	-	0.379	0.269	0.211	0.165	0.128
	40°C (104°F)	Inlet	0.420	0.364	0.283	0.235	0.196	0.163
		Outlet	0.369	0.313	0.232	0.184	0.145	0.112
	50°C (122°F)	Inlet	0.361	0.320	0.255	0.214	0.179	0.150
		Outlet	0.310	0.269	0.204	0.163	0.128	0.099
	66°C (150°F)	Inlet	0.302	0.273	0.221	0.188	0.159	-
		Outlet	0.251	0.222	0.170	0.137	0.107	-
DMD5-6	5°C (41°F)	Inlet	-	-	-	0.669	0.498	0.374
		Outlet	-	-	-	0.575	0.403	0.279
	20°C (68°F)	Inlet	-	-	0.656	0.500	0.383	0.291
		Outlet	-	-	0.561	0.405	0.289	0.196
	30°C (86°F)	Inlet	-	0.773	0.548	0.426	0.329	0.250
		Outlet	-	0.678	0.453	0.331	0.234	0.155
	40°C (104°F)	Inlet	0.753	0.639	0.470	0.369	0.286	0.217
		Outlet	0.658	0.545	0.375	0.274	0.191	0.123
	50°C (122°F)	Inlet	0.633	0.548	0.410	0.323	0.251	0.191
		Outlet	0.538	0.453	0.315	0.229	0.156	0.096
	66°C (150°F)	Inlet	0.511	0.448	0.340	0.269	0.209	-
		Outlet	0.416	0.354	0.245	0.174	0.114	-
DMD6-6	5°C (41°F)	Inlet	-	-	-	1.123	0.887	0.711
		Outlet	-	-	-	0.976	0.740	0.565
	20°C (68°F)	Inlet	-	-	1.104	0.889	0.725	0.588
		Outlet	-	-	0.958	0.743	0.579	0.442
	30°C (86°F)	Inlet	-	1.266	0.955	0.786	0.646	0.526
		Outlet	-	1.120	0.809	0.639	0.500	0.379
	40°C (104°F)	Inlet	1.238	1.082	0.847	0.704	0.581	0.474
		Outlet	1.092	0.935	0.701	0.558	0.435	0.327
	50°C (122°F)	Inlet	1.073	0.956	0.763	0.638	0.527	0.430
		Outlet	0.927	0.810	0.617	0.491	0.381	0.284
	66°C (150°F)	Inlet	0.905	0.817	0.661	0.555	0.459	-
		Outlet	0.759	0.671	0.515	0.409	0.313	-

	Inlet Temperature (1)		Outlet Pressure Dew Point					
			10°C (50°F)	3°C (37°F)	-10°C (14°F)	-20°C (-4°F)	-30°C (-22°F)	-40°C (-40°F)
DMD7-8	5°C (41°F)	Inlet	-	-	-	1.830	1.310	0.943
		Outlet	-	-	-	1.555	1.035	0.667
	20°C (68°F)	Inlet	-	-	1.789	1.315	0.971	0.705
		Outlet	-	-	1.513	1.040	0.696	0.430
	30°C (86°F)	Inlet	-	2.149	1.450	1.095	0.814	0.593
		Outlet	-	1.874	1.185	0.820	0.539	0.317
	40°C (104°F)	Inlet	2.087	1.739	1.226	0.928	0.692	0.504
		Outlet	1.812	1.464	0.951	0.653	0.417	0.229
	50°C (122°F)	Inlet	1.719	1.461	1.049	0.798	0.596	0.434
		Outlet	1.444	1.186	0.773	0.523	0.320	0.159
	66°C (150°F)	Inlet	1.349	1.162	0.844	0.644	0.481	-
		Outlet	1.074	0.887	0.569	0.369	0.206	-
DMD8-16	5°C (41°F)	Inlet	-	-	-	2.93	2.16	1.61
		Outlet	-	-	-	2.51	1.74	1.19
	20°C (68°F)	Inlet	-	-	2.87	2.17	1.66	1.25
		Outlet	-	-	2.45	1.75	1.23	0.83
	30°C (86°F)	Inlet	-	3.40	2.38	1.84	1.42	1.07
		Outlet	-	2.98	1.96	1.42	0.99	0.65
	40°C (104°F)	Inlet	3.31	2.80	2.04	1.59	1.23	0.93
		Outlet	2.88	2.37	1.62	1.17	0.81	0.51
	50°C (122°F)	Inlet	2.77	2.39	1.77	1.39	1.08	0.81
		Outlet	2.34	1.96	1.35	0.97	0.65	0.39
	66°C (150°F)	Inlet	2.22	1.94	1.46	1.15	0.89	-
		Outlet	1.80	1.52	1.04	0.73	0.47	-
DMD9-16	5°C (41°F)	Inlet	-	-	-	3.81	2.84	2.15
		Outlet	-	-	-	3.27	2.31	1.61
	20°C (68°F)	Inlet	-	-	3.73	2.85	2.20	1.68
		Outlet	-	-	3.19	2.32	1.66	114
	30°C (86°F)	Inlet	-	4.40	3.12	2.44	1.90	1.45
		Outlet	-	3.86	2.58	1.90	1.36	0.91
	40°C (104°F)	Inlet	4.28	3.64	2.69	2.12	1.66	1.27
		Outlet	3.74	3.10	2.15	1.58	1.12	0.73
	50°C (122°F)	Inlet	3.60	3.13	2.35	1.87	1.46	1.12
		Outlet	3.07	2.59	1.81	1.33	0.92	0.58
	66°C (150°F)	Inlet	2.92	2.57	1.96	1.56	1.22	-
		Outlet	2.38	2.03	1.42	1.02	0.68	-

(1) Use inlet air temperature if the air entering the dryer has not been dried upstream (air is saturated). If air has been dried. (e.g. in a refrigerated dryer) use the dew point temperature of the inlet air.

(2) Flow capacities at 100 psig (7 kgf/cm²). For capacities at other pressures consult factory. Capacities are established in accordance with CAGI (Compressed Air and Gas Institute) Standard ADF 700: Membrane Compressed Air Dryers - Methods for Testing and Rating.

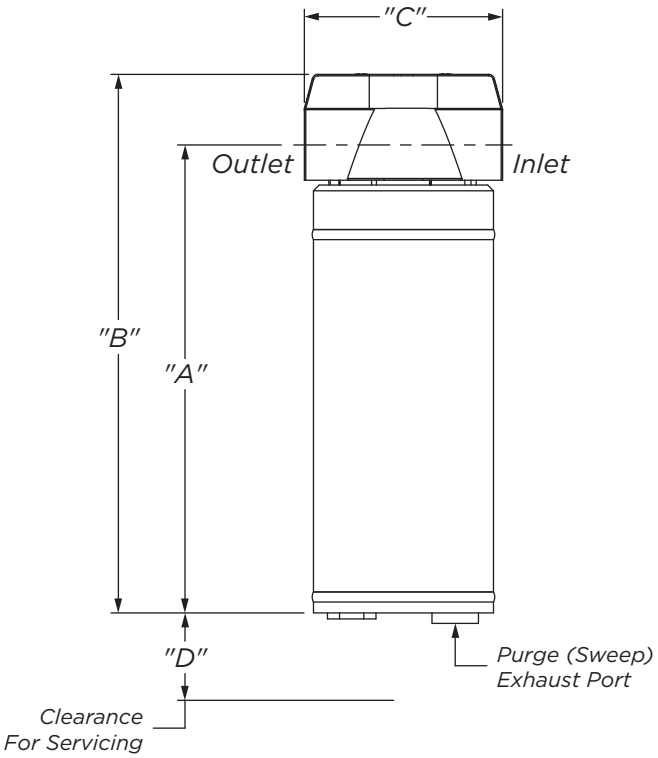
5.0 Dimensions and Weights

Table 3 Physical Description

Model	Dimensions & Connections in					Weight lb	Maximum Working Pressure psig	Maximum Operating Temp. °F
	A	B	C	D	Inlet / Outlet*			
1	10	11	4	3	3/8"	5	200	150
2	14	15	4	3	3/8"	6	200	150
3	18	19	4	3	1/2"	7	200	150
4	26	27	4	3	1/2"	8	200	150
5	19	20	5	3	3/4"	11	200	150
6	26	27	5	3	3/4"	14	200	150
7	28	29	6	4	1"	17	200	150
8	32	35	6	4	1"	35	200	150
9	39	41	6	4	1"	40	200	150

NOTE: Dimensions and Weights are for reference only. Request certified drawings for construction purposes.

* *NPT or BSP thread*
Maximum Use Temperature: 150°F (65°C)
Maximum Use Pressure: 200 psig (13.8 bar)
Minimum Use Pressure: 60 psig (4 bar)



6.0 Maintenance Schedule

	Service Performed	Date	By
Installation			
6 Month Maintenance			
12 Month Maintenance			
18 Month Maintenance			
24 Month Maintenance			
30 Month Maintenance			
36 Month Maintenance			

Warranty and Conditions of Sale

The manufacturer warrants the product manufactured by it, when properly installed, operated, applied, and maintained in accordance with procedures and recommendations outlined in manufacturer's instruction manuals, to be free from defects in material or workmanship for a period of one (1) year from the date of shipment to the buyer from the factory provided such defect is discovered and brought to the manufacturer's attention within the aforesaid warranty period.

The manufacturer will repair or replace any product or part determined to be defective by the manufacturer within the warranty period, provided such defect occurred in normal service and not as a result of misuse, abuse, neglect or accident. Normal maintenance items requiring routine replacement are not warranted. The warranty covers parts and labor for the warranty period unless otherwise specified. Repair or replacement shall be made at the factory or the installation site, at the sole option of the manufacturer. Any service performed on the product by anyone other than the manufacturer must first be authorized by the manufacturer.

Unauthorized service and use of unauthorized or pirated parts voids the warranty and any resulting charge or subsequent claim will not be paid. Products repaired or replaced under warranty shall be warranted for the unexpired portion of the warranty applying to the original product.

The foregoing is the exclusive remedy of any buyer of the manufacturer's product. The maximum damages liability of the manufacturer is the original purchase price of the product or part.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL, OR STATUTORY, AND IS EXPRESSED IN LIEU OF THE IMPLIED WARRANTY OF MERCHANTABILITY AND THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. THE MANUFACTURER SHALL NOT BE LIABLE FOR LOSS OR DAMAGE BY REASON OF STRICT LIABILITY IN TORT OR ITS NEGLIGENCE IN WHATEVER MANNER INCLUDING DESIGN, MANUFACTURE OR INSPECTION OF THE EQUIPMENT OR ITS FAILURE TO DISCOVER, REPORT, REPAIR, OR MODIFY LATENT DEFECTS INHERENT THEREIN.

THE MANUFACTURER, HIS REPRESENTATIVE OR DISTRIBUTOR SHALL NOT BE LIABLE FOR LOSS OF USE OF THE PRODUCT OR OTHER INCIDENTAL OR CONSEQUENTIAL COSTS, EXPENSES, OR DAMAGES INCURRED BY THE BUYER, WHETHER ARISING FROM BREACH OF WARRANTY, NEGLIGENCE OR STRICT LIABILITY IN TORT.

The manufacturer does not warrant any product, part, material, component, or accessory manufactured by others and sold or supplied in connection with the sale of manufacturer's products.

3 Year Warranty

The standard one year warranty is extended to three years when the dryer is installed with an optional prefilter package. To keep the warranty in effect, elements must be replaced on six month intervals and the drain mechanism yearly.

AUTHORIZATION FROM THE SERVICE DEPARTMENT IS NECESSARY BEFORE MATERIAL IS RETURNED TO THE FACTORY OR IN-WARRANTY REPAIRS ARE MADE.

SERVICE DEPARTMENT : (724) 746-1100

DMD Series

Membrane Compressed Air Dryer

Models:
DMD1-3, DMD2-3, DMD3-4, DMD4-4, DMD5-6, DMD6-6, DMD7-8, DMD8-16, DMD9-16

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Improvements and research are continuous at Deltech.
Specifications may change without notice.

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