

AIR TAK

Compressed Air System Products

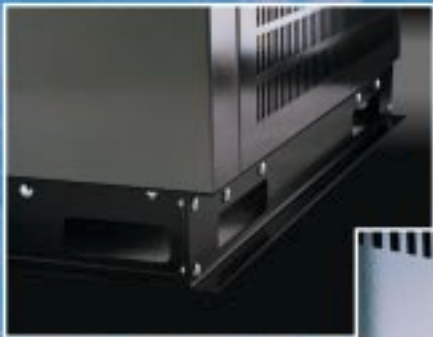
D Series **Refrigerated Air Dryers**



**Compressed Air System Products That
Save Energy & Improve Operations**

Refrigerated Air Dryers

D series Refrigerated Air Dryers



Air/Tak dryers feature other unique structural design elements. Lifting slots provide for easier forklift accessibility from all sides; access panels feature quick turn fasteners and handles.

Exterior-Mounted Solenoid Drain Valves for Easy Maintenance



Air/Tak dryers feature solenoid drain valves that are mounted outside the cabinet and prewired for easy access and serviceability. This also eliminates the time and expense of running a 115 volt outlet.

High Performance Dryers Designed for a Wide Range of Conditions

Air/Tak refrigerated dryers, manufactured to strict quality standards, deliver high-quality results while conserving energy. A 38°F outlet pressure dew point provides the clean, dry air necessary to operate your equipment. Choose from a wide range of models, rated for capacities from 320 to 7500 SCFM, with air-cooled or water-cooled units to meet your installation requirements for operating pressures and temperatures.

Dual-Action Heat Exchangers Reduce Costs

Air/Tak D Series dryers are designed with innovative heat exchangers that unify the cooling and moisture separation processes. Their shell and aluminum finned copper tube design incorporates both primary and secondary heat transfer surfaces. This permits the use of smaller heat exchangers than in traditional shell and tube designs.

Minimal Pressure Drop Conserves Energy

An additional benefit of the D Series dryers' heat exchanger design is very low pressure drop compared to other heat exchanger designs.

Other dryers still depend on mechanical separators and cold coalescers to spin out water aerosols. They can't maintain efficiency with fluctuating flow rates that are typical in most plant air systems. The result: unnecessary and expensive pressure drops.

The **Air/Tak** dryer, however, conserves air power for downstream use. The pressure drop through **Air/Tak** dryers averages up to 50% less than other manufacturers. In fact, **Air/Tak** dryers produce savings at all flows.

Convenient and Easy To Install

Installing an **Air/Tak** dryer in your system is simple – just connect to plant air piping and electrical service. The air inlet and outlet connections are located in the same plane for ease of piping. Electrical connections are accessible at the junction box.

The dryer may be installed indoors in any location where the surrounding temperatures are between 50°F and 100°F. If the dryer needs to be located outdoors, a weatherproof shelter must be provided.

A water-cooled condenser is recommended for atmospheres where above-average concentrations of particulates – such as cement dust, lint or foundry sand – are present in the air. It is also recommended when the ambient temperatures exceed 110°F.

D series

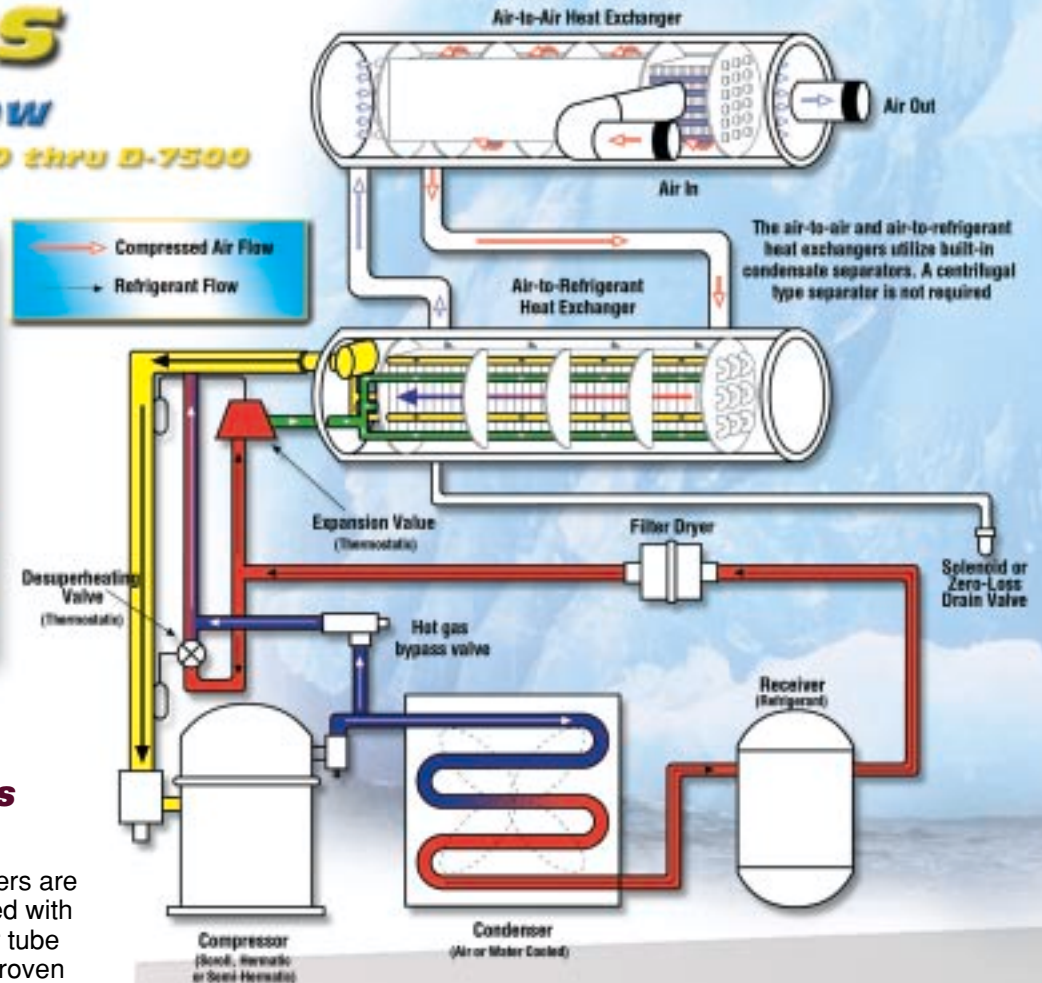
Typical Airflow Diagram D-320 thru D-7500



Refrigerant controls on models D-1250 & larger

5-Year Warranty Ensures Lasting Satisfaction

Air/Tak D Series heat exchangers are welded carbon steel vessels fitted with durable aluminum finned copper tube heat transfer coils. These field-proven heat exchangers are backed by a 5-year pro-rated warranty.



Refrigerant Circuit

- ▶ **Compressor** . . . pumps hot, high-pressure gas to the condenser.
- ▶ **Condenser** . . . cools gas to a high-pressure liquid using atmospheric air (or water).
- ▶ **Expansion valve** . . . throttles the high-pressure liquid to a low-pressure liquid before it enters the tube side of the air-to-refrigerant heat exchanger.
- ▶ **Evaporator (heat exchanger)** . . . cold refrigerant in the finned tubes absorbs heat from the compressed air in the shell side. The refrigerant changes from a liquid to a gas and returns to the compressor.
- ▶ **Pilot-operated hot gas bypass valve** . . . adjusts refrigerant temperature and pressure in response to changing demand for cooling.
- ▶ **Desuperheating valve** . . . provides liquid refrigerant to maintain suction temperature (on models D-1250 & larger).

Compressed Air Circuit

- ▶ **Initial cooling** . . . Hot, wet compressed air enters the shell of the air-to-air heat exchanger. This air is cooled as it circulates around the aluminum finned copper tubes that contain cool air from the air-to-refrigerant heat exchanger.
- ▶ **Final cooling** . . . This pre-cooled compressed air then enters the shell of the air-to-refrigerant heat exchanger air. It circulates around the aluminum finned copper tubes that contain cool liquid refrigerant. The compressed air temperature is again reduced as additional heat is absorbed by the cold refrigerant in the copper tubes.
- ▶ **Moisture separation** . . . Moisture condensed during cooling is separated from the compressed air and is discharged through the drain valves.
- ▶ **Reheating** . . . Cool, dry air returns through the tube side of the air-to-air exchanger for reheating. This prevents sweating on distribution piping.

Selecting the Right Model

REFRIGERATED AIR DRYERS

Specifications:					Dimensions: (Inches)					Electrical Data		
Model No.	Comp. HP	Rated Capacity ² (SCFM)		Pressure Drop ³ (PSID)	Inlet & Outlet Conn. (NPT)	Width	Depth	Height	Weight (lbs.)	Main Power	Control Power	Run Load Amps (RLA)
		Pressure Dew Point										
		38°F	50°F									
D-320-A	2	320	385	1.1	2	30	43	54 1/2	675	230-60-3 460-60-3	230-60-1 115-60-1	8.7 4.2
D-400-A	2 1/4	400	480	1.5	2	30	43	54 1/2	700	230-60-3 460-60-3	230-60-1 115-60-1	10.6 4.5
D-400-W	2 1/4	435	520	1.8	2	30	43	54 1/2	700	460-60-3	115-60-1	4.2
D-500-A	3	500	600	2.5	2	30	43	54 1/2	725	230-60-3 460-60-3	230-60-1 115-60-1	14.3 6.7
D-500-W	3	550	660	3.0	2	30	43	54 1/2	725	460-60-3	115-60-1	6.7
D-600-A	3 1/4	600	720	1.0	3	33	53 1/2	69 7/8	1250	230-60-3 460-60-3	230-60-1 115-60-1	15.3 7.7
D-600-W	3 1/4	630	755	1.1	3	33	53 1/2	69 7/8	1250	460-60-3	115-60-1	6.7
D-800-A	4	800	960	2.0	3	33	53 1/2	69 7/8	1300	230-60-3 460-60-3	230-60-1 115-60-1	17.9 8.6
D-800-W	4	850	1020	2.3	3	33	53 1/2	69 7/8	1300	460-60-3	115-60-1	8.6
D-1000-A	5	1000	1200	3.0	3	33	53 1/2	69 7/8	1400	230-60-3 460-60-3	230-60-1 115-60-1	21.4 9.6
D-1000-W	5	1050	1260	3.3	3	33	53 1/2	69 7/8	1400	460-60-3	115-60-1	9.6
D-1250-A	7 1/2	1250	1500	1.6	4	39	65	76 7/8	1925	460-60-3	115-60-1	15.8
D-1250-W	7 1/2	1250	1500	1.6	4	39	65	76 7/8	1925	460-60-3	115-60-1	14.1
D-1500-A	9	1500	1800	2.0	4	39	65	76 7/8	1950	460-60-3	115-60-1	19.3
D-1750-A	10	1750	2100	2.8	4	39	65	76 7/8	2075	460-60-3	115-60-1	21.1
D-1750-W	9	1750	2100	2.8	4	39	65	76 7/8	2075	460-60-3	115-60-1	14.9
D-2000-A	12	2000	2400	3.5	4	39	65	76 7/8	2125	460-60-3	115-60-1	27.6
D-2250-W	10	2250	2700	4.4	4	39	65	76 7/8	2250	460-60-3	115-60-1	15.8

Specifications:					Dimensions: (Inches)					Electrical Data		
Model No.	Comp. HP	Rated Capacity ² (SCFM)		Pressure Drop ³ (PSID)	Inlet & Outlet Conn. (150 lb. flg.)	Width _s	Depth _s	Height _s	Weight (lbs.) Air/Water	Main Power	Control Power	Run Load Amps (RLA) Air/Water
		Pressure Dew Point										
		38°F	50°F									
D-2500-A/W	14	2500	3000	1.5	6	87 1/2	70 1/2	103	3100/2800	460-60-3	115-60-1	28.6/22.6
D-3200-A/W	15	3200	3840	2.5	6	87 1/2	70 1/2	103	3200/2900	460-60-3	115-60-1	30.1/24.1
D-4000-A/W	18	4000	4800	2.8	8	87 1/2	67 3/4	106	3300/3000	460-60-3	115-60-1	35.8/29.8
D-5000-A/W	23	5000	6000	4.2	8	87 1/2	67 3/4	106	3600/3300	460-60-3	115-60-1	43.5/37.5
D-6250-A/W	30	6250	7500	4.5	8	104	80 3/4	108	4400/4100	460-60-3	115-60-1	54.1/48.1
D-7500-A/W	40	7500	9000	6.5	8	104	80 3/4	108	4500/4200	460-60-3	115-60-1	70.0/64.0

Notes: 1) Specifications and Dimensions subject to change without notice.

2) Capacities are based on 100°F Inlet Air and Ambient Air Temperatures, and 100 PSIG Inlet Air Pressure.

3) Pressure Drop based on Rated Capacities for 38°F Pressure Dew Point.

4) Consult factory for other Main Power Applications.

5) Dimensions are for Air-Cooled Models only. Consult factory for dimensions on Water-Cooled or Air-Cooled Remote Condenser Models.

Using the specifications columns, read down the column to the nearest SCFM capacity which exceeds the required flow. "A" in the dryer model number indicates air-cooled units, and "W" indicates water-cooled. The number indicates rated capacity.

Rated capacities are based on ... 100°F inlet air, 100°F ambient air and 100 psig. These standard conditions for rated capacities comply with ANSI/CAGI ADF 100, *Refrigerated Compressed Air Dryers - Methods for Testing and Rating*.

For inlet air temperatures, apply the following correction factors to rated capacity:

- 90°F inlet air 1.20
- 100°F inlet air 1.00
- 110°F inlet air 0.80
- 120°F inlet air 0.70

For ambient air temperatures, apply the following correction factors to rated capacity:

- 80°F ambient air 1.10
- 90°F ambient air 1.05
- 100°F ambient air 1.00
- 110°F ambient air 0.95

For inlet air pressures, apply the following correction factors to rated capacity:

- 50 PSIG 0.85
- 100 PSIG 1.00
- 125 PSIG 1.05
- 150 PSIG 1.10

Water-cooled capacities are rated on 85°F inlet water. For 80°F water, apply a factor of 1.03; for 90°F water, apply 0.97.

Standard Equipment:

- Power On Light
- High Suction Temperature Light
- On/Off Switch
- Compressor Motor Thermal Overload Protection
- Crankcase Heater
- High/Low Refrigerant Pressure Control
- Low Ambient Fan Control
- Air Inlet Temperature Gauge
- Refrigerant Analyzer Gauge (suction pressure and temperature)
- Air Outlet Pressure Gauge
- Water Regulating Valve (D-400 through 7500-W)
- Solenoid Drain Valve (D-320 through 2250)
- Zero Air Loss Drain Valve (D-2500 through 7500)
- Compressor Run Light (D-2500 through 7500)

Optional Equipment:

A large selection of optional equipment is also available as shown in the partial list below. If other equipment is required, contact the factory for complete information.

- Air Inlet Pressure, Air Outlet Temperature and Refrigerant Head Press Gauges
- Low or High Refrigerant Pressure Alarm Light
- NEMA 4 and NEMA 12 Wiring (excludes compressor and fan motors)
- Alarm Bell (various functions)
- Hour Meter
- Compressor Run Light (D-320 through 2250)
- Ambient Air Filter (D-320 through 2000)
- Remote Condenser (D-1250 through 7500)
- Zero Air Loss Drain Valve (D-320 through 2250)
- Shell and Aluminum Finned Cupro-Nickel Tube Heat Exchangers

Other Specifications D Series

- Maximum working pressure 150 psig
- Drain connections 1/2" NPT(m)
- Refrigerant R-22

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