SPXFLOW

Blower Purge Desiccant Compressed Air Dryers

ZP SERIES 500 - 4,300 SCFM

Deltech®

Through the Deltech brand, SPX FLOW addresses the global compressed air market, by enabling the effective removal of water, dirt, oil and particulates. Deltech dehydration, filtering and purification hardware span the full spectrum, from small standard units through to large-scale industrial systems. Whatever their size, Deltech systems allow customers to access compressed air reserves that are much cleaner and safer to use that are custom fit to their particular production line.

Among a wealth of different highly-optimized air treatment solutions, Deltech supplies compressed air filtration systems, refrigerated air dryers (using innovative phase change materials), desiccant air dryers and continuous-duty breathing air purifiers (to protect the workforce from any threat of potential respiratory problems). All of these attain industry-leading performance benchmarks and support the long-term, trouble-free operation. At the same time, Deltech industrial air systems engineering teams design technology with minimal ecological and electrical impact.

Based in Charlotte, North Carolina, SPX FLOW is a leading global supplier of highly engineered flow components, process equipment and turn-key systems, along with the related aftermarket parts and services, into the food and beverage, power and energy and industrial end markets. SPX FLOW has more than $2 billion in annual revenues and approximately 8,000 employees with operations in over 35 countries and sales in over 150 countries around the world. To learn more about SPX FLOW, please visit our website at www.spxflow.com

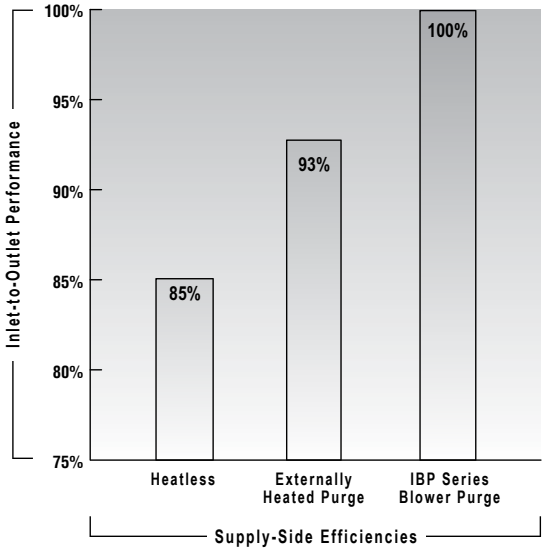
ZP Series Dryers

PRODUCE 100% EFFICIENT AIR SYSTEMS

ZP Series dryers improve air system efficiency by the use of a dedicated axial blower, instead of a percentage of dehydrated purge air, to regenerate the off-line desiccant tower. ISO 8573.1 Class 2 (-40°F/-40°C) dew point performance is guaranteed.

REDUCE ENERGY CONSUMPTION

As the air compressor is the most costly system component to purchase, and it uses more electrical energy than the rest of system combined, it is wise to ensure that the smallest appropriately sized air compressor is installed. ZP Series dryers are 100% efficient at delivering full supply-side compressor capacity. Therefore, users benefit from the ability to purchase a less expensive air compressor and a 20% reduction in compressor operating costs.

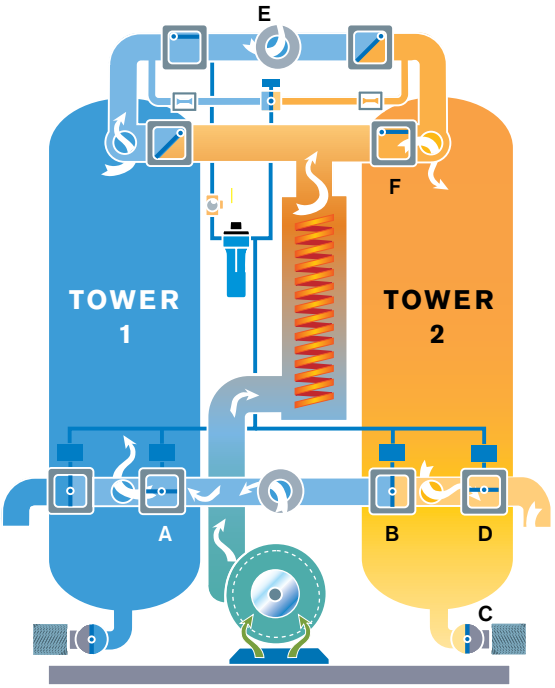


ELIMINATE COSTLY COMPRESSED AIR LOSS

Global competition, spiraling energy costs, and the challenge to “do more, with less” require manufacturers to closely examine operating costs. Compressed air generation tends to be the most costly utility within a facility. Eliminate air loss to align supply-side equipment with demand-side requirements to optimize your air system.

How It Works

Filtered compressed air enters on-line desiccant-filled, drying Tower 1 through valve (A). Up-flow drying enables the desiccant to strip moisture from the air stream. Clean, dry compressed air exits through (E) to feed the air system. Tower 2 (shown in regeneration mode) with valve (B) closed, depressurizes to atmosphere through muffler (C). Valves (D & F) open and the heater turns on. The high-efficiency blower draws ambient air and feeds it through the heater. The ambient air stream passes through valve (F) and flows downward through the moist desiccant in Tower 2, collecting water vapor before exiting valve (D). Once the desiccant is fully desorbed, the heater turns off. Valve (D) closes and Tower 2 is repressurized. At a fixed time interval, valve (B) will open and Tower 2 will be placed on-line to dry the airstream and valve (A) will close. Operations will switch and Tower 1 will be regenerated.



DEMAND-SIDE IMPACT ON SUPPLY-SIDE DRYER TYPES

PLANT AIR DEMAND scfm	DRYER TYPES Efficiency	AIR VOLUME REQUIRED TO MEET DEMAND scfm	AIR COMPRESSOR NEEDED TO MEET AIR VOLUME hp	AIR COMPRESSOR NEEDED TO MEET AIR VOLUME scfm	COMPRESSED PURGE AIR PENALTY* dollars	PREFERRED SUPPLY-SIDE SOLUTION
1,000	Blower Purge (100%)	1,000	200	1,000	$0	Yes
1,000	Heated Purge (93%)	1,075	250	1,250	$11,436	No
1,000	Heatless (85%)	1,176	250	1,250	$24,506	No

* Assumes 5 scfm/HP, 8760 hours of operation per year, 10 cents per kW/h

AIR QUALITY CLASS	SOLID PARTICLES MAXIMUM NUMBER OF PARTICLES PER M³ 0.10 - 0.5 micron	0.5 - 1.0 micron	1.0 - 5.0 micron	WATER VAPOR PRESSURE DEW POINT °C	°F	OIL TOTAL OIL CONCENTRATION: AEROSOL, LIQUID & VAPOR mg / m³	ppm w/w
0	**As specified by the equipment user or supplier and more stringent than class 1**						
1	≤ 100	≤ 1	≤ 0	≤ -70	≤ -94	≤ 0.01	0.008
2	≤ 100,000	≤ 1,000	≤ 10	≤ -40	≤ -40	≤ 0.1	0.08
3	-	≤ 10,000	≤ 500	≤ -20	≤ -4	≤ 1	0.8
4	-	-	≤ 1,000	≤ +3	≤ +38	≤ 5	4
5	-	-	≤ 20,000	≤ +7	≤ +45	> 5	4
6				≤ +10	≤ +50	-	-

ZP Series – Key Product Features

Soft-seated check valves for tight shut-off and durability

Towers filled with high-grade activated alumina to deliver superior performance

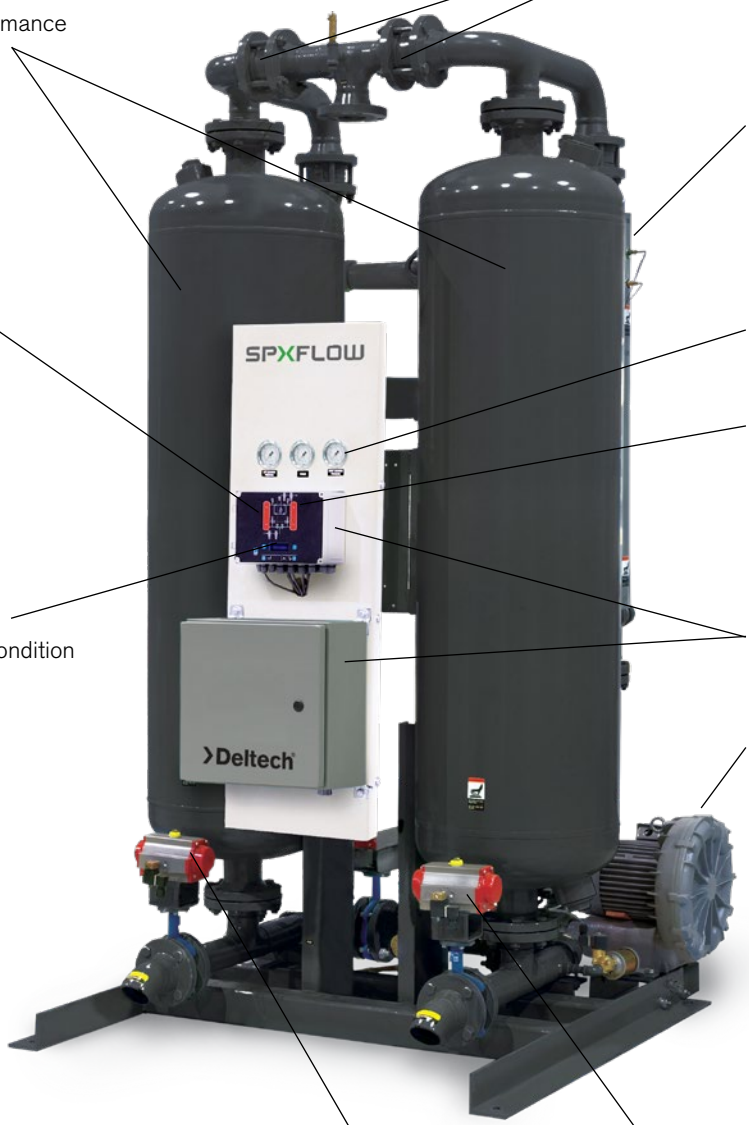
Low-watt density heater saves energy and prevents premature desiccant aging

Standard Controls

- Tower Status
- Service Reminder
- Heater On
- Heater Temperature
- Desiccant Bed Temperature
- Failure to Switch
- RS 232

High quality pressure gauges display left tower, right tower and purge pressure

Function indicator LEDs for easy monitoring



Easy-view vacuum fluorescent text display is visible under any condition

NEMA 4 construction

Quiet, energy efficient, high-capacity blowers

Premium quality inlet switching/purge exhaust butterfly valves for long life on 3" and larger. (High-performance pneumatic angle-seated valves for smaller sizes.)

**Model Shown with Optional Features*

Controller Feature List

	Controller Configuration		
	Standard	Option A	Option B
Pressure Dew Point			
ISO Class 2 -40°F (-40°C)	✓	✓	✓
EMS Control			
Automatic Energy Savings	—	✓	✓
Vacuum Fluorescent Text			
Digital Dew Point Monitoring	—	—	✓
High Humidity Alarm	—	✓	✓
2 Line, 16 Characters (high-visibility in darkness or sunlight)	✓	✓	✓
Languages			
English, Spanish, French	✓	✓	✓
Power Recovery			
Automatic Restart after Power Loss	✓	✓	✓
Dry Contacts			
Remote Indication of Alarm	✓	✓	✓
Overlay w/Circuit Graphics & LED Indicators Alarm LEDs with Text Display			
Tower Status - (drying switchover heat, cool, etc.)	✓	✓	✓
Tower - Switchover, Failure (low heater temp/high heater temp)	✓	✓	✓
Sensor Over-range & Under-range	✓	✓	✓
Service Reminder	✓	✓	✓
Options			
Vessel Insulation	O	O	O
Mounted Pre- and Afterfilters	O	O	O

✓ - Standard O - Option

ISO Quality Classes

Air Quality Classes ISO 8573-1: 2001 (E)	Solid Particles			Water		Oil	
	Maximum number of particles per m^3			Vapor Pressure Dew Point		Total Oil Concentration: Aerosol, Liquid and Vapor	
	0.10 - 0.5 micron	0.5 - 1.0 micron	1.0 - 5.0 micron	°C	°F	mg / m^3	ppm $_{w/w}$
0	As specified by the equipment user or supplier and more stringent than class 1						
1	100	1	0	≤ -70	≤ -94	0.01	0.008
2	100,000	1,000	10	≤ -40	≤ -40	0.1	0.08
3	-	10,000	500	≤ -20	≤ -4	1	0.8
4	-	-	1,000	≤ +3	≤ 38	5	4
5	-	-	20,000	≤ +7	≤ 45	-	-
6				≤ +10	≤ 50		
				Liquid Water g/m^3			
7				C_w ≤ 0.5			
8				0.5 < C_w ≤ 5			
9				5 < C_w ≤ 10			

Standard filtration delivers ISO Quality Class:

- 3 Solids
- 4-5 Pressure Dew Point
- 5 Oil

Optional filtration provides ISO Quality Class:

- 3 Solids
- 4-5 Pressure Dew Point
- 1 Oil

Product Specifications

ENGINEERING DATA

MODEL	CAPACITY[1,2] SCFM	BLOWER KW	HEATER RATING KW	AVERAGE KW	DIMENSIONS INCHES H	W	D	APPROX WEIGHT LB	INLET/OUTLET CONNECTIONS IN	DF SERIES PREFILTER	DTA SERIES AFTERFILTER
ZP500	500	1.6	10	10.1	53	70	105	1,866	2" NPT	DF5-44-20-DG	DTA600
ZP600	600	2.5	12	12.7	55	71	108	2,111	2" NPT	DF5-44-20-DG	DTA600
ZP750	750	2.2	14	14.8	60	83	114	2,456	3" FLG	DF5-48-20-DG	DTA1200
ZP900	900	2.0	16	16.2	60	83	114	2,472	3" FLG	DF5-54-24-G	DTA1200
ZP1050	1050	2.8	19	19.2	64	84	113	2,981	3" FLG	DF5-56-24-G	DTA1200
ZP1300	1300	5.3	23	25.7	66	85	118	3,576	3" FLG	DF5-60-24-G	DTA1800
ZP1500	1500	7.5	28	32.8	80	93	116	5,359	3" FLG	DF5-60-24-G	DTA1800
ZP1800	1800	7.0	32	35.4	80	93	116	5,359	3" FLG	DF5-60-24-G	DTA1800
ZP2200	2200	5.6	39	41.9	85	104	124	8,018	4" FLG	DF5-64-4F-G	DTA2400
ZP2600	2600	10.3	45	50.7	85	104	124	8,123	4" FLG	DF5-68-4F-G	DTA3000
ZP3200	3200	2.8	53	52.5	97	117	121	9,333	6" FLG	DF5-72-6F-G	DTA4800
ZP3600	3600	4.0	58	59.4	97	117	121	9,833	6" FLG	DF5-72-6F-G	DTA4800
ZP4300	4300	4.4	70	70.4	105	130	124	12,350	6" FLG	DF5-72-6F-G	DTA4800

[1] @ 100 psig, 100°F -40°F Pressure Dewpoints

[2] Performance data per CAGI Standard ADF 200 for Dual–Tower Regenerative Desiccant Compressed Air Dryer. Rating conditions are 100°F (37.8°C) inlet 100 psig (6.9 bar) inlet pressure, 100% relative humidity, 100°F (37.8°C) ambient temperature.

Consult factory for sizing assistance and -100°F pressure dewpoint applications. Larger models available.

TABLE 1: PRESSURE

PRESSURE PSIG (kgf/cm²)	INLET TEMPERATURE °F (°C)						
	60 (15.6)	70 (21.1)	80 (26.7)	90 (32.2)	100 (37.8)	110 (43.3)	120 (48.9)
60 (4.2)	1.03	1.01	0.99	0.80	0.58	0.43	0.32
70 (4.9)	1.10	1.08	1.07	0.94	0.68	0.50	0.37
80 (5.6)	1.17	1.15	1.14	1.08	0.79	0.58	0.43
90 (6.3)	1.24	1.22	1.20	1.18	0.89	0.66	0.49
100 (7.0)	1.30	1.28	1.26	1.24	1.00	0.74	0.55
110 (7.7)	1.36	1.34	1.32	1.30	1.11	0.82	0.61
120 (8.4)	1.42	1.40	1.38	1.36	1.22	0.90	0.67
130 (9.1)	1.48	1.46	1.44	1.42	1.33	0.99	0.74
140 (9.8)	1.53	1.51	1.49	1.47	1.44	1.07	0.80
150 (10.6)	1.58	1.56	1.54	1.52	1.50	1.16	0.87

Inlet Flow

Inlet Flow (scfm) capacities shown in the Engineering Data table have been established at an inlet pressure of 100 psig (7kgf/cm²) and a saturated inlet temperature of 100°F (38°C). To determine maximum inlet flow at other conditions, multiply the inlet flow from the Engineering Data table by the multiplier from Table 1 that corresponds to your operating conditions.

Dew Point

Outlet pressure dew point at rated inlet conditions of 100 psig (7kgf/cm²) and 100°F (38°C) saturated. Dew point varies slightly at other conditions.

OPERATING CONDITIONS

ZP MODELS	MAX. WORKING PRESS.	MIN. OPERATING PRESS.	MAX. INLET AIR TEMP.	MIN. INLET AIR TEMP.	MAX. AMBIENT AIR TEMP.	Max. Ambient Air Temp.
500-4300	150 psig	60 psig	120°F	40°F	120°F	40°F

ZP Series

500 TO 4,300 SCFM

SPXFLOW

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