



HEATED PURGE DESICCANT COMPRESSED AIR DRYERS

HPD SERIES

DEDICATED TO EXCELLENCE

Since 1948, compressed air users around the world have relied on Hankison to provide innovative compressed air treatment solutions for critical applications.

Hankison maintains a long standing reputation for manufacturing products that deliver superior performance, time proven reliability and optimal energy savings.

Hankison today is the preferred choice for providing clean, dry compressed air for the most challenging industries.



HPD SERIES DRYERS

SLASH PURGE AIR ENERGY COSTS

Global demand for Air Quality Class 2 and our advanced Ambient Air Amplification (A3) Purge Technology™ enables Hankison to offer externally heated purge desiccant dryers with dew point performance guaranteed from 250 to 3,200 scfm (425 to 5,437 nm³/h).

STANDARD HPD SERIES DRYERS:

-4°F to -40°F (-20°C to -40°C) Pressure Dew Points

Designed for applications that were previously forced to accept a -40°F (-40°C) pressure dew point when simple protection against seasonal freezing is the issue. The standard design delivers ISO 8573.1 dew points between Class 2 and Class 3 automatically. Class 2 (-40°F/-40°C) dew points protect against freezing during low ambient conditions and Class 3 (-4°F/-20°C) dew points keep your air system bone dry during the heat of summer. Applications that require Class 2 (-40°F/-40°C) dew points year round simply need to select the Free-Air (FA) Supercharger option package.

ISO 8573.1 Quality Classes

Class	Solid Particles			Humidity & Liquid Water		Oil	
	Particle Size, d (micron)			Pressure Dew Point		Total concentration, Aerosol, Liquid, and Vapor	
	0.10 < d ≤ 0.5	0.5 < d ≤ 1.0	1.0 < d ≤ 5.0	°C	°F	mg / m ³	ppm w/w
0	As Specified			As Specified		As Specified	
1	100	1	0	≤ -70	≤ -94	≤ 0.01	≤ 0.008
2	100,000	1,000	10	≤ -40	≤ -40	≤ 0.1	≤ 0.08
3	Not Specified	10,000	500	≤ -20	≤ -4	≤ 1	≤ 0.8
4	Not Specified	Not Specified	1,000	≤ +3	≤ +38	≤ 5	≤ 4
5	Not Specified	Not Specified	20,000	≤ +7	≤ +45		
6				≤ +10	≤ +50		
				Liquid Water Content, Cw g/m ³			
7				Cw ≤ 0.5			
8				0.5 < Cw ≤ 5			
9				5 < Cw ≤ 10			

Per ISO 8573.1: 2001(E)



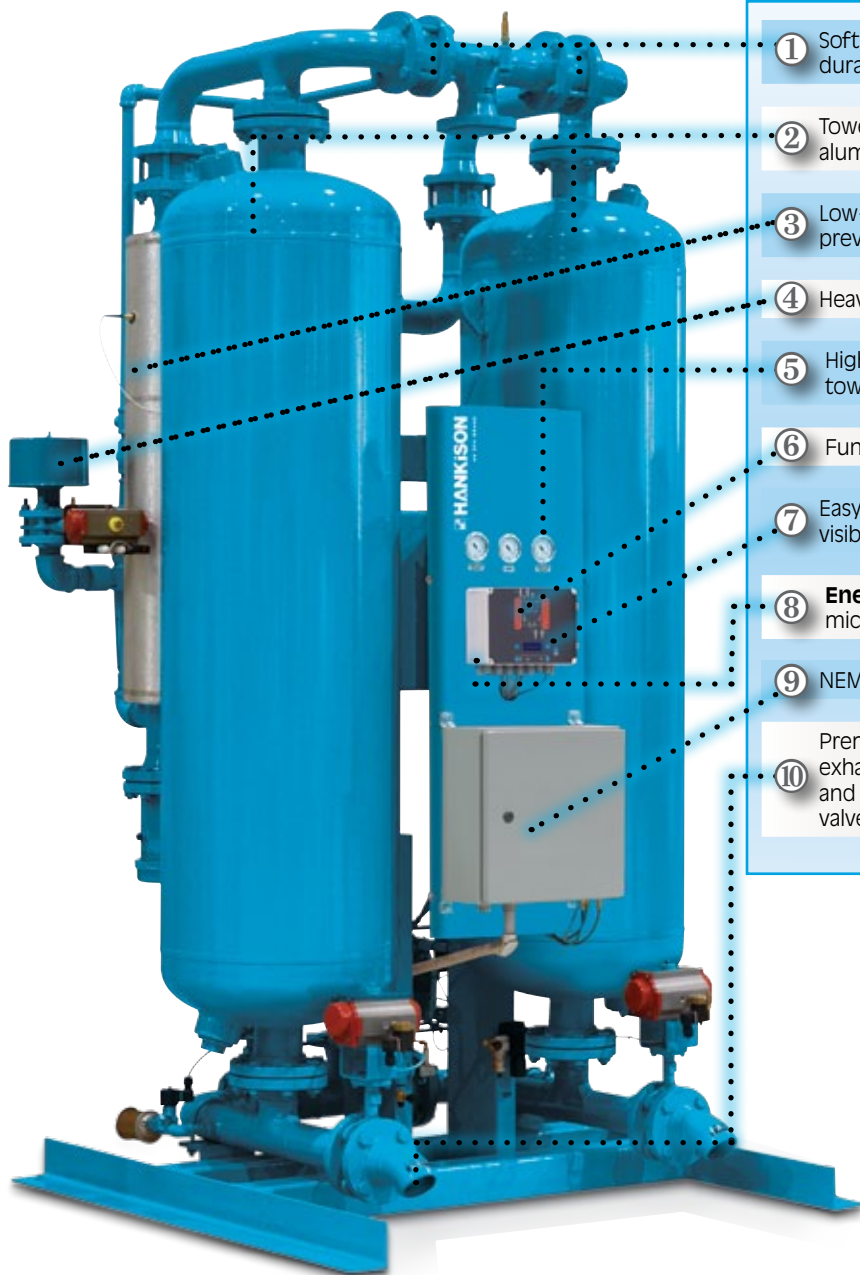
Model HPD 1050

The Hankison Guarantee

Hankison guarantees that HPD Series dryers will produce the design dew point while operating continuously at maximum rated flow (100% duty cycle) at CAGI ADF 200 inlet standards of 100°F inlet temperature and 100% relative humidity at 100 psig.



DELIVERING INNOVATION THROUGH DESIGN



- ① Soft-seated check valves for tight shutoff and durability
- ② Towers filled with extra, high-grade activated alumina to deliver superior performance
- ③ Low-watt density heater saves energy and prevents premature desiccant aging
- ④ Heavy-duty air intake filter
- ⑤ High-quality pressure gauges display left tower, right tower, and purge pressure
- ⑥ Function indicator LEDs for easy monitoring
- ⑦ Easy-view vacuum fluorescent text display is visible under any condition
- ⑧ **Energy Management System** – advanced microprocessor-based control
- ⑨ NEMA 4 Construction
- ⑩ Premium quality inlet switching/purge exhaust butterfly valves for long life on 3" and larger (Quality pneumatic angle-seated valves for smaller sizes)

HPD Series Options

- Optional EMS controlled Free-Air Supercharger uses A3 Purge Technology™ to reduce purge costs



ENERGY SAVING FEATURES

ENERGY MANAGEMENT SYSTEM

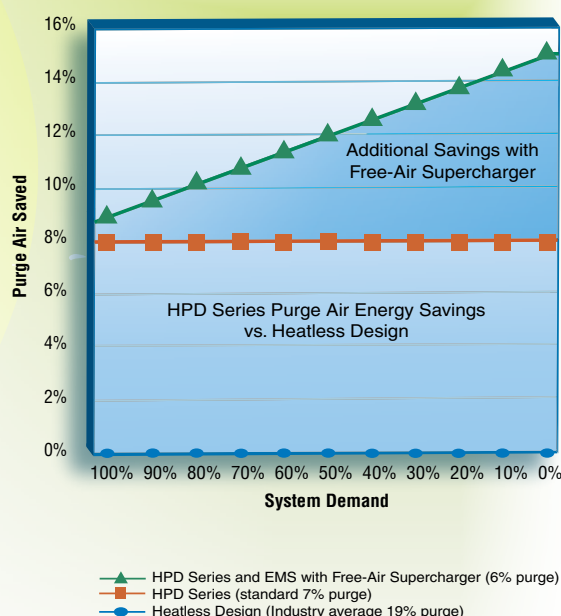


The EMS uses rugged temperature and humidity sensing technology that does not require calibration. Constant desiccant bed monitoring ensures stable dew point control. Algorithm-based A3 Purge Technology™ controls precisely engage the FA Supercharger when needed to manage the bed regeneration cycles and boost the airflow through the tower. Compressed purge air volume is reduced, further optimizing energy conservation.

Select an EMS option package for fast returns-on-investment. Energy saving logic controls the A3 Purge Technology™ to synchronize the engagement cycles of the Free-Air-Supercharger (FAS) to mirror plant air demands. This design features a precision venturi blower assembly, engineered to drastically reduce purge air consumption.

In fact, an HPD Series dryer with an EMS package may enable the use of a smaller air compressor. Total system efficiency would then be superior due to the linear energy- saving potential of the dryer. Purge air savings of up to 15% are possible in direct proportion to demand when compared to typical heatless designs. Consistent -40°F pressure dew points and fast returns-on-investment are automatic year round.

Compressed Air Savings



HPD Series Product Features

		Controller Model		
		Standard	Option FA1	Option FA2
Pressure Dew Point per ISO 8573.1	ISO Class 3: -4°F (-20°C)	G	-	-
	ISO Class 2: -40°F (-40°C)	S	G	G
Free-Air Supercharger	Venturi Blower	-	3	3
EMS Control	Automatic Energy Savings	-	3	3
Vacuum Fluorescent Text	Digital Dew Point Monitoring	-	-	3
	2 Line, 16 Characters (high-visibility in darkness or sunlight)	3	3	3
Languages	English, French, and Spanish	3	3	3
Power Recovery	Automatic Restart after Power Loss	3	3	3
	Remote Indication of Alarm	3	3	3
Dry Contacts	Power On	3	3	3
	Heater On	3	3	3
Overlay w/ Circuit Graphics & LED Indicators Alarm LEDs with Text Display	Tower Status (drying switchover heat, cool, etc.)			
	Tower Switch-over Failure (low heater temp/high heater temp)	3	3	3
	Sensor Over-range & Under-range Service Reminder			

S = Seasonal G = Guaranteed 3= Included



HPD OPERATION STANDARD AND FA SUPERCHARGER DESIGN

STANDARD DESIGN:

Moist, filtered compressed air enters the pressurized on-line desiccant-filled drying Tower 1 through valve (A). Up-flow drying enables the desiccant to strip the air stream of moisture. Clean, dry compressed air exits through valve (E) to feed the air system. Tower 2 (when in regeneration mode) closes valve (B), then depressurizes to atmosphere through muffler (C). Valves (D & G) open and the heater turns on. A portion of dry compressed air (purge air) is diverted before exiting (E) and passes through the heater. Hot dry purge air desorbs the moisture from the desiccant as it flows down through Tower 2 to exit at valve (D). Once desorbed, the heater turns off and cool dry purge air continues to pass until the desiccant bed is cooled. Finally, 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 bed and valves (A & D) will close. Operations will switch and Tower 1 will be regenerated.

EMS OPTIONS WITH FA SUPERCHARGER DESIGN:

Whereas the standard design operates on a fixed time interval basis, Free-Air Supercharger versions manage the drying and regeneration cycles with precision for systems with variable air demands. The on-line Tower will continue to dry the air stream until the "moisture front" is detected. Only then will the switch-over sequence begin. In regeneration mode the FA Supercharger is engaged and a portion of dry purge air exits valve (F) to be injected into the Y-axis of the FA Supercharger. A3 Purge Technology™ draws ambient air into the X-axis to desorb the desiccant at better than 1:1 amplification. Sensors detect the retreat of the moisture front, disengages the FA Supercharger, eliminates the purge air usage and, initiates the repressurization cycle. The dry, pressurized off-line Tower will remain ready and isolated until sensors detect that the on-line drying Tower is saturated. Then, the switch-over will occur and the process will repeat.

Purge Air Operating Cost Comparison

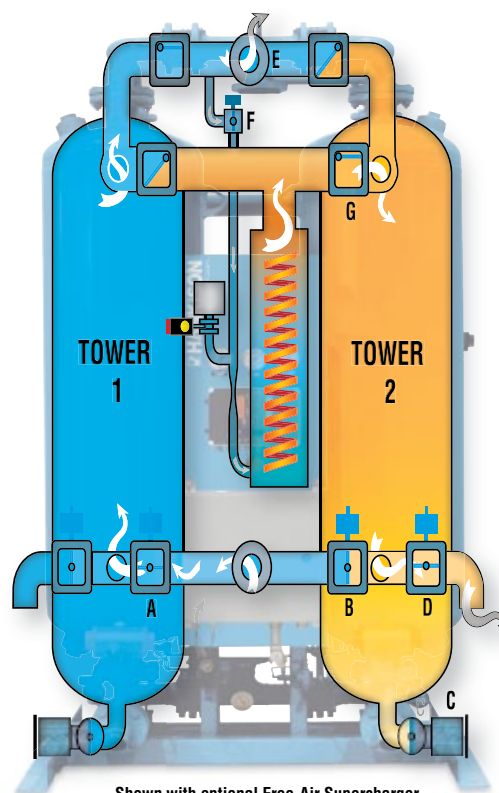
Annual Cost of Compressed Purge Air (Constant operation at average air demand)					
Average Air Demand		Regeneration Cost by Technology ¹			
		Heatless Design	HPD Series	HPD Series	
flow	scfm	nm ³ /h	Industry average 15% purge	Standard 7% purge	w/Free-Air Supercharger 6% purge
100%	1,050	1,784	\$20,585	\$9,606	\$8,234
90%	945	1,606	\$20,585	\$9,606	\$7,411
75%	788	1,339	\$20,585	\$9,606	\$6,176
50%	525	892	\$20,585	\$9,606	\$4,117
35%	368	625	\$20,585	\$9,606	\$2,882
20%	210	357	\$20,585	\$9,606	\$1,647

¹ Assumes 8760 hours, 10 cents per KwH, 5 scfm (8.5 nm³/h) per HP

Performance Table

Controller	Pressure Dew Point		EMS Energy Savings
	-40°F (-40°C)	-4°F (-20°C)	
Standard	S	G	—
Optional Free-Air Supercharger	G	—	✓

S — seasonal G — guaranteed ✓ — included



Shown with optional Free-Air Supercharger

HPD SERIES SPECIFICATIONS

HPD Series Product Specifications

Model	Inlet Flow @ 100 psig, 100°F ¹		Heater Rated Output kW	Average kW	Dimensions						Inlet/Outlet Connections		Approx. Weight		HF Series Prefilter	HTA Series Afterfilter
	scfm	nm³/h			W		D		H							
					in	mm	in	mm	in	mm	in	mm	lbs	kg		
(Recommended)																
HPD300	300	510	4.5	200	48	1,219	46	1,168	98	2,489	1.5" NPT	38.1	1,400	635	HF-36-12-DGL	HTA400
HPD400	400	680	6.0	2.67	53	1,346	52	1,321	104	2,642	1.5" NPT	38.1	1,800	817	HF5-40-16-DG	HTA400
HPD500	500	850	6.0	3.34	53	1,346	52	1,321	105	2,667	2" NPT	50.8	1,800	817	HF5-44-20-DG	HTA600
HPD 600	600	1,019	8.0	4.01	55	1,397	53	1,346	108	2,743	2" NPT	50.8	2,000	907	HF5-44-20-DG	HTA600
HPD750	750	1,274	10.0	5.01	60	1,524	59	1,499	114	2,896	3" FLG	76.2	2,400	1,089	HF5-48-20-DG	HTA1200
HPD900	900	1,529	12.0	6.01	60	1,524	59	1,499	114	2,896	3" FLG	76.2	2,400	1,089	HF5-54-24-G	HTA1200
HPD1050	1,050	1,784	14.0	7.01	64	1,626	62	1,575	113	2,870	3" FLG	76.2	2,900	1,315	HF5-56-24-G	HTA1200
HPD1300	1,300	2,209	16.0	8.68	66	1,676	63	1,600	118	2,997	3" FLG	76.2	3,400	1,542	HF5-60-24-G	HTA1800
HPD1500	1,500	2,549	19.0	10.0	80	2,032	66	1,676	116	2,946	3" FLG	76.2	5,100	2,313	HF5-60-24-G	HTA1800
HPD1800	1,800	3,058	23.0	12.0	80	2,032	66	1,676	116	2,946	3" FLG	76.2	5,100	2,313	HF5-60-24-G	HTA1800
HPD2200	2,200	3,738	27.5	14.7	85	2,159	73	1,854	128	3,251	4" FLG	101.6	7,800	3,538	HF5-64-4F-G	HTA2400
HPD2600	2,600	4,417	32.0	17.4	85	2,159	73	1,854	128	3,251	4" FLG	101.6	7,800	3,538	HF5-68-4F-G	HTA3000
HPD3200	3,200	5,437	39.0	21.4	85	2,159	82	2,083	125	3,175	6" FLG	152.4	9,000	4,082	HF5-72-6F-G	HTA4800

¹ Performance data per CAGI Standard ADF 200 for Desiccant Compressed Air Dryer. Rating conditions are 100°F (37.8°C) inlet 100 psig (7 kg/cm²) inlet pressure, 100% relative humidity, 100°F (37.8°C) ambient temperature, and 5 psig (0.35 bar) pressure drop.

* Consult factory for larger models.

Inlet Flow

Inlet Flow capacities shown in the Specifications Table have been established at an inlet pressure of 100 psig (7 kg/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 Specifications Table by the multiplier from Table 1 that corresponds to your operating conditions.

Table 1

Pressure		Inlet Temperature °F (°C)						
psig	kg/cm ²	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	1.00	0.87

Dew Point

Outlet pressure dew point at rated inlet conditions of 100 psig (7 kg/cm²) and 100°F (38°C) saturated. Dew point varies slightly at other conditions. Consult the factory to determine exact outlet pressure dew point at your operating conditions.

Operating Conditions*

Max. working press.		Min. operating press.		Max. inlet air temp.		Min. inlet air temp.		Max. ambient temp.		Min. ambient temp.	
psig	kg/cm²	psig	kg/cm²	°F	°C	°F	°C	°F	°C	°F	°C
150	10.5	60	4.2	120	48.9	40	4.4	120	48.9	40	4.4

*Applies to HPD models 250-3200

Hankison has built a global reputation for manufacturing quality compressed air treatment solutions. For over half a century Hankison has provided customers in the compressed air industry with the latest technology to produce superior results.

Hankison is dedicated to pursue the best solution in an expanding marketplace to manufacture new products that meet customer's performance, quality and energy savings requirements. We will continue to excel by providing the best service, sales support, and products to bring value to our customers.

OUR GLOBAL NETWORK

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