PNEUDRI DH

Heat Regenerative (TSA) Regeneration High Efficiency Compressed Air Dryers

The PNEUDRI range of heat regenerative dryers has proven to be the ideal solution for many thousands of compressed air users worldwide and in a wide variety of industries.

Compressed air purification equipment must deliver uncompromising performance and reliability whilst providing the right balance of air quality with the lowest cost of operation. Many manufacturers offer products for the filtration and purification of contaminated compressed air, which are often selected only upon their initial purchase cost, with little or no regard for the air quality they provide, the cost of operation throughout their life or indeed their environmental impact. When purchasing purification equipment, delivered air quality, the overall cost of ownership and the equipment's environmental impact must always be considered.

The Parker domnick hunter Design Philosophy

Parker domnick hunter has been supplying industry with high efficiency filtration and purification products since 1963. Our philosophy 'Designed for Air Quality & Energy Efficiency' ensures products that not only provide the user with clean, high quality compressed air, but also with low lifetime costs and reduced CO_2 emissions.

DESIGNED FOR AIR QUALITY & ENERGY EFFICIENCY

REDUCED CO_2

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Benefits:

- **PNEUDRI dryers provide efficient removal of water vapour from compressed air**
- **Delivered air quality is in accordance with ISO 8573-1:2001, the international standard for compressed air quality**
- **Improves production efficiency and reduces maintenance costs and downtime**
- **Pressure Dewpoint's of -70°C, -40°C & -20°C (ISO 8573-1 :2001 Classes 1, 2 & 3) are available**
- **Unlike refrigeration dryers, the -40°C & -70°C pressure dewpoint's offered by PNEUDRI not only eliminates corrosion, it also inhibits the growth of micro-organisms**
- **Low noise level <75 db (A)**
- **Optional Energy Management System available**
- **PNEUDRI DH dryers utilise unique PTC self regulating heaters that do not exceed 200°C, eliminating the possibility of internal oil-mist fires and reducing energy consumption**
- **Compared to traditional twin tower dryer designs, PNEUDRI's unique modular construction and snowstorm filling of the adsorbent desiccant material provides:**
  - **Consistent dewpoint performance**
  - **A smaller, more compact and lightweight dryer**
  - **Fits through a standard doorway reducing installation costs**
  - **100% standby at a fraction of the cost of twin tower designs**
  - **Simple to install and easy to maintain**
  - **Offers increased flexibility during maintenance (multi bank)**
  - **Easily expanded to meet increased system demand**
  - **Fully corrosion protected inside and out**
  - **Approvals to International Standards (PED, CSA/UL/CRN)**
  - **Eliminates the need for costly annual pressure vessel inspections**
  - **10 year guarantee on pressure envelope**

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Dryer Performance

Dryer Models	Dewpoint (Standard)		ISO 8573-1:2001 Classification (standard)	Dewpoint (Option 1)		ISO 8573-1:2001 Classification (Option 1)
	°C	°F		°C	°F	
DHE	-40	-40	Class 2	-70	-100	Class 1
DHS	-40	-40	Class 2	-70	-100	Class 1

Product Selection PNEUDRI MAXI DH

Stated flows are for operation at 7 bar g (100 psi g) with reference to 20°C, 1 bar a, 0% relative water vapour pressure. For flows at other pressures apply the correction factors shown.

Model	Pipe Size	L/S	m^3/min	m^3/hr	cfm
DH102	G 2	66	3.97	238	140
DH104	G 2	132	7.95	476	280
DH106	G 2½	198	11.92	714	420
DH108	G 2½	264	15.88	951	560
DH110	G 2½	330	19.86	1189	700
DH208	G 2½	528	31.76	1902	1120
DH210	G 2½	661	39.71	2378	1400
DH308	G 2½	793	47.65	2853	1679
DH310	G 2½	991	59.57	3567	2100
DH408	G 2½	1057	63.53	3804	2239
DH410	G 2½	1321	79.43	4756	2779

Correction Factors

Temperature Correction Factor CFT							
Maximum Inlet Temperature	°C	25	30	35	40	45	50
	°F	77	86	95	104	113	122
	CFT	0.91	1.00	1.00	1.32	1.73	2.23

Pressure Correction Factor CFP											
Minimum Inlet Pressure	bar g	4	5	6	7	8	9	10	11	12	13
	psi g	58	73	87	102	116	131	145	160	174	189
	CFP	1.60	1.33	1.14	1.00	0.89	0.80	0.73	0.67	0.62	0.57

Dewpoint Correction Factor CFD			
Required Dewpoint	PDP °C	-40	-70
	PDP °F	-40	-100
	CFD	1.00	1.43

Dryer Selection

To correctly select a dryer model, the flow rate of the dryer must be adjusted for the minimum operating pressure and, maximum operational temperature of the system. If the dewpoint required is different to the standard dewpoint of the dryer then the flow rate must also be adjusted for the required outlet dewpoint.

1. Obtain the minimum operating pressure, maximum inlet temperature and maximum compressed air flow rate at the inlet of the dryer. Obtain the outlet dewpoint required.
2. Select correction factor for maximum inlet temperature from the CFT Table (always round up e.g. for 37°C use 40°C correction factor)
3. Select correction factor for minimum inlet pressure from the CFP table (always round down e.g. for 5.3 bar use 5 bar correction factor)
4. Select correction factor for required outlet dewpoint from the CFD table
5. Calculate minimum drying capacity
   Minimum Drying Capacity = Compressed Air Flow x CFT x CFP x CFD
6. Using the minimum drying capacity, select a dryer model from the flow rate tables above (dryer selected must have a flow rate equal to or greater than the minimum drying capacity)

If the minimum drying capacity exceeds the maximum values of the models shown within the tables, please contact Parker domnick hunter for advice regarding larger multi-banked dryers.

Technical Data

Dryer Models	Min Operating Pressure		Max Operating Pressure		Min Operating Temp		Max Operating Temp		Max Ambient Temp		Electrical supply (standard	Electrical supply (optional)	Thread Connections	Noise Level
	bar g	psi g	bar g	psi g	°C	°F	°C	°F	°C	°F				dB (A)
DHS	4	58	10.5	154	2	35	50	122	55	131	415V 3ph 50Hz+Neutral	N/A	BSPP or NPT	<75
DHE	4	58	10.5	154	2	35	50	122	55	131	415V 3ph 50Hz+Neutral	N/A	BSPP or NPT	<75

Controller Options

Controller Options	Function								
	Power on Indication	Fault Indication	Display Fault Condition Values	Service Interval Indication	Service Countdown Timers	Comfigurable Alarm Settings	Remote Volt Free Alarm Contacts	Filter Service Timer	DDS Energy Management System
SMART DDS	•	•					•		•
ELECTRONIC	•	•	•	•	•	•	•	•	•

Dryer Coding Example

DRYER MODEL	CONTROLLER TYPE	NUMBER OF DRYING BANKS	NUMBER OF DRYING COLUMNS	DDS ENERGY MANAGEMENT
DH	S = Smart E = Electronic	No of individual dryers in installation	Number of columns per dryer bank	DDS = DDS Fitted (DDS standard with Advanced Controllers)
DH	S	3	08	DDS

Weights and Dimensions

Model	Pipe Size	Height (H)		Width (W)		Depth (D)		Weight	
		mm	ins	mm	ins	mm	ins	kg	lbs
DH102	G 2	1578	62.1	717	28.2	321	12.6	150	331
DH104	G 2	1578	62.1	947	37.3	321	12.6	245	540
DH106	G 2½	1578	62.1	1177	46.3	321	12.6	325	717
DH108	G 2½	1578	62.1	1407	55.4	321	12.6	440	970
DH110	G 2½	1578	62.1	1637	64.4	321	12.6	565	1246

Power Consumption

Model	Power Consumption	Full Load Amps
	kW H Average	
DH102	1.1	7
DH104	2.2	14
DH106	3.3	21
DH108	4.4	28
DH110	5.5	36
DH208	8.8	58
DH210	11	72
DH308	13.2	86
DH310	16.5	108
DH408	17.6	115
DH410	22	144

Important Note

Adsorption dryers are designed to remove water vapour from compressed air. For optimum performance and to deliver air quality in accordance with ISO 8573-1:2001, liquid water, oil and solid particulate must be first be removed using Parker domnick hunter OIL-X EVOLUTION Grade AO, AA filters. Grade AR filters should also be fitted to the outlet of the dryer for solid particulate removal.

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