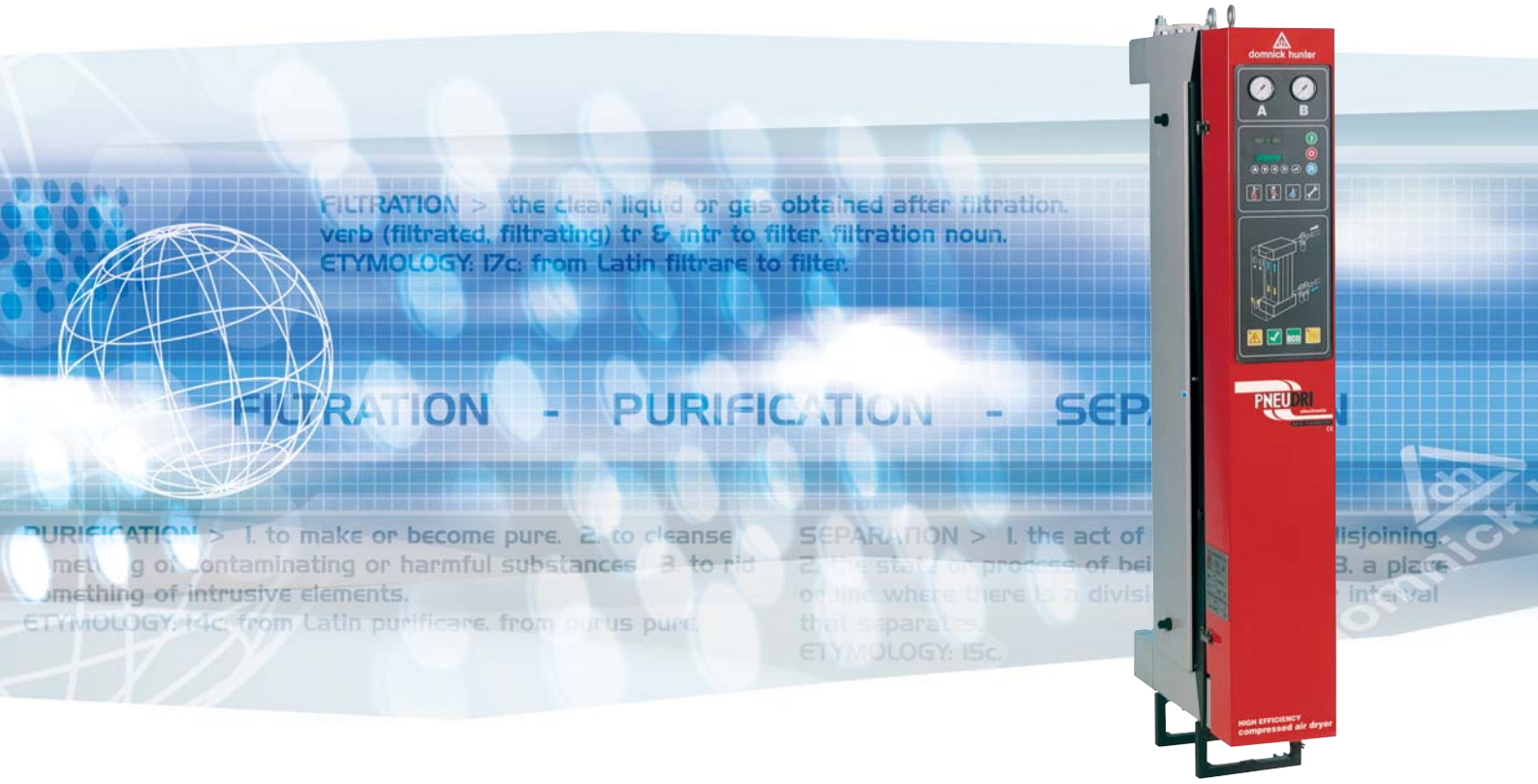
domnick hunter



PNEUDRI Heat Regenerative Compressed Air Dryers

www.domnickhunter.com

Compressed air plays an important role in modern industry.

Modern production systems and processes demand increasingly higher levels of air quality that require the elimination of moisture from the compressed air system to guarantee reliability and quality of finished products.

Only desiccant dryers can provide totally dry and clean compressed air.

domnick hunter heat regenerative dryers provide the perfect solution for cost effective operation. Reduced energy consumption, reliable performance and a comprehensive aftersales care package provide for complete peace of mind.

- **Protects your compressed air system**
  A moisture free system will increase the reliability of production proceses, giving better quality finished products and preventing damage to the compressed air system.
- **High quality, clean dry compressed air**
  Used in conjunction with domnick hunter OIL-X filters, PNEUDRI will deliver air at -40ºC (-40ºF) pressure dewpoint as standard, in accordance with ISO 8573.1 :2001 class 3.2.1.
- **Reliable Performance**
  Long-life pneumatic cylinder valves provide reliable switching, and high quality desiccant ensures stable dewpoint performance.
- **Energy efficient**
  With low differential pressure and a reliable energy management system, cost effective operation is assured.
- **Space saving**
  Advanced aluminium forming technology makes PNEUDRI typically half the size and weight of traditional twin tower dryers, taking up less floor space and making installation easy.
- **Modular Design**
  domnick hunter's unique modular construction means that extra banks can easily be added if air demand increases.

Energy Savings

Energy savings of up to 80% can be achieved with the proven Dewpoint Dependent Switching (DDS) energy management system.

Regeneration requirements are dependent on flow, pressure and temperature. The DDS system allows the cost of drying compressed air to be matched exactly to your plant conditions.

DDS controls the drying cycle by continuously reacting to the loading under which the dryer is operating and minimises the energy input required.

As dryers rarely operate at full rated capacity all of the time (eg during shiftwork and periods of low demand), this energy management system can provide considerable savings.

COMPRESSED AIR QUALITY TO ISO 8573.1

The ISO 8573.1 international standard for compressed air quality provides a simple system of classification for the three main contaminants present in any compressed air system - DIRT, WATER and OIL. To specify the quality class required for a particular application, simply list the class for each contaminant in turn.

Class	Dirt			Water	Oil
	Maximum number of particles per m^3			Pressure Dewpoint °C	(incl. vapour) mg/m^3
	0.1-0.5 micron	0.5-1 micron	1-5 microns		
1	100	1	0	-70	0.01
2	100,000	1,000	10	-40	0.1
3	-	10,000	500	-20	1
4	-	-	1,000	3	5
5	-	-	20,000	7	-
6	-	-	-	10	-

PNEUDRI - Designed for drying performance

Dryer Operation

PNEUDRI comprises of high tensile extruded aluminium columns containing twin chambers each filled with desiccant material which dries the compressed air as it passes through. One chamber is operational (drying), while the opposite chamber is regenerating.

A small volume of dried compressed air is used to regenerate the desiccant bed. This air is expanded from line pressure to atmospheric pressure, and at the same time is heated by electric heaters built into the desiccant bed. This hot air removes the moisture from the desiccant and is exhausted from the dryer.

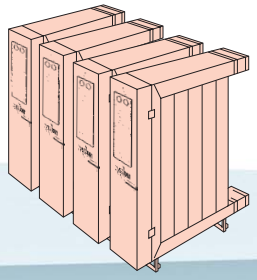
The additional heaters used in this method of regeneration greatly reduce the purge air consumption of the dryer and increase its operating efficiency.

Modular Design

Modular design eliminates the need for complex valves and interconnecting piping which are used in conventional twin tower designs.

domnick hunter's unique modular construction means that extra banks can easily be added if air demand increases.

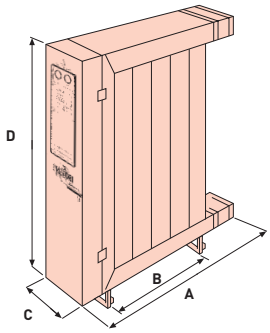
Multibanking of dryers enables individual banks to be easily isolated for routine maintenance work, or even a decrease in air capacity requirements (eg. night shift). This means no interruption to your clean, dry air supply.



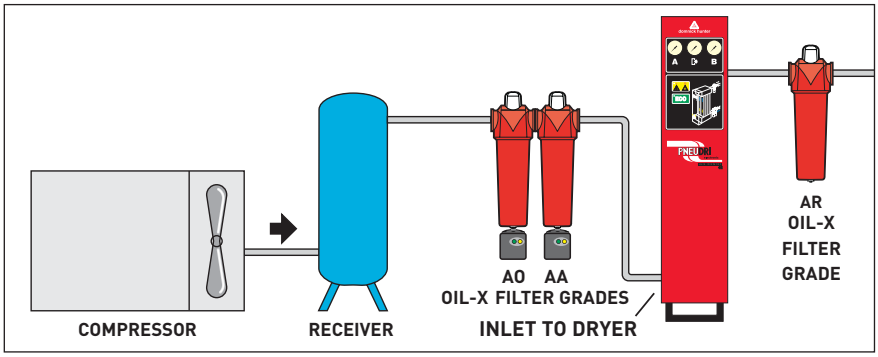
Product selection and technical data

Model	* Flow Rate @ 7 bar g (102 psi g)			Dimensions in mm (inches)				Pipe Conn.††	Weight Kg (lbs)	Power Consumption kW H Average
	Nm³/min	Nm³/hr	scfm	A	B	C	D			
DH102	3.96	238	140	717 (28.2)	264 (10.4)	321 (12.6)	1578 (62.1)	2"	150 (331)	1.1
DH104	7.92	476	280	947 (37.3)	494 (19.4)	321 (12.6)	1578 (62.1)	2"	245 (540)	2.2
DH106	11.89	714	420	1177 (46.3)	724 (28.5)	321 (12.6)	1578 (62.1)	2½"	325 (717)	3.3
DH108	15.85	951	460	1407 (55.4)	954 (37.6)	321 (12.6)	1578 (62.1)	2½"	440 (970)	4.4
DH110	19.81	1189	700	1637 (64.5)	1184 (46.6)	321 (12.6)	1578 (62.1)	2½"	565 (1246)	5.5

*Referenced to 20°C (68°F) and 1 bar a (14.5 psi a)



Maximum operating pressure	13 barg (190 psi g)
Minimum operating pressure	4 barg (58 psi g)
Maximum inlet temperature	50°C (122°F)
Minimum inlet temperature	2°C (35°F)
Noise level	<75 dB(A)
Voltage	415V/3ph + Neutral / 50-60Hz



1. Select correction factor for minimum pressure (CFP) to inlet of dryer (Allow for system pressure losses when determining minimum operating pressure). - see diagram above.

2. Select correction factor for maximum temperature (CFT) to inlet of dryer.

Maximum Temperature to	°C	25	35	40	45	50
Inlet of Dryer	°F	77	95	104	113	122
Correction Factor Temperature (CFT)		1.1	1.0	0.76	0.58	0.45

3. Calculate dryer capacity required following the example below.

$$\frac{\text{Inlet flow requirement}}{\text{CFP x CFT}} = \text{Minimum Dryer capacity requirements}$$

Using dryer capacity requirement, select dryer model from table, ensuring the dryer model selected is equal to or greater than your dryer capacity requirement.

Minimum Pressure to	bar g	4	5	6	7	8	9	10	11	12	13
Inlet of Dryer (CFP)	psi g	58	73	87	102	116	131	145	160	174	189
Correction Factor Pressure (CFP)		0.63	0.75	0.88	1.0	1.13	1.25	1.38	1.5	1.63	1.75

ISO 9001:2000
Q 05240

domnick hunter limited
Dukesway, Team Valley Trading Estate,
Gateshead, Tyne and Wear,
England NE11 0PZ
Tel: +44 (0)191 402 9000
Telefax: +44 (0)191 482 6296
http://www.domnickhunter.com

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