

PNEUMATECH[®] INC.

DESIGNED

*for economical, trouble-free
performance and long-life reliability*

MANUFACTURED

*with high-quality components
and innovative techniques*



SUPPORTED

*by a world-wide distribution network
of compressed air management consultants*



PHC SERIES HEAT OF COMPRESSION AIR/GAS DRYERS

WORLD LEADERS IN COMPRESSED AIR & GAS SYSTEM MANAGEMENT

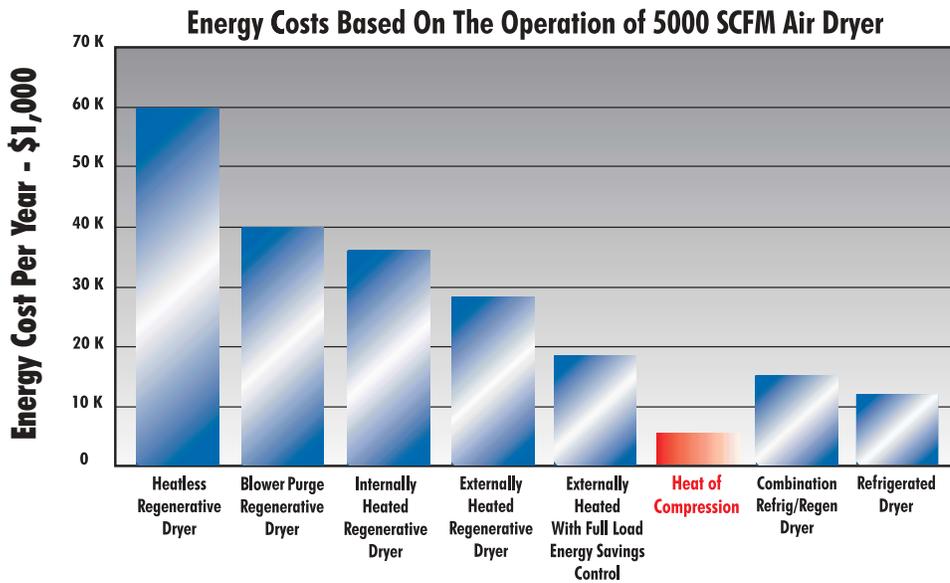
Industry leaders in consistent and measurable energy savings

State-of-the-Art Energy Efficiency

When air exits the compressor, it has been heated to temperatures as high as 400°F. In a more conventional system, this air is cooled and moisture is removed by an aftercooler and separator where approximately 2/3 of the total moisture is removed. The air then enters a dryer to remove the remaining moisture to obtain the desired dew point. Typically, in a conventional system the dryer is purged with dried compressed air or with a combination of dried compressed air and electrically generated heat.

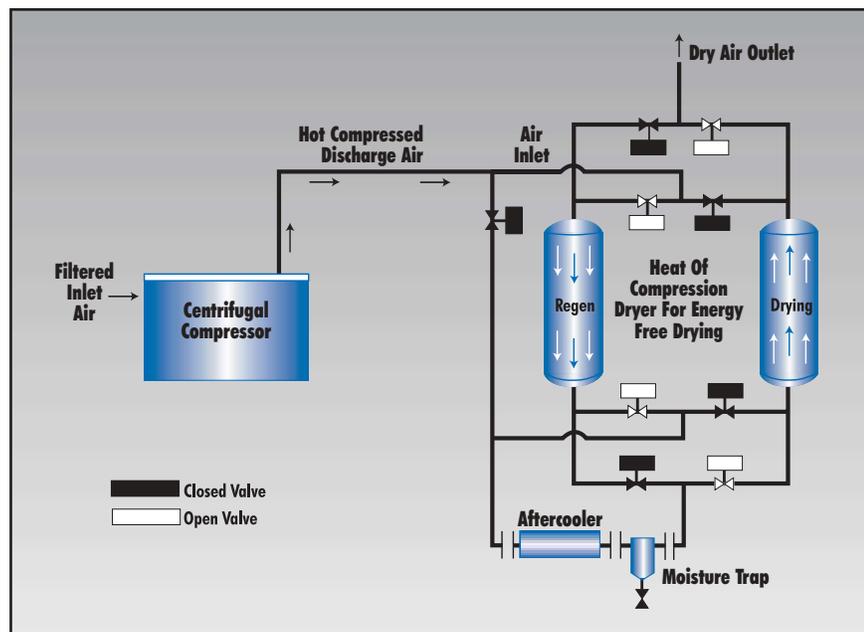
In a Heat of Compression dryer system, the 400°F air exiting the compressor enters the dryer directly in the regenerating tower. This hot compressed air regenerates the tower without exhausting any air to purge. The air is then routed to an aftercooler and separator, cooled to 100°F and brought into the drying tower (see diagram) where it is dried to the dew point temperature. Due to the inherent design of this dryer, it may only be used with an oil-free compressor system.

Energy Savings Estimates



Energy Cost Based On The Operation Of 5000 SCFM Air dryer

Schematic Diagram of New Air Compressor/Dryer Combination



Is a Heat of Compression dryer right for my system?

Features and Benefits

- Operates at very low pressure drop of less than 5 PSIG
- Does not use any external source of heat for desiccant regeneration
- High performance, non-lubricated inlet and outlet switching and purge flow valves for maintenance-free operation
- Dry air sweep cooling cycle option to reduce dew point fluctuations and temperature spikes
- Desiccant towers designed for low pressure drop in order to provide longer desiccant life
- Hot air piping is fully insulated for: safety, minimum heat loss and to ensure maximum desiccant regeneration and to maintain dew point performance
- Stainless steel desiccant retainer and air diffuser screen assures even air distribution



Common Applications:

- **Process Industries** • **Petro-chemicals** • **Electronic Manufacturing** • **Painting**

Although Heat of Compression dryers can achieve dew points of -40°F or better under certain design conditions, dew points of -40°F to $+10^{\circ}\text{F}$ are more common. If this dew point range is acceptable, then a Heat of Compression dryer will absolutely maximize your savings potential.

Standard Features

- High efficiency shell and tube water-cooled heat exchanger and moisture separator.
- Dryers are equipped with dual automatic drains.
- Panel-mounted pressure and temperature gauges for the inlet and outlet of the dryer.
- Locally mounted temperature and pressure gauges on each tower.
- Locally mounted temperature gauges at the inlet and outlet of the aftercooler.
- Desiccant towers designed for low velocity and low pressure drop to allow for longer desiccant life.
- Sequence lights installed on panel to indicate tower drying, tower regenerating and cooling cycle.
- Programmable Logic Controller (PLC) to operate the sequence of operation.
- Insulated hot air piping.
- Pressure vessels meet ASME and CRN requirements.
- NEMA class 4.
- Full size pressure relief valve on each tower.

Specifications

MODEL	VOLTAGE V-Ph-Hz	DESICCANT LBS./TOWER	CONNECTION IN & OUT	APPROX. SHIP WT. (lbs.)	APPROX. DIMENSIONS LxWxH (MILLIMETERS)
PHC-500	115-1-60	450	2.0" NPT	2,200	80"X56"X100" (2032x1422x2540)
PHC-650	115-1-60	550	2.0" NPT	2,600	80"X60"X110" (2032x1524x2794)
PHC-750	115-1-60	670	2.5" FLG	3,600	80"X60"X120" (2032x1524x3048)
PHC-1000	115-1-60	880	2.5" FLG	4,100	92"X72"X110" (2337x1829x2794)
PHC-1250	115-1-60	1,050	3.0" FLG	4,700	92"X72"X120" (2337x1829x3048)
PHC-1500	115-1-60	1,200	3.0" FLG	5,400	108"X68"X107" (2743x1727x2718)
PHC-1800	115-1-60	1,500	4.0" FLG	5,800	110"X92"X116" (2794x2337x2946)
PHC-2100	115-1-60	1,800	4.0" FLG	7,000	120"X100"X106" (2337x2540x2692)
PHC-2600	115-1-60	2,200	4.0" FLG	9,500	128"X100"X128" (3251x2540x3251)
PHC-3100	115-1-60	2,600	6.0" FLG	11,100	152"X112"X128" (3861x2845x3251)

Operating Conditions:

- Minimum Air Inlet Temperature: 250°
- Optimum Air Inlet Temperature: 375°F
- Air Inlet Pressure: 100 PSIG
- 100% Saturated Vapor
- Maximum Cooling Water Temperature: 85°F
- Optimum Cooling Water Temperature: 80°F

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PNEUMATECH™
& ConservAIR® Technologies Co. LLP

4909 70th Avenue • Kenosha, Wisconsin U.S.A. 53144
 (262) 658-4300 Fax: (262) 658-1945 • www.pneumatech.com



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