



# Ingersoll Rand

## H & HC Heat-Of-Compression Air Dryers



# Air Quality Solutions by Ingersoll-Rand

## Introduction

Heat-of-compression dryers are dual tower, desiccant designs. The HOC dryer is the most energy efficient dryer available. It recovers the heat that is a natural by-product of the compression process. This “free” heat is utilized in the air drying process to provide moisture-free air while consuming virtually no energy.

## Reliability

Ingersoll-Rand heat-of-compression dryers, both H-Series and HC-Series, are the world's simplest, and most reliable regenerative dryers. Their design innovation, coupled with unsurpassed performance, will help assure the reliability of your compressed air system.

- The Ingersoll-Rand HOC dryer includes proven high-performance 2-way valves, providing years of trouble-free operation.
- The unique design of the HOC dryer, with its stripping and cooling cycles, enables it to achieve year-round dew points below  $-40^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$ ).
- The HOC dryer is equipped with a micro-processor-based control system that maintains performance and monitors the health of the unit, so downtime is minimized.
- H- and HC-Series dryers can be installed with multiple compressors, allowing maximum flexibility without sacrificing the integrity of the compressed air system.



**HC Dryer  
Configuration**

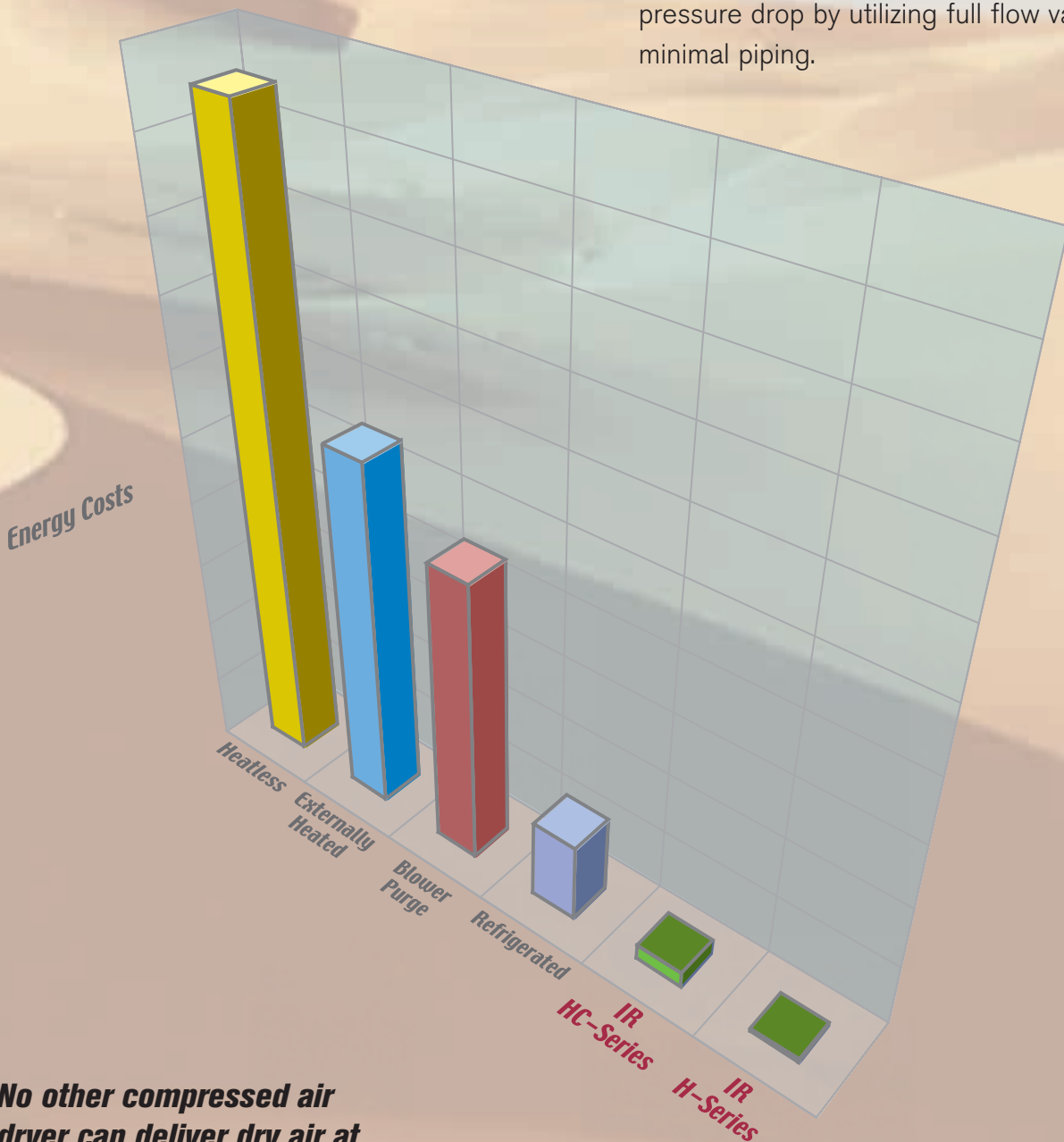
**2-Way Valve**



## Energy Efficiency

Heat-of-compression dryers are the most cost-effective means to protect air lines, tools and expensive instrumentation. The H-Series dryer does not use any heaters or blowers. The only operating cost is for electricity needed to power the microprocessor controls, which is less than 24 watts - the equivalent of a light bulb.

- The H-Series averages less than € 10 per year in total electrical cost, because there are no heaters or blowers.
- The H-Series design consumes no valuable compressed air.
- The HC-Series can constantly provide -40° C (-40° F) or lower dew points, at a fraction of the cost associated with other regenerative type dryers.
- The HOC dryer is designed to minimize pressure drop by utilizing full flow valves and minimal piping.



**No other compressed air dryer can deliver dry air at so low an annual operating cost**

# Heat-Of-Compression Technology

## Two Dryer Solutions to Choose From

The **H-Series** dryer provides instrument air quality with a very low initial cost.

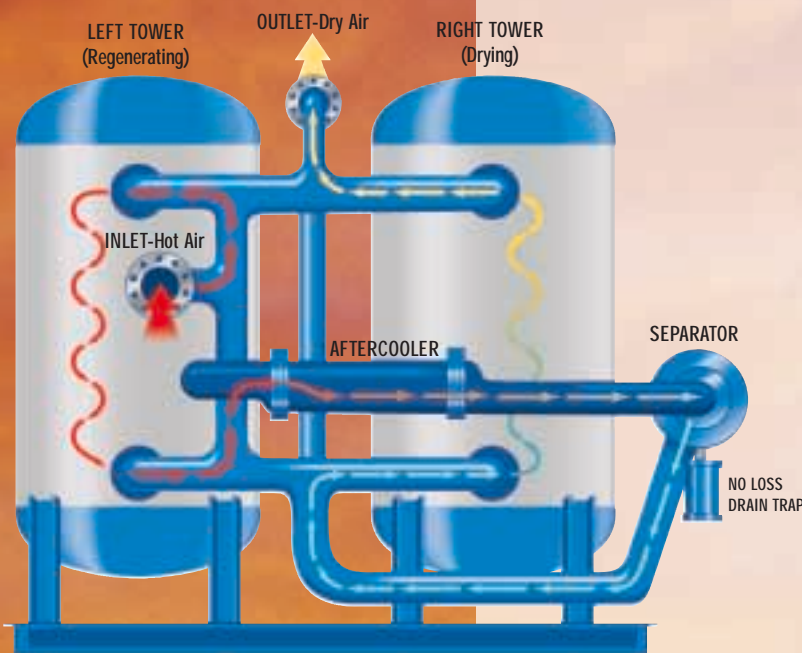
The **HC-Series** is a more sophisticated dryer, which includes a stripping and cooling cycle, delivering a constant dew point without temperature or dew point spikes.

Ingersoll-Rand can equip the dryer with a Dewpoint Demand Controller which switches the towers only on demand. This uses full capacity of the desiccant, reducing the number of tower shifts and compensates for fluctuations in flow.

## H-Series Operation

The H-Series design provides efficient operation by allowing air to enter the dryer directly from the compressor. It is channeled into the regenerating tower, where the heat of compression removes the moisture from the desiccant.

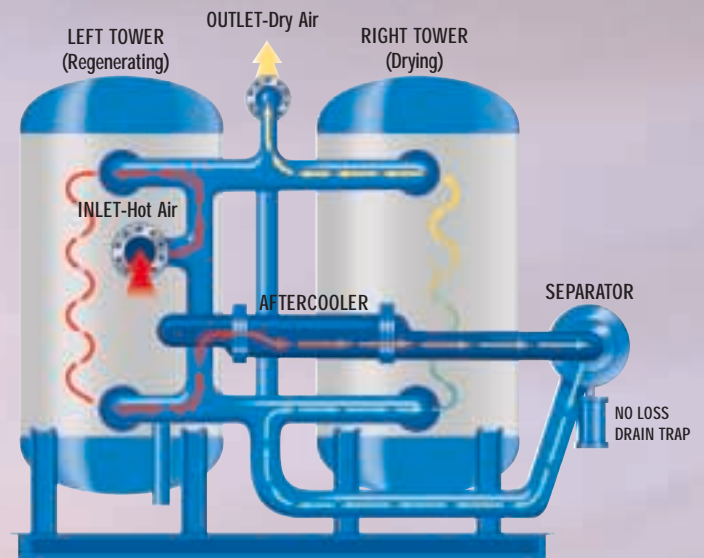
The air next flows into the aftercooler, then separator, and finally into the drying tower, where the air is dried to its final low dew point.



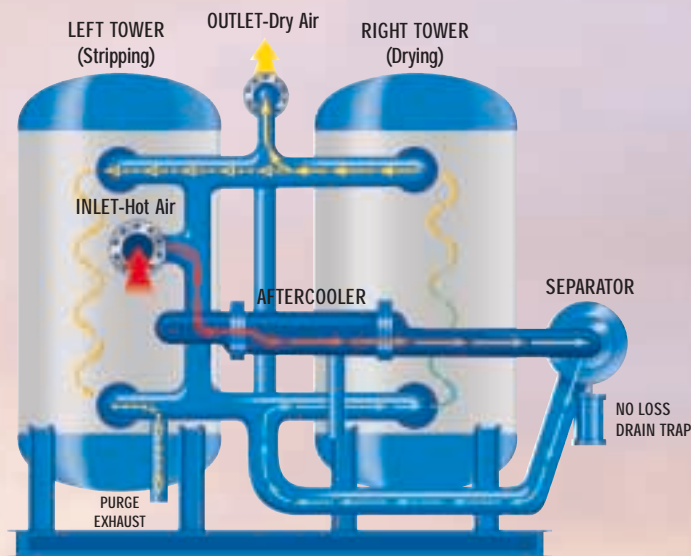
# HC-Series Operation

## Left Tower Heating (see Fig. 1)

During the heating cycle, hot air from the compressor is directed into the regeneration tower through 2-way valves. There, the hot, thirsty air removes the bulk of the water from the desiccant. The air then enters the aftercooler, where it is cooled. Water is then removed through a moisture separator and no loss drain trap. Finally, the air enters the drying tower, where it is dried to its final dew point.



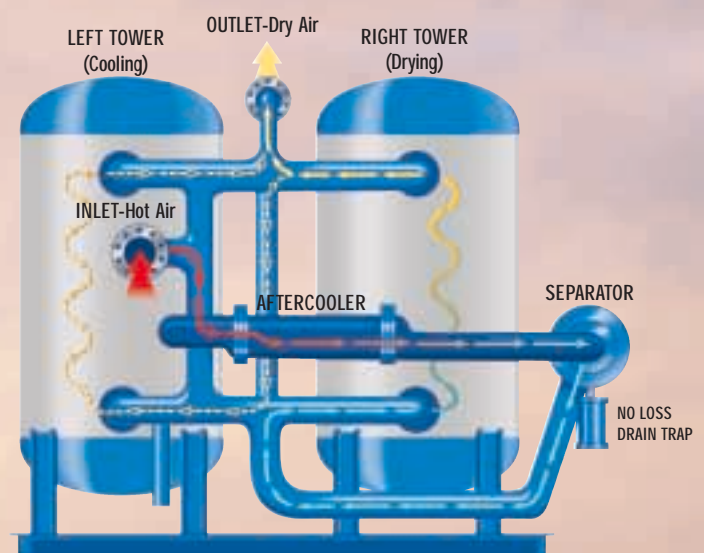
(Fig. 1)



(Fig. 2)

## Left Tower Cooling (see Fig. 3)

At the end of stripping, the regenerating tower is repressurized and cooling begins. During cooling, a portion of dry outlet air is directed into the regenerating tower to reduce the temperature of the bed. There is no air lost during cooling. Cooling and stripping combine to provide extremely low dew points and eliminate dew point and temperature fluctuations during tower shift.



(Fig. 3)



## Productivity

The problems created by moisture contamination in a compressed air system include rust and corrosion in the air piping, inadequate air tool lubrication, and damage to labeling, packaging and the finished goods. The HOC dryer can prevent such productivity losses throughout your operation by delivering a continuously low dewpoint.

- The H-Series dryer can deliver points in the  $-18^{\circ}\text{C}$  ( $0^{\circ}\text{F}$ ) to  $-51^{\circ}\text{C}$  ( $-60^{\circ}\text{F}$ ) range depending on the operating conditions. The H-Series dryer delivers better than instrument quality air to eliminate moisture problems.
- With its patented stripping and cooling cycles, the HC-Series dryer can produce continuous year-round dew points of  $-40^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$ ) and below.
- Both the H- and HC-Series dryers prevent costly production interruptions due to moisture contamination.

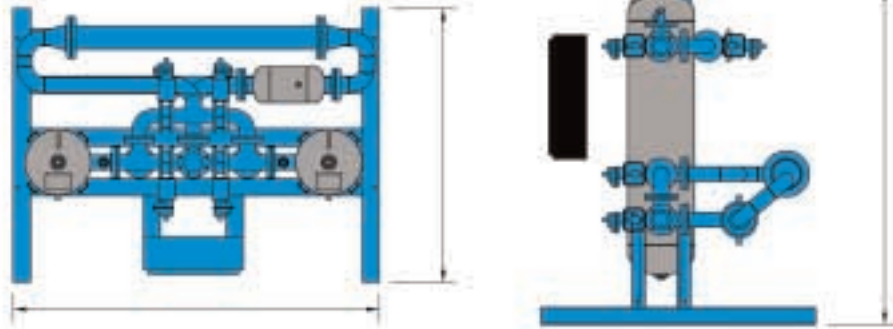
## Health, Safety and Environment

Ingersoll-Rand HOC dryers are designed to protect the health and safety of the operators and the environment in which they are installed.

- Dryers utilize a non-acidic desiccant and no ozone depleting refrigerants.
- Insulated towers protect operators from hot surfaces.
- The HOC dryer is a packaged design, with all components pre-piped and pre-wired. This eliminates costly installation charges and minimizes floor space requirements.

# Technical Specifications

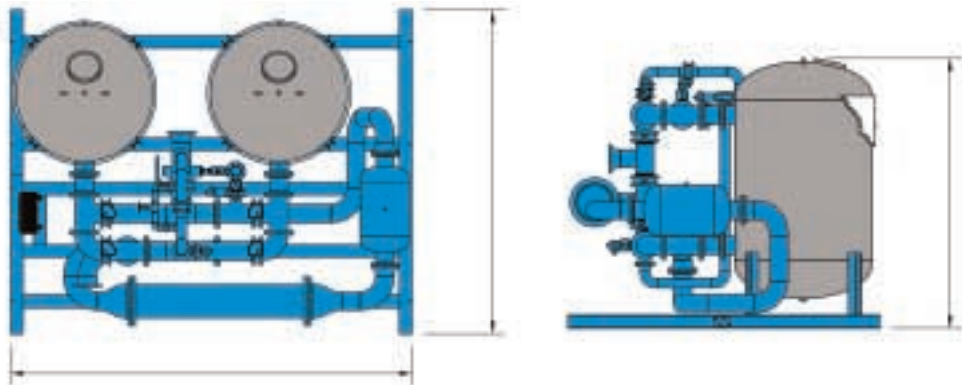
## H-Series



Model	Capacity*		Inlet/Outlet		Dimension (Inches / mm-approximate)			Weight - approx. Kgs
	M <sup>3</sup> /h	Scfm	FLG (Inches)	DIN (mm)	Length	Width	Height	
H-8	1190	19,83	3"	80	2100	1600	2150	1750
H-10	1500	25	3"	80	2150	1600	2150	2000
H-13	1900	31,66	3"	80	2500	1700	2200	2200
H-19	2700	45	3"	80	2650	1850	2200	2600
H-30	4200	70	4"	100	2800	1850	2300	3200
H-43	6000	100	6"	150	3750	2300	2400	5100
H-58	8200	136,66	6"	150	3950	2400	2450	5800
H-75	10700	178,33	8"	200	4350	2900	2500	7900
H-95	13600	226,66	8"	200	4900	3050	2700	9800
H-118	16750	279,16	8"	200	5000	3100	2700	10900
H-148	20300	338,33	10"	250	5400	3400	2750	12600
H-170	24200	403,33	10"	250	5600	3600	3000	15000

\*Capacity based on 7 barg/100 psig operating pressure, 107° C/225° F compressor discharge temperature and 29° C/85° F cooling water temperature.

## HC-Series

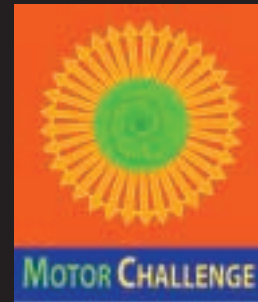


Model	Capacity*		Inlet/Outlet		Dimension (Inches / mm-approximate)			Weight - approx. Kgs
	M <sup>3</sup> /h	Scfm	FLG (Inches)	DIN (mm)	Length	Width	Height	
HC-7	1100	18,33	2"	50	1900	1500	2550	1900
HC-9	1350	22,5	3"	80	2300	1550	2550	2350
HC-14	1950	60	3"	80	2600	1800	2600	2900
HC-21	3050	50,83	4"	100	2600	2000	2700	4100
HC-30	4350	72,5	4"	100	2950	2700	2800	4600
HC-41	6000	100	6"	150	3050	2750	2850	5550
HC-54	7750	129,16	6"	150	3250	2850	2900	7850
HC-69	9800	163,33	6"	150	4050	3000	3000	9200
HC-85	12100	201,66	8"	200	4600	3800	3250	10600
HC-103	14700	245	8"	200	4600	4000	3300	13400
HC-122	17420	290,33	8"	200	5000	4100	3400	15100
HC-143	20450	340,83	8"	200	5000	4200	3400	17000
HC-166	23700	395	10"	250	5600	4400	3550	19500

\*Capacity based on 7 barg/100 psig operating pressure, 107° C/225° F compressor discharge temperature and 29° C/85° F cooling water temperature.

# More Than Air. Solutions.

Online solutions: [www.air.irco.com](http://www.air.irco.com)



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