



Heat of Compression Dryers

800-6,000 m³/hr for Rotary Screw Compressors

3,900-15,300 m³/hr for Centrifugal Compressors

Our Heat-of-Compression (HOC) dryers are a reliable and efficient solution to boost your productivity. Their technologically advanced design provides constant, moisture-free, high-quality air with virtually no energy consumption.

Ultimate Energy Efficiency

HOC dryers use heat that is a natural by-product of the compression process. This heat, which is normally wasted, is recovered to regenerate the desiccant throughout the drying process, making HOC dryers the most energy-efficient type of desiccant dryer available.

Reliability You Can Count On

Ingersoll Rand HOC dryers are among the most simple and reliable on the market. Their robust design, ease of installation and unsurpassed performance help improve energy-efficiency, while providing high quality air and avoiding costly interruptions due to moisture contamination.

Superior Connectivity and Control

HOC dryers feature a state-of-the-art controller with connectivity capabilities and the ability to be installed with multiple compressors. This allows for maximum flexibility in maintaining performance, as well as monitors the health of the unit without sacrificing the integrity of the compressed air system and minimising downtime.

Enhanced Air Quality for Demanding Applications

High-quality air is critical to your operation. Particles, condensation, oil and oil vapor in a compressed air system can lead to downtime or damage to sensitive downstream equipment. Our HOC dryers provide moisture-free, clean air to ensure product quality, while reducing downtime and product liability risk.



Food & Beverage



Pharmaceutical

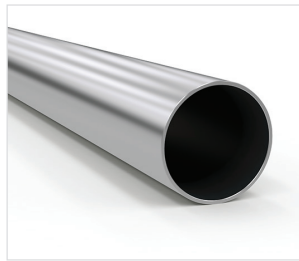


Automotive



Chemical

A Superior Solution for High-Quality Air



Problems like rust and corrosion in the air piping, damage to downstream tools and instrumentation, as well as spoilage of finished goods are created by moisture contamination in a compressed air system.

HOC dryers prevent such productivity losses by delivering the set pressure dew point continuously. By combining its robust

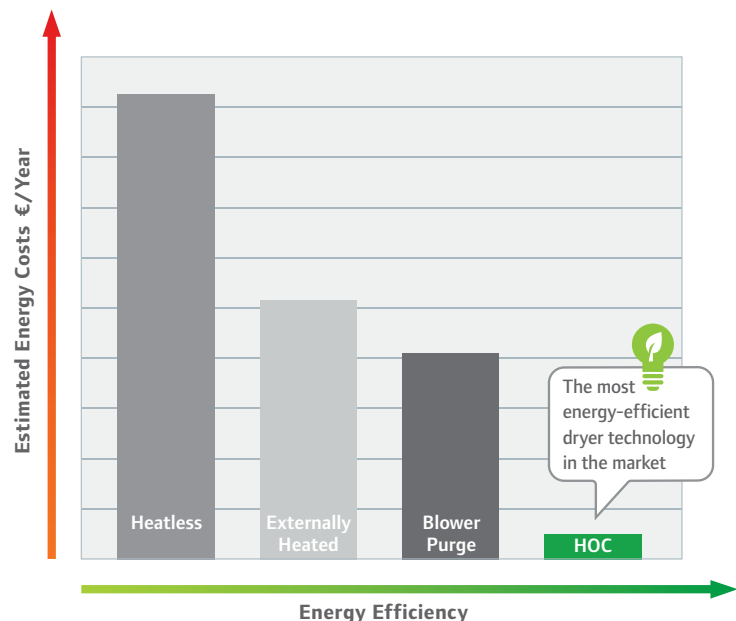
design and the heat from the compression process that maximises sustainability and minimises energy costs, Ingersoll Rand HOC dryers provide you with flexibility, uptime and control that reduces the total cost of ownership.

HOC Features

- **High-quality, moisture-free air** with year-round dew points down to -40°C (-40°F) and below
- **Minimises maintenance and energy consumption** by using heat generated during the compression process to regenerate the desiccant media
- **Long-lasting two-way valves** provide years of trouble-free operation
- **Full-flow valves and optimised piping layout** deliver moisture-free quality air and minimise pressure drop
- **High temperature coating** on wet parts to enhance corrosion resistance, extending dryer life
- **Intuitive, advanced system controller** with connectivity capabilities for efficient operation
- **Environmentally friendly design** repurposes heat that would normally be wasted, increasing sustainability
- **Self-contained unit** delivered ready for start-up, including baseplate mount, piping, pre-wiring and PLC-based controller

HOC Lowers Operating Costs

Compared to other desiccant dryer technologies, HOC dryers deliver the most energy efficiency at a given dew point.



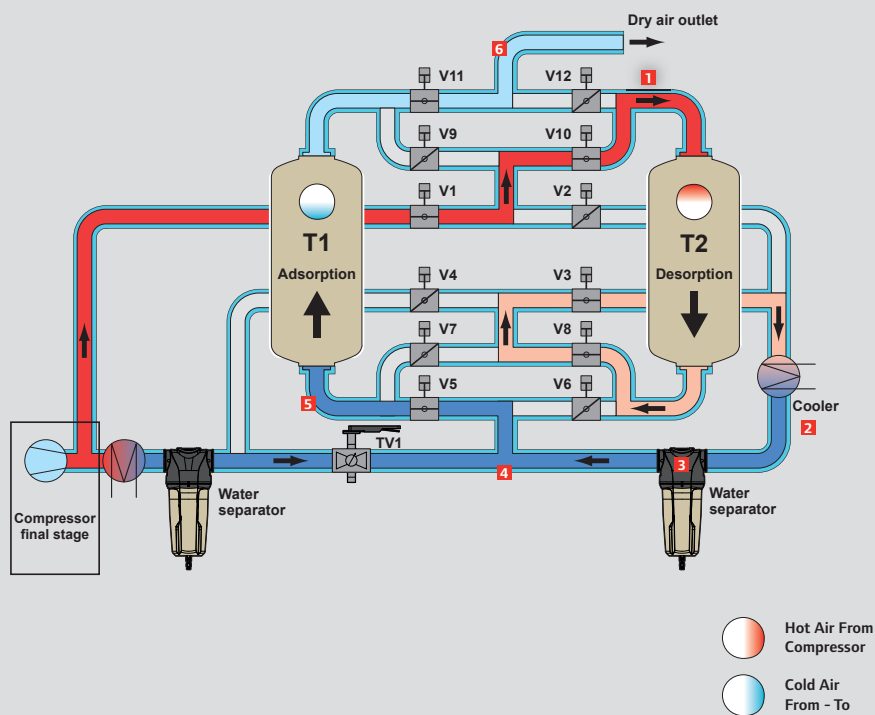
CARE Maintenance Programs | RELIABILITY FOR LIFE

Compressed air is critical to your operation. A proper maintenance strategy is crucial to avoiding unplanned, unbudgeted downtime and production interruptions. By choosing an Ingersoll Rand CARE maintenance service program — from full risk transfer to routine maintenance or parts coverage — you are investing in your future with a trusted global partner.

How HOC Dryers Work

Heat-of-compression (HOC) dryers feature a dual-tower design using reliable desiccant as the drying agent. They are the most energy-efficient desiccant dryer available, recovering the heat that is a natural by-product of the compression process. This “free” heat is utilised in the air drying process to provide moisture-free air, while consuming virtually no energy. As with all dual-tower designs, the HOC dryer offers a continuous supply of dry compressed air by switching the towers between desorption and cooling cycles, to constantly regenerate the desiccant.

Desorption Phase - Compressor Hot Discharge Air*



Desorption Phase

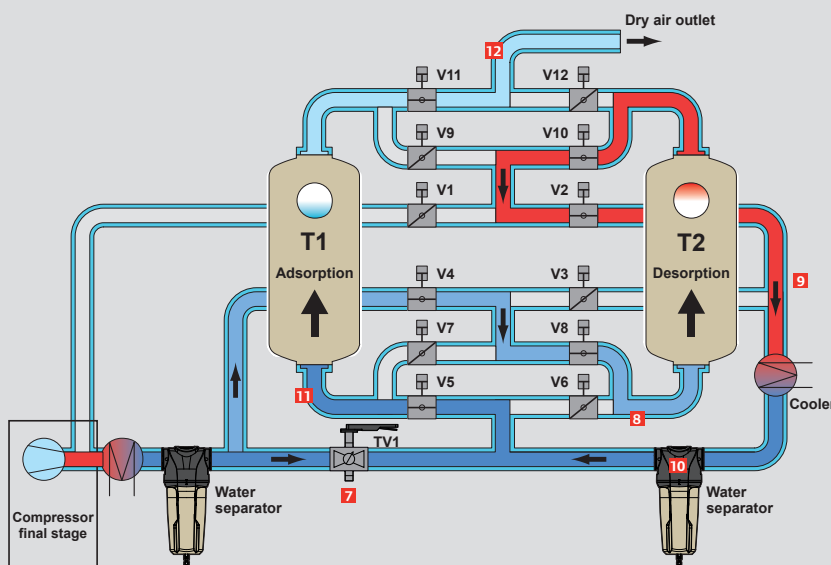
- 1 Hot air regenerates the desorption tower (T2) by removing the moisture
- 2 The moist warm air is cooled by the aftercooler
- 3 Condensate is drained from the system through the water separator and a no-loss drain
- 4 The partial air flow then joins with the cold partial stream coming from the compressor so that is now 100% of the compressed air flow
- 5 Air enters the adsorption tower (T1), where it is dried to its final dew point
- 6 Cool, dry air exits the dryer

Cooling Phase

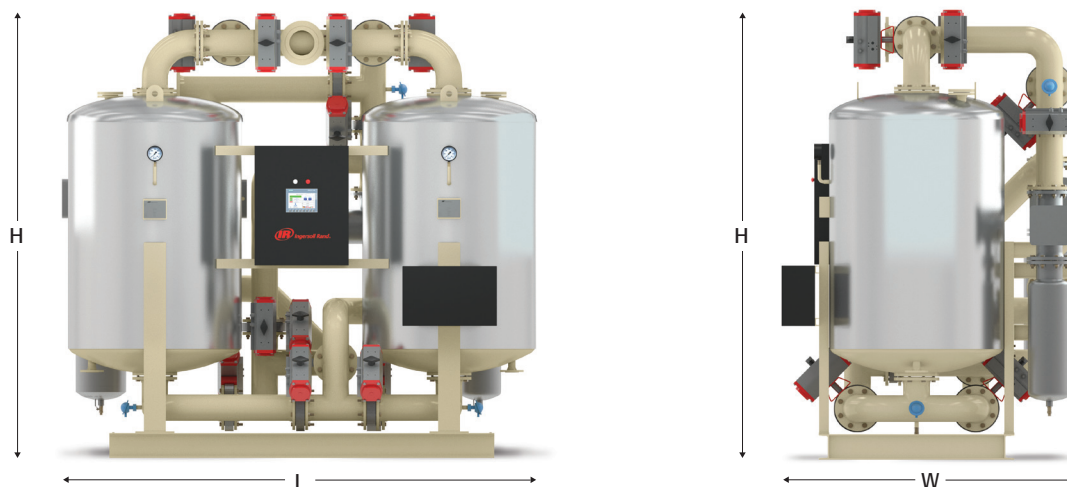
- 7 TV1 valve splits the air to T1 for adsorption and T2 for cooling
- 8 Cold air directly from the compressor cools the hot desiccant bed
- 9 Hot air exits from the desorption tower (T2) and is cooled by the aftercooler
- 10 Condensate is drained from the system through the water separator and a no-loss drain
- 11 100% air flow is dried to its final dew point in the adsorption tower (T1)
- 12 Cool, dry air exits the dryer

To further reduce outlet air temperature, both towers run in adsorption mode for a few minutes before re-starting the desorption phase

Cooling Phase - Compressor Hot Discharge Air*



* Flow diagrams represent dryer configured for use with centrifugal compressors. Dryers used with rotary compressors have the same working principle, but with a different valve setup.



Dryer Specifications for Rotary Screw Compressors

Model	Capacity		Air Connections (PN16)		Dimensions Length x Width x Height (mm)	Weight kg
	m ³ /min	m ³ /hr	Cold Air	Hot Air		
D800HC-R	13.3	800	DN50	DN50	1,430 x 1,050 x 2,100	1,100
D1300HC-R	21.7	1,300	DN80	DN80	1,600 x 1,200 x 2,250	1,450
D1700HC-R	28.3	1,700	DN80	DN80	1,800 x 1,350 x 2,660	1,850
D2300HC-R	38.3	2,300	DN100	DN80	2,050 x 1,550 x 2,430	2,300
D2900HC-R	48.3	2,900	DN100	DN80	2,050 x 1,650 x 2,500	2,650
D3400HC-R	56.7	3,400	DN100	DN100	2,400 x 1,700 x 2,500	2,900
D4150HC-R	69.2	4,150	DN150	DN100	2,500 x 1,800 x 2,620	3,450
D5000HC-R	83.3	5,000	DN150	DN150	2,800 x 1,850 x 2,700	3,900
D6000HC-R	100.0	6,000	DN150	DN150	3,000 x 1,950 x 2,750	4,000

Rated capacity at 20°C and 1 bar abs., at an operating pressure of 7 bar g and an adsorption temperature of 35°C (saturated). Hot air from compressor: max. 180°C, up to 230°C on request. Cooling water inlet temperature of 25°C.

Dryer Specifications for Centrifugal Compressors

Model	Capacity		Air Connections (PN16)	Dimensions Length x Width x Height (mm)	Weight kg
	m ³ /min	m ³ /hr			
D3900HC-C	65	3,900	DN150	3,000 x 1,800 x 2,850	5,100
D6900HC-C	115	6,900	DN150	3,250 x 2,050 x 3,050	8,200
D9000HC-C	150	9,000	DN200	3,600 x 2,400 x 3,200	10,500
D13200HC-C	220	13,200	DN250	5,600 x 3,400 x 3,150	11,200
D15300HC-C	255	15,300	DN250	5,800 x 3,600 x 3,300	14,500

Rated capacity at 20°C and 1 bar abs., at an operating pressure of 7 bar g and an adsorption temperature of 35°C (saturated). Hot air from compressor min. temperature of 95°C. Cooling water inlet temperature of 25°C.



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