TURBO-DRI

Desiccant Air Dryers

1,000-14,743 scfm

TURBO-DRI Desiccant Dryers

Ingersoll Rand's line of TURBO-DRI™ desiccant dryers is the result of our unending pursuit to create the most reliable desiccant dryers you can operate. Our developments have set many new standards and new expectations industry-wide.

Flexible choices for clean, dry air

Whatever your budget or air requirements, our advanced desiccant dryers provide consistent dew point control as well as long-lasting operation to limit potential system corrosion and protect sensitive instrumentation, tools, products and processes.

Advanced Design for Optimum Operation and Superior Reliability

From space-saving profiles and reliable desiccant to state-of-the-art control and ease of maintenance, these unique dryers offer exceptional performance. Innovative engineering combined with durable components for easy installation and operation.

Top Quality, Durable Desiccant

High-performance, reliable, non-acidic desiccant makes up the core of our TURBO-DRI desiccant dryer. High-strength, fracture-resistant, activated alumina limits dusting and provides clean, dry air to downstream equipment and processes.

Flexible, Low-Profile Design

Streamline servicing, enhance safety and increase uptime with an easy-access, low-profile design that places key maintenance points at operator level. The compact silhouette also allows for upright shipment and facilitates quick installation.

Easy-to-Maintain, High-Performance Valves

We took special care to ergonomically and conveniently locate our high-performance valves to reduce maintenance times. Our design allows the typical diaphragm valve on a heatless dryer to be rebuilt in less than ten minutes, without removing the valve from the associated manifold.

State-of-the Art Control

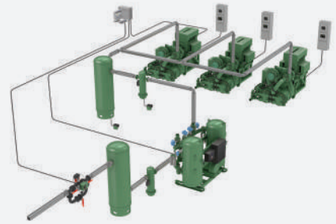
Maintain optimum performance and limit downtime using an advanced microprocessor controller that continuously monitors dryer functions.

Selecting the Right Desiccant Dryer

TURBO-DRI desiccant dryers are engineered for low pressure drop through valve selection, tower sizing and filter design. Each dryer features two towers with high-strength desiccant and durable, easily maintained valves to deliver unsurpassed reliability, performance and customer value.

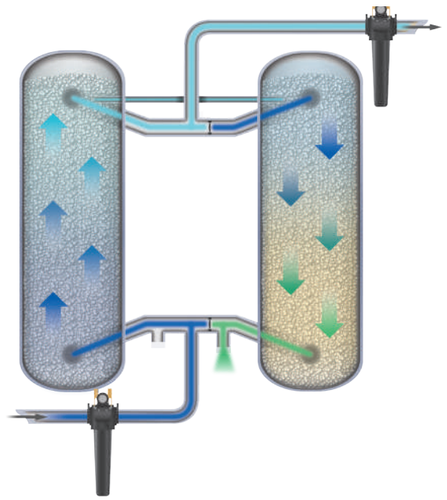
The key difference in each unit is the regeneration process – how moisture is desorbed from the desiccant. Various options offer a different balance between initial capital investment and long-term operating cost to best match your application.

Variables such as air capacity and quality, system demand and lifecycle costs determine which dryer is right for you. The lesser the demands, the more you can focus on low capital investment. The greater the demands, the greater the need for a more advanced dryer technology.



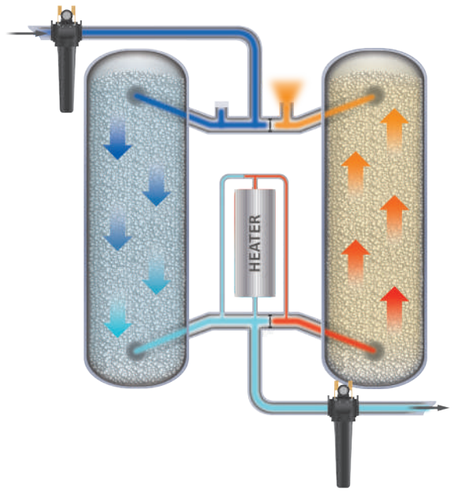
Heatless Dryers

The simplest approach – the Heatless dryer – diverts a portion of the dried compressed air through the off-line tower and regenerates its desiccant before purging the moisture into the atmosphere through a muffler. Heatless dryers are ideal for applications where dew point spikes cannot be tolerated. They are an economical choice in situations where lowering initial capital cost outweighs the additional operating cost of extending compressor run time to supply the air used in desiccant regeneration.



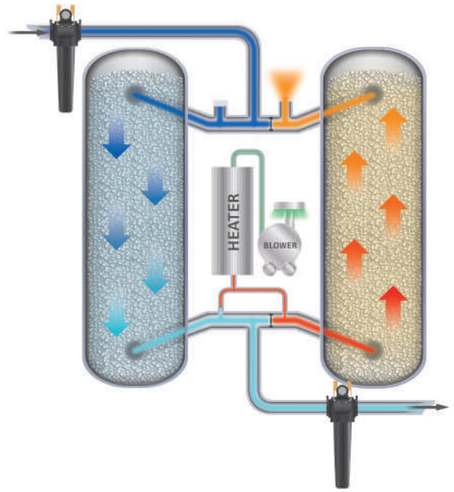
Heated Dryers

Heated dryers are similar to heatless dryers, with one big exception. Dried air diverted from the system passes through a high-efficiency external heater before entering the off-line tower to regenerate the desiccant. Because heated air holds considerably more moisture, this process reduces the amount of dry compressed air needed for regeneration. While heater-related components add to the initial capital investment, using less diverted compressed air lowers operating costs.



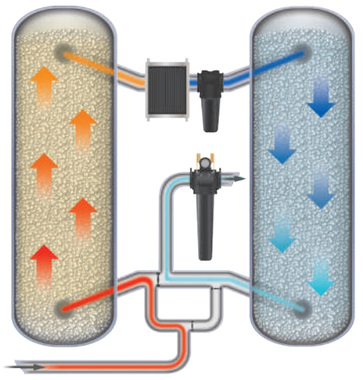
Heated Blower

Instead of diverting dried compressed air from the air system to regenerate the desiccant, a high-performance centrifugal blower directs ambient air through a heater and then through the off-line tower. This heated air regenerates the desiccant before being exhausted to the atmosphere. The Heated Blower design requires higher initial capital investment than the Heatless design, but provides significantly lower operating costs.



Heat-of-Compression (HOC)

With no heaters, blowers or compressed air loss, and minimal pressure drop, HOC dryers offer the lowest operating cost. Hot air exiting the compressor is diverted to the regenerating tower, where it removes moisture from the desiccant. Air is cooled as it passes through a heat exchanger, allowing moisture to condense for removal by a separator. Air then flows through the drying tower, where any remaining moisture gets adsorbed by the desiccant before being filtered to provide high-quality, oil-free air.



High Performance, Cost-Effective Features

TURBO-DRI desiccant dryers deliver the performance you need for greater reliability, quality and cost-efficiency from your compressed air system. The dependability of TURBO-DRI dryers is derived from the unique combination of components and features designed for a long and productive service life. These dryers satisfy both the quality and performance demands of your application and environment.

A Microprocessor Controller
Protects dryer by continuously monitoring operating parameters, while controlling valve switching to direct airflow and blower/heater operation

B Environmental Protection
IP54-rated for dust/moisture contamination protection (optional IP65 for wash-down applications)

C Motor Starter (Heated Blower only)
Used for high-efficiency centrifugal blower

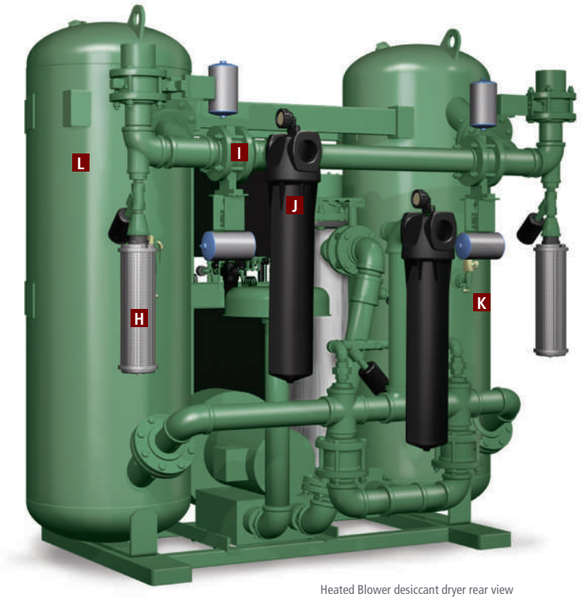
D Power Supply
Dryers operate at 50 or 60 Hz (pneumatic options available on Heatless model)

E Centrifugal Blower (Heated Blower only)
Advanced blower uses ambient air for regeneration, reducing compressed air loss

F High-Performance Heater (Heated and Heated Blower only)
Heats the air used in regeneration to increase moisture removal and reduce the need for air

G Non-Acidic, High-Strength Desiccant
Activated alumina desiccant provides maximum performance and is easy to store and handle

Heated Blower desiccant dryer front view

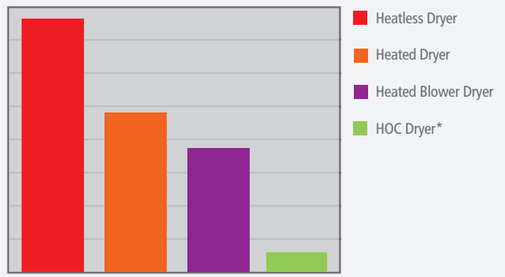


Heated Blower desiccant dryer rear view

HOC dryers: When energy efficiency is critical

HOC dryers are the most cost-effective means to protect air lines, tools and expensive instrumentation. The only electricity cost needed is to power the microprocessor controls—less than 150 watts per year, or the equivalent of one light bulb!

Dryer Energy Consumption Comparison



HOC components are specifically designed to minimize energy use. These include a stainless steel heat exchanger during the first stage of air cooling and a moisture separator that discharges condensate without compressed air loss. Also available with stripping and cooling cycle to limit temperature or dew point spikes.

*If stripping cycle is included, additional costs may be incurred due to compressed air usage.

H Silencing Muffler
Reduces exhaust air noise for a quiet work environment

I Long-Lasting Valves
Durable butterfly valves – centrally located for easy access – use self-energized sealing for quick response and long life

J Robust Filters
High-efficiency pre-filter and heavy-duty after-filter remove oil aerosol content down to 0.01 mg/m³ @ 21°C and particles down to 1 micron to ensure high-quality air for downstream point of use

K Safety Relief Valve
Protects dryer from over-pressurization

L Desiccant Towers
Desiccant towers are certified per regional requirements

M Humidity Sensor
As part of the optional EMS package, this sensor allows for continuous dew point monitoring

N Cool Sweep Mode (Heated Blower and HOC)
Reduces temperature and humidity spikes that may occur during switching

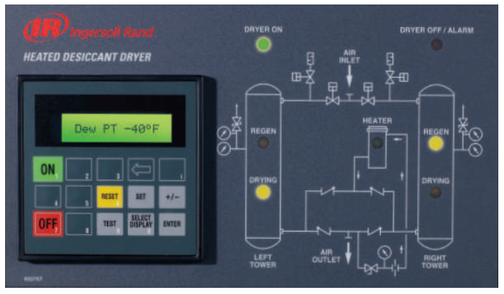
Comprehensive Dryer Control

A digital, multi-function controller, standard on every TURBO-DRI desiccant dryer, acts as the dryer's command center.

This advanced controller is programmed to monitor dryer operation and execute all valve switching functions for airflow and regeneration, with performance tracking and alarm monitoring. Compatible with MODBUS-capable networks, the controller further enhances dryer operating functions.

The full-featured control panel for Heatless, Heated, Heated Blower and HOC units includes:

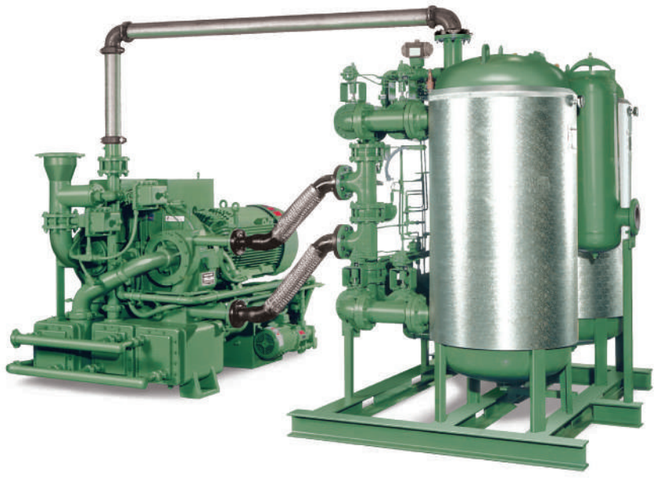
- Backlit LCD display for viewing critical dryer parameters under all lighting conditions
- Integrated keypad, providing user access to all internal functions and selectable displays
- Visual status indication using dryer schematics
- Multiple displays, from "Dryer On/Off Control" to "Regeneration Sequence Status"



A backlit LCD display for TURBO-DRI dryer smart control provides an icon-based interface for simple navigation, and multi-point indicators for alerts, alarms and critical temperature tracking.

TURBO DryPak™

This complete package delivers optimal efficiency and performance by integrating an advanced HOC dryer with a centrifugal compressor into one seamless system, minimizing your operating and installation costs. Contact your local representative for additional details.



TURBO-DRI Desiccant Dryer Performance

Model	Flow -40°F PDP scfm	Heater kW	Blower hp	Inlet/Outlet Connection	Width in	Depth in	Height in	Weight lb
TURBO-DRI Heatless Dryers								
THL1000	1,000	-	-	3.0 NPT	64	51	88	2,237
THL1200	1,200	-	-	3.0 NPT	64	51	88	2,424
THL1500	1,500	-	-	4.0 FLG	78	55	80	2,974
THL1800	1,800	-	-	4.0 FLG	84	61	92	3,905
THL2100	2,100	-	-	4.0 FLG	84	61	92	4,279
THL2700	2,700	-	-	4.0 FLG	84	61	92	4,926
THL3300	3,300	-	-	6.0 FLG	96	66	100	2,950*
THL4000	4,000	-	-	6.0 FLG	96	66	100	3,000*
THL5000	5,000	-	-	6.0 FLG	101	72	92	3,950*
TURBO-DRI Externally Heated Dryers								
TEH1000	1,000	9.0	-	3.0 NPT	79	48	80	3,043
TEH1200	1,200	12.0	-	3.0 NPT	79	48	80	3,285
TEH1500	1,500	15.0	-	3.0 NPT	84	55	92	4,480
TEH1800	1,800	18.0	-	4.0 FLG	84	60	92	4,956
TEH2100	2,100	18.0	-	4.0 FLG	84	60	92	5,350
TEH3000	3,000	30.0	-	4.0 FLG	96	73	100	7,750*
TEH4000	4,000	36.0	-	6.0 FLG	102	84	92	10,950*
TEH5000	5,000	50.0	-	6.0 FLG	120	91	97	13,248*
TEH6000	6,000	60.0	-	6.0 FLG	132	95	103	15,696*
TEH8000	8,000	75.0	-	8.0 FLG	156	101	105	17,910*
TURBO-DRI Heated Blower Dryers								
THB1000	1,000	24.0	7.5	3.0 NPT	78	59	80	3,767
THB1200	1,200	24.0	7.5	3.0 NPT	78	59	80	4,100
THB1500	1,500	30.0	15.0	3.0 NPT	98	65	92	5,515
THB1800	1,800	36.0	15.0	4.0 FLG	98	68	92	6,113
THB2100	2,100	45.0	15.0	4.0 FLG	98	67	92	6,911
THB3000	3,000	60.0	20.0	6.0 FLG	120	78	100	9,730*
THB4000	4,000	80.0	25.0	6.0 FLG	126	83	92	12,167*
THB5000	5,000	100.0	30.0	6.0 FLG	138	87	97	14,720*
THB6000	6,000	125.0	30.0	6.0 FLG	150	94	103	17,440*
THB8000	8,000	175.0	40.0	8.0 FLG	168	98	105	19,900*
TURBO-DRI Heat-of-Compression Dryers								
THC1200 A	1,204	-	-	3.0 FLG	109	70	101	6,000
THC1900 A	1,880	-	-	4.0 FLG	111	78	105	9,900
THC2700 A	2,708	-	-	4.0 FLG	126	104	109	10,075
THC3500 A	3,500	-	-	6.0 FLG	131	108	112	12,200
THC4800 A	4,814	-	-	6.0 FLG	140	112	115	17,300
THC6000 A	6,093	-	-	6.0 FLG	174	118	118	20,275
THC7500 A	7,522	-	-	8.0 FLG	196	148	127	23,300
THC9100 A	9,101	-	-	8.0 FLG	193	156	130	29,500
THC10800 A	10,832	-	-	8.0 FLG	215	160	134	33,300
THC12700 A	12,712	-	-	8.0 FLG	218	166	134	37,300
THC14700 A	14,743	-	-	10.0 FLG	242	172	140	42,800

*Dryer weight shown does not include desiccant. Desiccant shipped separately on these models. Dimensions and weights are approximate.

For applications with flow requirements outside of the values listed in the table, please contact your local representative for additional information.

Heatless, Externally Heated and Heated Blower Dryers
Performance data obtained and presented in accordance with CAGI Standard 200.
Pressure dew point at 100 psig inlet air pressure, 100 °F air inlet temperature, 100 °F ambient temperature.

Heat-of-Compression Dryers
S = Standard model
A = Advanced model, equipped with dew point monitor and stripping cycle. Data in table above is representative of "A" models, contact your local representative for data specific to the "S" models.
HOC capacity based on 100 psig operating pressure, 225° F compressor discharge temperature and 85° F cooling water temperature.

We Build Solutions

We do more than build products at Ingersoll Rand. We bring our customers unmatched experience in designing comprehensive compressed air systems that cover virtually any need.

Systems and Support to Keep You Productive

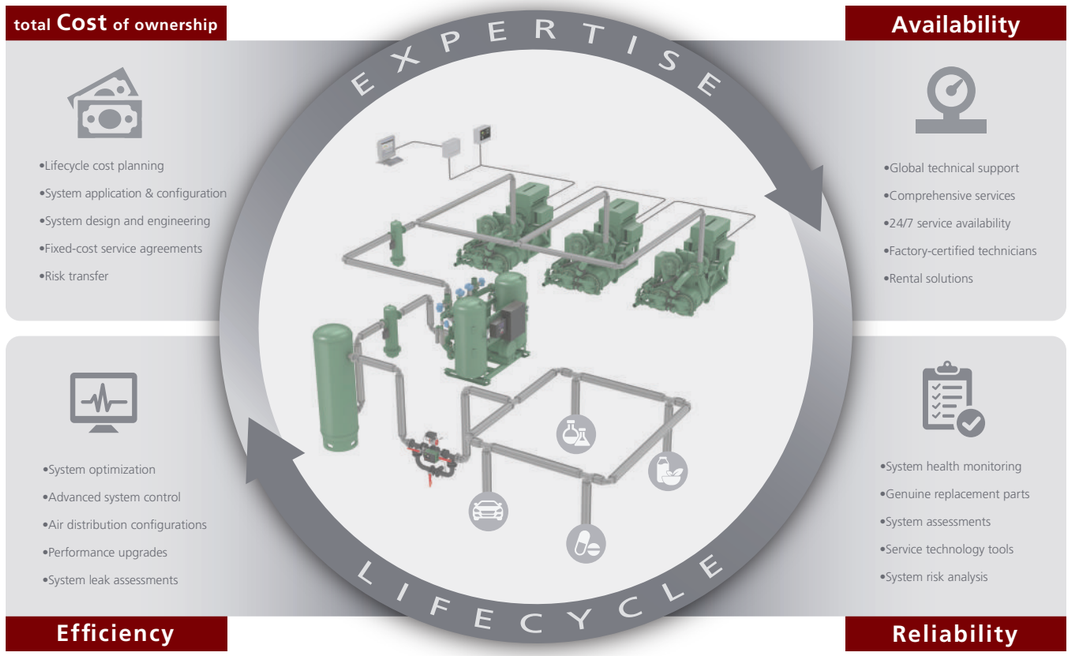
Who better to design, build and maintain today's process air solutions at peak efficiency than one of the companies that leads the world in building them? Ingersoll Rand solves process and business problems to help you succeed in today's global economy through enhanced reliability, energy efficiency and productivity that lower your total cost of ownership. As your fourth utility, compressed air should be as dependable as your electric, water and gas services.

Efficient Solutions Save Energy and Our Environment

As part of Ingersoll Rand's commitment to increase energy efficiency and reduce climate impact from its product portfolio, TURBO-DRI uses long-life, environmentally friendly, activated alumina desiccant. This uniformly sized, spherically shaped desiccant is exceptionally effective at removing moisture, and is non-toxic, inert, highly resistant to shock and abrasion, and has very low dust content.

Your Trusted Partner in Compressed Air

Optimize your total **Cost** of ownership, while maximizing **Availability**, **Reliability** and **Efficiency** throughout the life of your compressed air system with our Lifecycle CARE services.



Design • Install • Commission • Operate • Maintain • Extend

PackageCARE™...eliminate the inconvenience

No matter where your facility is located, Ingersoll Rand is committed to serving you 24 hours a day, seven days a week, and is available to support you with innovative, cost-effective service solutions that will keep you running at peak performance. Let Ingersoll Rand handle the pressures and responsibilities of owning a compressed air system with our signature service contract.

PackageCARE™

Ingersoll Rand (NYSE:IR) advances the quality of life by creating comfortable, sustainable and efficient environments. Our people and our family of brands—including Club Car®, Ingersoll Rand®, Thermo King® and Trane®—work together to enhance the quality and comfort of air in homes and buildings; transport and protect food and perishables; and increase industrial productivity and efficiency. We are a $13 billion global business committed to a world of sustainable progress and enduring results.

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