

HeatSink™

Cycling Refrigerated
Compressed Air Dryers



- *Energy-Saving Cycling Operation*
- *Patented Multi-Layer Heat Exchanger*
- *Advanced Digital Dryer Control*

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Compressed Air Dryers

- **Energy-Saving Operation**
- **Multi-Layer Heat Exchanger**
- **Includes Precooler/Reheater**
- **38°F Dew Point Air Quality**
- **Digital Dryer Control**
- **Low Pressure Drop**
- **Convenient Installation**

Compressed air contains moisture and other contaminants that must be removed to avoid damage to pneumatic valves, tools and instruments. Failure to remove these impurities can compromise critical manufacturing and finishing processes and cause product waste and production downtime.

When installed in a typical facility where fluctuations in compressed air usage, variations in shift duration or periods of low ambient temperature are common, a HeatSink™ Cycling Refrigerated Dryer saves money during periods of low demand.



Designed For Efficiency, Reliability and Performance

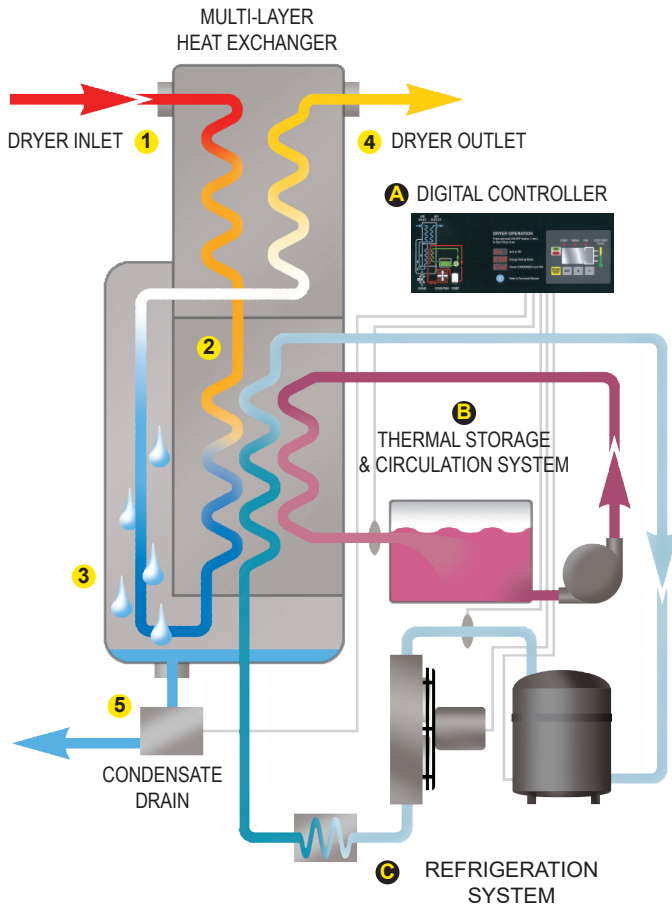
ZEKS brings together more than fifty years of compressed air treatment knowledge and the latest dryer technology to make HeatSink™ dryers the energy-efficient alternative to non-cycling dryers. ZEKS has engineered the HSJ Series to include a multi-layer heat exchanger that integrates a Precooler/Reheater, Chiller, Evaporator and Moisture Separator for high operating efficiency. This all-aluminum module, patented by ZEKS, has low pressure drop to positively affect a user's entire compressed air system. The dryer's refrigeration system, which uses environmentally friendly and very efficient R134A refrigerant, provides long service life and delivers consistent 38°F dew point air quality in all operating conditions.

HeatSink™ Dryer Operation

Maximum Efficiency and Energy Savings

HeatSink™ dryers consume only the electrical energy needed to meet actual air treatment demand:

- 1 Hot, moisture-laden air from the air compressor passes through a prefilter then flows into the dryer, entering the Precooler Section of the MULTI-LAYER HEAT EXCHANGER where it is cooled by dry outgoing air.
 - 2 The air temperature is further reduced in the Chiller/Evaporator Section to a degree at which moisture in the air condenses to form droplets.
 - 3 The cold air then flows through the Separator Section where water droplets and contaminants are separated from it and collected.
 - 4 The air, now dry, passes through the Reheater Section where hot incoming air raises the outgoing air temperature to prevent pipe sweating after the air flows out of the dryer to downstream processes.
 - 5 Water and contaminants that accumulate in the Separator Section are automatically discharged from the dryer through the CONDENSATE DRAIN.
- A** The DIGITAL CONTROLLER coordinates and displays dryer operation and status as well as alarm/fault conditions and provides access to the CONDENSATE DRAIN functions.
- B** The THERMAL STORAGE & CIRCULATION SYSTEM stores cool energy in the thermal mass fluid to maximize thermal efficiency.
- C** The REFRIGERATION SYSTEM operates only as needed to meet demand.



Energy Savings - The Cycling Advantage

ZEKS invented cycling air dryers that incorporate a refrigeration system to cool a thermal mass which is used to cool the compressed air that flows through the dryer. Cooling causes the moisture and contaminants present in the air to condense, forming droplets that can be removed from the air stream. Because HeatSink™ dryers have the capacity to store cool energy in a thermal mass fluid, the refrigeration system automatically cycles off during periods of low demand while the dryer continues to remove moisture and contaminants from the air stream. This cycling operation results in consumption of only the electricity needed to meet actual air treatment demand, typically far less energy than that required for the equivalent non-cycling dryer with a refrigeration system that operates continuously.

Digitally Controlled Operation

HeatSink™ dryers are controlled automatically through a panel-mounted digital controller with illuminated display:

- Display of dryer operating status
- Energy savings indication
- Condensate Drain timing/test interface
- Visual indication of Faults/Drain Open/Condenser Fan operation



The controller, which maximizes the energy savings potential of the dryer, is remote alarm-ready.

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HSJ Series: 10-150 SCFM

Standard Features

- **Multi-Layer Heat Exchanger** - All-aluminum; Integrated functionality includes Precooler/Reheater; Low pressure drop
- **Advanced Digital Controller** - Automatic dryer control; Drain setting; Performance and fault display
- **Fully Hermetic Refrigeration Compressor** - No maintenance; Long service life
- **R134A Refrigerant** - Highly efficient; Small charge volume; Environmentally friendly
- **Efficient Refrigeration Condenser** - Sized to maintain efficiency in all conditions
- **Timed Solenoid Condensate Drain** - Time adjustment through the digital controller to match conditions
- **Filterstop/Strainer Drain Connection** - Protects drain from debris; Cleanable
- **Compact Footprint/Light Weight** - Minimizes installation and shipping costs
- **Simple Electrical Connection** - Standard 3-prong plug with ground†
- **Galvanized Internal Structure** - Corrosion resistant for long service life
- **Powder Coated Enclosure** - Durable finish for long life

Optional Features

- **3-Valve Bypass** - Isolates dryer from compressed air system
- **External Gauge Package** - Display of pressure and temperature - field installed
- **No-Air Loss Drain** (75-150HSJ only) - Conserves compressed air energy - field installed; externally mounted

† Dryer requires a dedicated electrical circuit.

Technical Specifications

MODEL	CAPACITY SCFM*	OVERALL DIMENSIONS			SHIP WT. LBS.	IN/OUT AIR CONNECT SIZE	DRAIN FLEX LINE	OPERATING KW**	REFRIG. TYPE	MAX. WORKING PRESSURE	VOLTAGES
		W IN.	D IN.	H IN.							
10HSJ	10	19.7	15.2	26.5	85	1/2" FPT	1/4" OD	.35	R134A	200 PSI	115/1/60
18HSJ	18	19.7	15.2	26.5	85	1/2" FPT	1/4" OD	.43	R134A	200 PSI	
24HSJ	24	19.7	15.2	26.5	90	1/2" FPT	1/4" OD	.45	R134A	200 PSI	
35HSJ	35	19.7	15.2	26.5	95	1/2" FPT	1/4" OD	.53	R134A	200 PSI	
50HSJ	50	19.7	15.2	26.5	105	3/4" FPT	1/4" OD	.68	R134A	200 PSI	
75HSJ	75	22.4	16.6	30.4	150	1" FPT	1/4" OD	.94	R134A	200 PSI	115/1/60 230/1/60
100HSJ	100	22.4	16.6	30.4	155	1" FPT	1/4" OD	.98	R134A	200 PSI	
125HSJ	125	22.4	16.6	30.4	160	1" FPT	1/4" OD	1.10	R134A	200 PSI	
150HSJ	150	19.6	30.2	37.5	263	1 1/2" NPT	1/4" OD	1.66	R134A	200 PSI	

* Performance based on ISO 7183, Table 2, Option A2. (100 psig inlet air pressure; 100°F inlet air temperature; 100°F ambient air temperature)

** Average kilowatts per hour of dryer operation at full rated capacity.

NEMA 1 electrical, standard

ZEKS HeatSink™ compressed air dryers are not designed, intended or approved for breathing air applications.

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