

Cycling Refrigerated Air Dryers

Secotec™

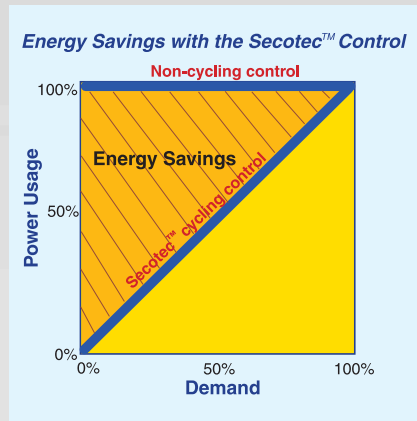
20 - 520 cfm @ 100 psig



Why Do We Need Dry Air?

As atmospheric air is drawn into a compressor, water vapor is introduced as well. During compression, air heats up and is able to hold more water vapor.

Mechanical separators and filters are used to remove liquid water, yet air remains saturated with water vapor. As air travels through the piping, the vapor cools, condenses and may pass into production tools and equipment. Using a Secotec™ refrigerated dryer eliminates vapor before it condenses and affects your system.



Why Secotec™?

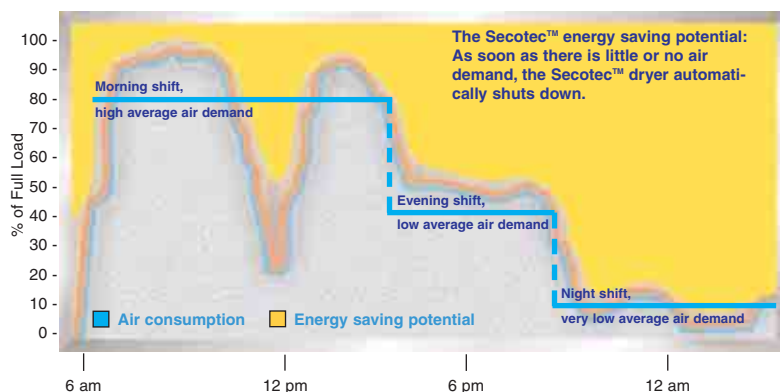
The Secotec™ cycling control provides maximum efficiency by operating the refrigerant compressor only when necessary. This is achieved by utilizing a thermal storage medium. The refrigerant system cools the medium to a certain temperature, cuts off, and then stands by until the temperature rises to a predetermined level before switching on again. Therefore, the dryer is not wasting energy when the demand is low. A non-cycling dryer continues to operate even during low demand periods.

Energy Savings

The Secotec™ cycling control provides the greatest savings during low demand periods such as evening and night shift.

As shown in the chart, significant savings are possible on a daily basis. During breaks, low demand periods, and

Air Consumption Over a 24-Hour Period



shut down, the Secotec™ dryers save energy because the refrigerant system is shut off.

For example, comparing the TD 61 cycling dryer with a non-cycling dryer, the TD 61 (at 240 cfm) in single shift operation (8760 service hours, of which only 1000 hours are under full load) saves \$930/yr. at \$.08/kWhr.

Operation

Warm compressed air entering the dryer is initially cooled in the air-to-air heat exchanger by the cold compressed air leaving the evaporator. This allows for greater efficiency by reducing the heat load on the refrigeration system.



The air is cooled to the dew point temperature in the lower part of the heat exchanger by a refrigerant* circuit with a thermal storage medium. The condensate formed by the cooling action is separated from the compressed air by a multi-stage, stainless steel, maintenance-free separating system. The automatic condensate drain reliably drains the water without wasting valuable compressed air. The chilled air leaving the evaporator is reheated in the upper part of the heat exchanger before exiting the outlet. Reheating the compressed air eliminates pipe sweating down-stream.

* All Kaeser Secotec dryers use environmentally-friendly R 134a refrigerant.

Convenient Features

Dryer Construction

All components such as heat exchangers, refrigerant circuit, condensate separator, and drain are conveniently accessible from above when the panels are removed. Service connections are provided at the suction and discharge lines to check the refrigerant circuit. The dryer construction and component arrangement minimize the required floor space.



5 Separator

Highly efficient multistage, stainless steel separator uses centrifugal force and a stainless steel wire mesh to separate 99.9% of liquid water.



4 Electronic Demand Drain

Once condensate fills the collection chamber, a level sensor opens a diaphragm valve to drain the condensate. The valve then shuts before costly air can escape.

1 Easy and Reliable Controls

Control panel includes dew point indicator, on/off switch, and LED's indicating "power on" (active thermal storage) and "compressor on." LED's for "high dew point" are standard on models TE 91 and up and drain alarm LED is standard on TE 121 and TE141.

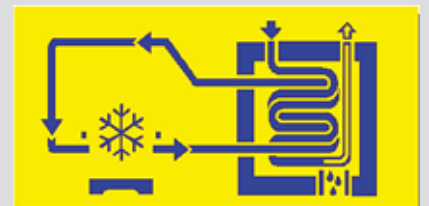


2 Heat Exchangers

Air-to-air and air-to-refrigerant heat exchangers are fitted with oversized copper tubing that provides low pressure drop. The smooth inner walls of the tubing also prevent fouling.

Three-year warranty on heat exchanger.

Two-year warranty on all other parts and labor.



3 Thermal Storage

Solid media acts as storage for efficient cooling and eliminates the possibility of leakage.

Specifications

| Model | Flow rate @ 100 psig (scfm) | Pressure Drop (psid) | Max. Working Pressure (psig) | HP* | Voltage | Connection Size (in.) | Drain Conn. Size (in.) | Dimensions H x W x D (in.) | Weight (lb.) | | | |
|--------|-----------------------------|----------------------|------------------------------|------|----------|-----------------------|------------------------|----------------------------|--------------|--|--|------|
| TA 5 | 20 | 0.8 | 230 | 0.4 | 115-1-60 | 3/4 | 1/4 | 30 x 20 x 25 | 176 | | | |
| TA 8 | 30 | 1.8 | | 0.4 | | | | | | | | |
| TA 11 | 45 | 2.3 | | 0.6 | | | | | | | | |
| TB 19 | 70 | 2.6 | | 0.86 | | | | | | | | |
| TB 26 | 95 | 2.6 | | 1.10 | 115-1-60 | 1 | | 38 x 22 x 25 | 255 | | | |
| TC 31 | 115 | 2.3 | | 1.32 | | | | | | | | |
| TC 36 | 135 | 2.9 | | 1.40 | 230-1-60 | 1-1/4 | 3/8 | 40 x 26 x 31 | 342 | | | |
| TC 44 | 170 | 1.5 | | 1.68 | 230-1-60 | | | | 440 | | | |
| TD 51 | 200 | 1.5 | | 1.60 | 230-3-60 | 1-1/2 | | 47 x 30 x 44 | 553 | | | |
| TD 61 | 240 | 1.5 | | 1.93 | 460-3-60 | | | | 632 | | | |
| TD 76 | 285 | 1.5 | | 2.50 | 460-3-60 | 2 | | 62 x 42 x 59 | 1256 | | | |
| TE 91 | 360 | 1.5 | | 1.93 | | | | | | | | |
| TE 121 | 460 | 2.3 | | 2.50 | | | | | 1/2 | | | 1455 |
| TE 141 | 520 | 3.4 | | 2.70 | | | | | | | | |

Nominal flows for Secotec dryers are based on fully saturated air at 100 psig and 100°F, with ambient air temperature of 100°F. To correct the rated capacity of a Secotec dryer for actual conditions, find the capacity correction factor corresponding to inlet and ambient conditions. Multiply these factors to find your "overall" correction factor and multiply the dryer's rated capacity by the overall factor to determine the dryer's capacity at your operating conditions. Select the smallest dryer having enough capacity to meet your requirement.

Specifications table based on: 100°F air inlet, 100 psig, 100°F ambient temperature, and 38°F pdp

- Minimum ambient temperature: 40°F
- Maximum ambient temperature: 110°F
- Maximum inlet temperature: 130°F
- Connection locations vary. Consult factory for dimensional drawing
- * Compressor Horsepower

Temperature and pressure capacity correction factors for Secotec dryers

| Pressure (psig) | Temperature (°F) | | | | | | | | | | |
|-----------------|------------------|------|------|------|------|------|------|------|------|------|------|
| | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 |
| 20 | 1.03 | 0.89 | 0.79 | 0.70 | 0.67 | 0.64 | 0.53 | 0.48 | 0.45 | 0.40 | 0.33 |
| 40 | 1.19 | 1.02 | 0.91 | 0.81 | 0.77 | 0.74 | 0.60 | 0.55 | 0.51 | 0.46 | 0.38 |
| 60 | 1.37 | 1.18 | 1.05 | 0.93 | 0.88 | 0.85 | 0.69 | 0.64 | 0.59 | 0.53 | 0.44 |
| 75 | 1.47 | 1.26 | 1.12 | 1.00 | 0.95 | 0.91 | 0.75 | 0.68 | 0.64 | 0.56 | 0.47 |
| 100 | 1.61 | 1.39 | 1.23 | 1.10 | 1.04 | 1.00 | 0.82 | 0.75 | 0.70 | 0.62 | 0.52 |
| 110 | 1.65 | 1.42 | 1.26 | 1.12 | 1.06 | 1.02 | 0.84 | 0.77 | 0.71 | 0.63 | 0.53 |
| 125 | 1.72 | 1.48 | 1.31 | 1.17 | 1.11 | 1.06 | 0.87 | 0.80 | 0.74 | 0.66 | 0.55 |
| 145 | 1.77 | 1.53 | 1.36 | 1.21 | 1.14 | 1.10 | 0.90 | 0.83 | 0.77 | 0.68 | 0.57 |
| 175 | 1.85 | 1.60 | 1.42 | 1.26 | 1.20 | 1.15 | 0.94 | 0.86 | 0.80 | 0.71 | 0.60 |
| 200 | 1.92 | 1.65 | 1.47 | 1.31 | 1.24 | 1.19 | 0.98 | 0.90 | 0.83 | 0.74 | 0.62 |
| 230 | 1.99 | 1.71 | 1.52 | 1.36 | 1.29 | 1.23 | 1.01 | 0.93 | 0.86 | 0.77 | 0.64 |

Ambient air capacity correction factors for Secotec dryers

| Factor | Ambient Air Temperature (°F) | | | | | | | |
|--------|------------------------------|------|------|------|------|------|------|------|
| | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 |
| | 1.15 | 1.12 | 1.09 | 1.06 | 1.03 | 1.00 | 0.97 | 0.94 |

Specifications are subject to change without notice.

KAESER COMPRESSORS

Built for a lifetime.™

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Certified Management Systems



The Air Systems Specialist

With over 85 years of experience, Kaeser is the air systems specialist. Our extensive 100,000 square foot facility allows us to provide unequalled product availability. With service centers nationwide and our 24-hour emergency parts guarantee, Kaeser customers can rely on the best after-sales support in the industry. Kaeser stands committed to providing the highest quality air system for your specific compressed air needs.