KAESER COMPRESSORS

Built for a lifetime.™

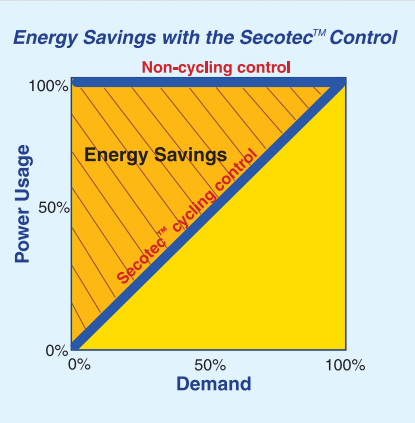
Cycling Refrigerated Air Dryers

Secotec™

20 - 885 cfm

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. Refrigerated dryers condense water vapor and remove the condensed liquid from the air system.



Why Secotec™?

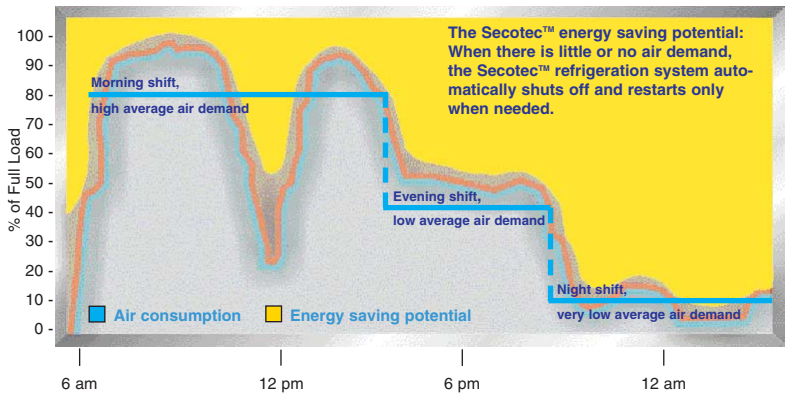
The Secotec™ cycling control provides maximum efficiency by operating the refrigerant compressor only when necessary. This is achieved by utilizing a thermal storage medium. The refrigerant system cools the medium to a certain temperature, cuts off, and then stands by until the temperature rises to a 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 shut down, the Secotec™ dryers save energy because the refrigerant system is shut off.

In a three-shift operation with 100%, 75% and 50% loads, respectively, and power costs of $.08 per kWh, the Secotec TF203 costs under $1500 per year to operate. A similarly sized non-cycling dryer costs nearly $2400. The Secotec solution's 40% power savings pays back in 3 years.

Air Consumption Over a 24-Hour Period



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 increases

efficiency by reducing the heat load on the refrigeration system.

The air is then cooled to the dew point temperature by a refrigerant* circuit with a thermal storage medium. The chilled air leaving the evaporator is reheated in the air-to-air heat exchanger before exiting the dryer. Reheating the compressed air recovers energy and eliminates pipe sweating down-stream.

The condensate formed by the cooling action is collected by a multi-stage, stainless steel moisture separator. Then an automatic condensate drain reliably removes the water without wasting valuable compressed air.

** 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 when the side 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 floor space required for installation.

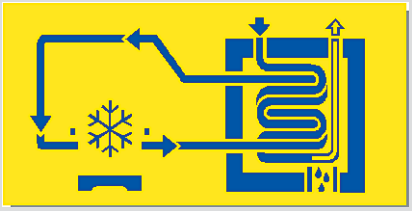
1 Easy and Reliable Controls

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 thru TF 251.

2 Heat Exchangers

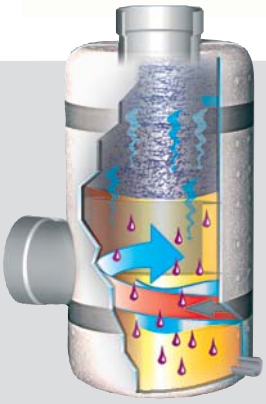
Air-to-air and thermal storage-to-refrigerant heat exchangers are fitted with oversized copper tubing that provides low pressure drop. The smooth inner walls of the tubing also prevent fouling.

Three-year warranty on heat exchangers.
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.



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.

Specifications

Model	Rated Capacity* (scfm)	Power Supply (V / Ph / Hz)	Inlet / Outlet Connections (in.)	Dimensions W x D x H (in.)	Weight (lb.)
TA 5	20	115 / 1 / 60	1/2	19 x 25 x 30	175
TA 8	30		3/4	19 x 25 x 34	176
TA 11	45				
TB 19	70		1	22 x 25 x 40	255
TB 26	95	115 / 1 / 60 230 / 1 / 60			
TC 31	115		1-1/4	26 x 31 x 45	342
TC 36	135				375
TC 44	170	230 / 1 / 60		26 x 37 x 45	440
TD 51	200	230 / 3 / 60 460 / 3 / 60	1-1/2	31 x 44 x 51	553
TD 61	240				632
TD 76	285		2	31 x 44 x 52	
TE 91	360	460 / 3 / 60		42 x 59 x 62	1256
TE 121	460				1455
TE 141	520				
TF 173	600		2-1/2	42 x 70 x 83	1455
TF 203	720		3		1874
TF 251	885				1874

***Rated capacity:** Based on compressed air saturated at 100°F and 100 psig and operation in a 100°F ambient.

- Maximum inlet temperature: 130°F
- Maximum/minimum ambient air temperature:
  Air-cooled dryers: 110/40°F
  Water-cooled dryers: 130/40°F
- Maximum allowable working pressure: 230 psig

Specifications are subject to change without notice.

Selecting the Proper Dryer

To correct Rated Capacity for actual operating conditions, refer to "Capacity Correction Factors for Operating Conditions" and "Capacity Correction Factors for Ambient Temperature". Find the capacity correction factors corresponding to the inlet and ambient conditions. Multiply these factors to find the "overall" capacity correction factor, then multiply any dryer's rated capacity by the overall correction factor to determine its capacity at your operating conditions. Capacity correction factors for conditions not shown may be interpolated.

Capacity Correction Factors for Operating Conditions

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

Capacity Correction Factors for Ambient Temperature

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

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Corporate Headquarters:
PO Box 946
Fredericksburg, Virginia 22404
Phone 540-898-5500
Fax 540-898-5520
www.kaeser.com

Certified Management Systems
ISO 9001:2008 Quality 14001:2004 Environmental

ENERGY STAR PARTNER

Member of COMPRESSED AIR AND GAS INSTITUTE CAGI www.cagi.org

The Air Systems Specialist

With over 90 years of experience, Kaeser is the air systems specialist. Our extensive 120,000 square foot facility allows us to provide unequaled 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.