KAESER COMPRESSORS

Built for a lifetime.™

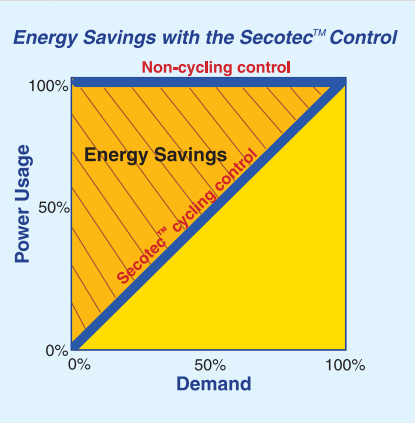
Cycling Refrigerated Air Dryers

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™?

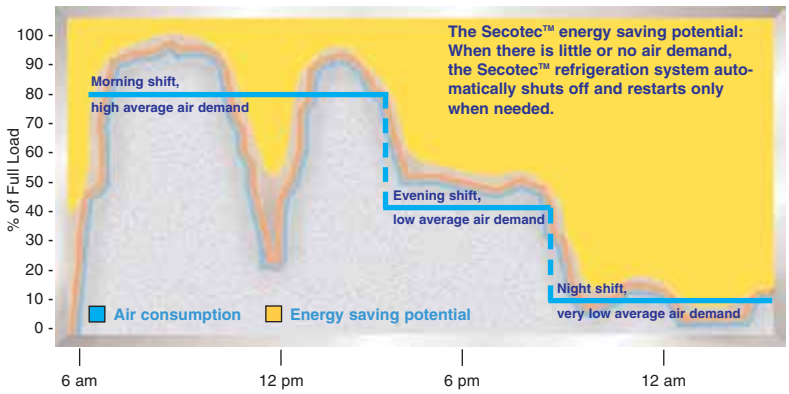
The Secotec™ cycling control provides maximum efficiency by operating the refrigerant compressor only when necessary. This is achieved by utilizing a thermal storage medium. The refrigerant system cools the medium to a certain temperature, cuts off, and then stands by until the temperature rises to a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

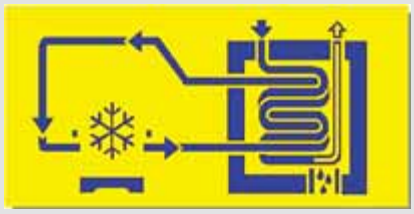
1 Easy and Reliable Controls

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	Flow rate @ 100 psig (scfm)	Pressure Drop (psid)	Max. Working Pressure (psig)	Voltage	Connection Size (in.)	Drain Conn. Size (in.)	Dimensions H x W x D (in.)	Weight (lb.)
TA 5	20	0.8	230	115/1/60	3/4	1/4	30 x 20 x 25	175
TA 8	30	1.8				3/8	30 x 19 x 25	176
TA 11	45	2.3						
TB 19	70	2.6			1		38 x 22 x 25	255
TB 26	95	2.6		115/1/60 230/1/60				
TC 31	115	2.3			1-1/4		40 x 26 x 32	342
TC 36	135	2.9						375
TC 44	170	1.5		230/1/60				440
TD 51	200	1.5		230/3/60 460/3/60	1-1/2		47 x 30 x 46	553
TD 61	240	1.5						632
TD 76	285	1.5			2			
TE 91	360	1.5		460/3/60			62 x 42 x 59	1256
TE 121	460	2.3				1/2		1455
TE 141	520	3.4						
TF 173	600	2.5			2-1/2	Two 1/4	75 x 42 x 70	1755
TF 203	720	2.3			3			2152
TF 251	885	2.8						2174

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

* Kilowatt

Specifications are subject to change without notice.

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

	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

KAESER COMPRESSORS

Built for a lifetime.™

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

Certified Management Systems

Member of CAGI Compressed Air and Gas Institute www.cagi.org

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 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.

USSECOTEC