KAESER COMPRESSORS®

Built for a lifetime.

Cycling Refrigerated Air Dryers

Secotec™

20 - 3070 cfm

kaeser.com

Secotec™ Cycling Dryers

Energy efficient compressed air drying

Secotec refrigerated dryers reliably remove the moisture from compressed air while minimizing energy consumption thanks to their innovative cycling control. They feature premium quality components to ensure a long and dependable service life. The broad range of available models makes it possible to install the most suitable dryer for virtually any application.

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.

Smart controls for ongoing energy savings

The Secotec cycling control significantly reduces energy consumption compared to conventional systems with continuous control. The refrigeration circuit is activated only when cooling is actually required, saving you money year after year.

Premium components

Secotec dryers are designed and built for maximum reliability. High quality, generously sized components (e.g. the condenser) ensure optimum flow at all times even at high operating temperatures and guarantee a long and dependable service life. Details such as using smooth bore copper piping in the refrigeration circuit also contribute to exceptional system efficiency.

Service-friendly

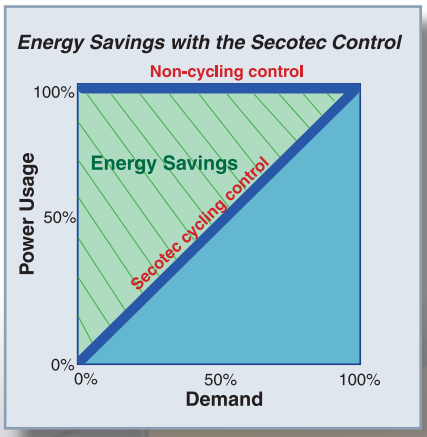
From the ground up, these dryers have been designed with the user in mind. Fewer wearing parts and using premium quality materials ensure reduced maintenance requirements, longer service intervals, and extended service life. Service points are accessed by easily removed panels, simplifying maintenance and lowering down time.


KAESER
SECOTEC TF 340

Energy Savings

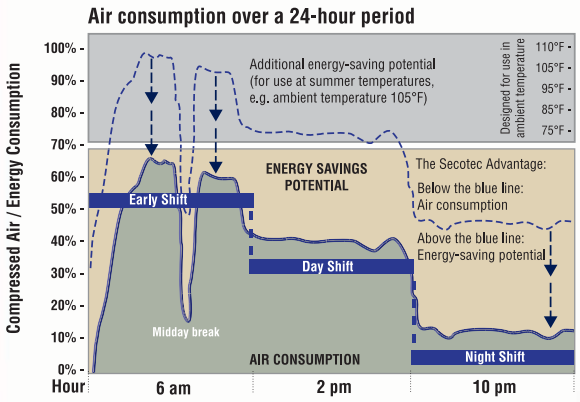
Why Secotec?

The Secotec cycling control reduces electrical consumption by operating the refrigerant compressor only when necessary. This is achieved by utilizing thermal storage. The refrigerant system cools the medium, cuts off, and then stands by until the temperature rises to a predetermined level before switching on again. The integrated thermal mass ensures that the system is always ready for operation.



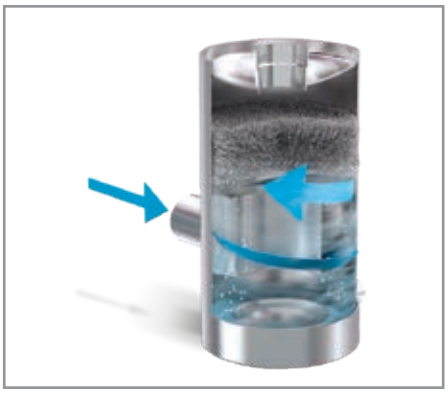
Energy Savings

The Secotec cycling control provides the greatest savings during low demand periods such as evening and night shifts. As shown in the chart, significant savings are possible on a daily basis. During breaks, low demand periods, and shut down, Secotec dryers save energy because the refrigerant system is shut off.



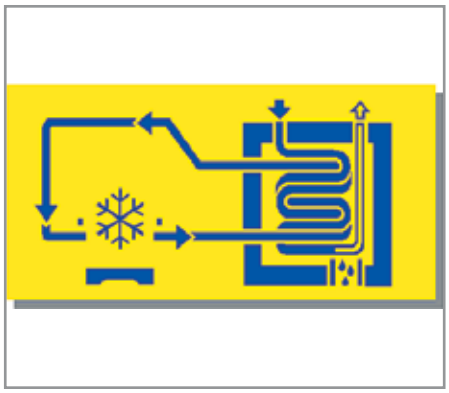
In a three-shift operation with 100%, 75% and 50% loads respectively, and power costs of $.08 per kWh, the Secotec TF 340 costs under $2100 per year to operate. A similarly sized non-cycling dryer costs nearly $4300. The Secotec solution's 50% power savings pays back in less than 2 years.

Smart Features for Energy Efficient Operation



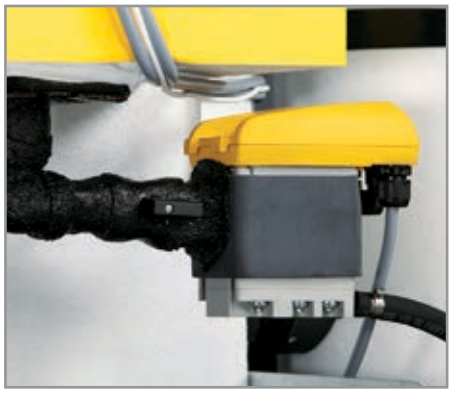
Separator

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



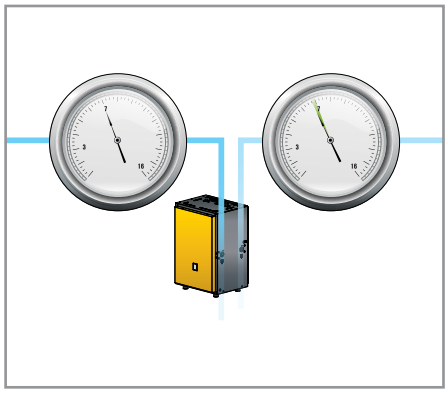
Heat exchangers

Generously sized air-to-air and thermal storage-to-refrigerant heat exchangers provide low pressure drop. Smooth inner walls prevent fouling.



Electronic Demand Drain

The Eco-Drain automatically removes condensate as it is produced without wasting costly compressed air. Includes “push-to-test” button to confirm drain operation.



Minimal pressure drop

From inlet to outlet, Secotec dryers are designed to ensure minimal pressure drop, saving additional energy since the maximum system pressure is reduced.

User-friendly Integrated Controllers

Control panel includes dew point indicator, on/off switch, and LED’s indicating “power on” (active thermal storage) and “compressor on.” TE, TF, and TG models include Sigma Control Smart, a micro-processor based controller which controls the thermal

storage process. It has an alarm and service message memory, as well as remote on/off control capability. A Modbus TCP interface for connecting to a master control system is also included.

Easy to Maintain

Maintenance-friendly design

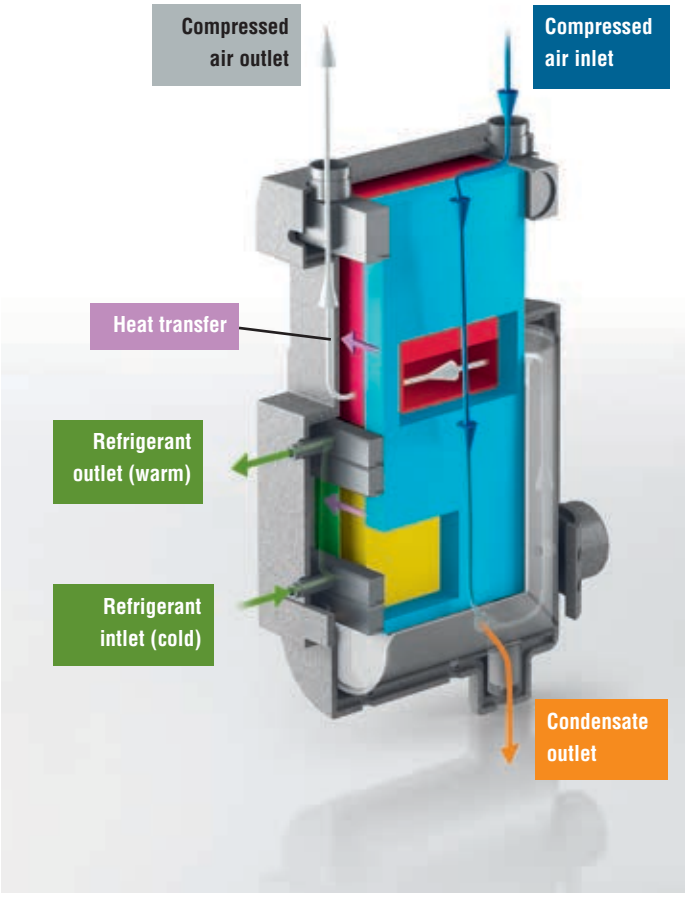
All components such as heat exchangers, refrigerant circuit, condensate separator, and drain are conveniently accessible when the side panels are removed. Service connections are provided at the suction and discharge lines to check the refrigerant circuit easily. The dryer construction and component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

SecoPack LS

Thermal Storage

Thermal storage (a “heat sink”) is required to allow for refrigerant compressor off time. For small and midsize Secotecs, a granular medium is ideal for this, however, large capacity dryers will benefit more from a medium that can change phase from a liquid state to solid state and back within the typical evaporator temperature range of a refrigerated dryer.

Secotec TE, TF, and TG models are equipped with the innovative SecoPack LS heat exchanger system. Its latent heat thermal mass is composed of a phase changing material. Compressed air warms the material until its melting point (thermal mass discharge), absorbing melting heat in the process. This is significantly greater than the amount of heat that it can absorb based on its normal specific heat capacity (without phase changing properties). The latent heat thermal mass in the Secotec TE, TF, and TG dryers therefore has a dramatically higher thermal density and is capable of delivering the same performance, yet requires 98% less thermal mass material than conventional thermal mass systems. The end result is stable pressure dew points and a dramatically reduced unit footprint.



Technical Specifications

Model	Rated Capacity [1] (scfm)	Power Supply (V / Ph / Hz)	Full Load Power Consumption (kW)	Inlet / Outlet Connections (in.)	Dimensions W x D x H (in.)	Weight (lb.)	Maximum Working Pressure (psig)	Maximum Ambient Temp (°F)
TA 5	20	115 / 1 / 60	0.33	3/4 NPT	19 x 25 x 31	175	232	110
TA 8	30					176		
TA 11	45		0.43			156		
TB 19	70	115 / 1 / 60 230 / 1 / 60	0.62	1 NPT	22 x 26 x 38	255		
TB 26	95		0.82					
TC 31	115	115 / 1 / 60	1.03	1-1/4 NPT	26 x 32 x 40	342		
TC 36	135	230 / 1 / 60	1.22			375		
TC 44	170		1.45			440		
TD 51	200	208 / 3 / 60 230 / 3 / 60 460 / 3 / 60 575 / 3 / 60	1.32	1-1/2 NPT	30 x 46 x 47	553		
TD 61	240		1.50					
TD 76	285		2.10	2 NPT		633		
TE 102	325		1.50	2 NPT	28 x 41 x 65	485		110 / 120 [3]
TE 122	410		1.90			496		
TE 142	470		2.20			529		
TF 174 [2]	520		2.49	2-1/2 FLG	33 x 49 x 79	750		
TF 230 [2]	670		3.37	3 FLG		795		
TF 280 [2]	900		3.70			850		
TF 340 [2]	1060		4.23			915		
TG 450 [2]	1340	460 / 3 / 60	5.10	4 FLG	41 x 66 x 84	1405		120
TG 520 [2]	1550		5.99			1450		
TG 650 [2]	1910		7.18	6 FLG		1555	188	
TG 780 [2]	2330		9.02			1545		
TG 980 [2]	3070		14.90			1685		

[1] **Rated capacity:** Based on compressed air saturated at 100°F and 100 psig and operation in a 100°F ambient.
[2] Available water-cooled
[3] Water-cooled or High Ambient option

- Maximum inlet temperature: 130°F
- Maximum/minimum ambient air temperature:
  Air-cooled dryers: 110/40°F
  Water-cooled dryers: 120/40°F

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

Inlet Pressure (psig)	Inlet Temperature (°F)											
	75	80	85	90	95	100	105	110	115	120	125	130
60	0.96				0.86	0.77	0.67	0.60	0.53	0.47	0.41	0.37
80	1.11				0.99	0.89	0.78	0.69	0.61	0.54	0.48	0.42
100	1.25				1.12	1.00	0.88	0.78	0.69	0.61	0.53	0.48
115	1.32				1.18	1.05	0.93	0.82	0.73	0.64	0.57	0.50
120	1.33				1.19	1.06	0.94	0.83	0.73	0.65	0.57	0.51
125	1.35				1.21	1.08	0.95	0.84	0.75	0.66	0.58	0.52
140	1.39				1.25	1.11	0.98	0.87	0.77	0.68	0.60	0.53
160	1.46				1.31	1.16	1.02	0.91	0.80	0.71	0.63	0.56
180	1.51				1.35	1.21	1.06	0.94	0.83	0.73	0.65	0.58
200	1.55				1.39	1.24	1.09	0.97	0.85	0.75	0.67	0.59
230	1.59				1.43	1.27	1.12	0.99	0.88	0.77	0.68	0.61

Capacity Correction Factors for Ambient Temperature

	Ambient Air Temperature (°F)									
	75	80	85	90	95	100	105	110	115	120
Factor	1.09				1.05	1.00	0.96	0.92	0.87	0.81

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