KAESER COMPRESSORS®

Built for a lifetime.

Energy-Saving Refrigerated Dryers

Secotec TA to TD Series

20 to 285 cfm

kaeser.com

Superior performance with low energy costs

The Secotec name has long been synonymous with high-quality Kaeser refrigeration dryers built for industrial duty, maximum reliability, and minimal overall life-cycle costs. Secotec refrigerated dryers in the TA to TD series are used for drying compressed air down to a pressure dew point of 38°F, thanks to their highly efficient thermal mass control, which can be tailored to individual needs for outstanding savings. A generously-dimensioned thermal mass ensures low-wear operation and a stable pressure dew point.

Energy savings

Secotec series refrigerated dryers feature very low energy consumption. With energy-saving control, the thermal mass can store excess cooling capacity until it is needed, enabling later drying without any power consumption – which is highly beneficial during partial load operation. The quick-response heat exchanger system ensures stable pressure dew points at all times, which in turn delivers significant potential energy savings in partial load operation and during periods of downtime.

Easy to maintain

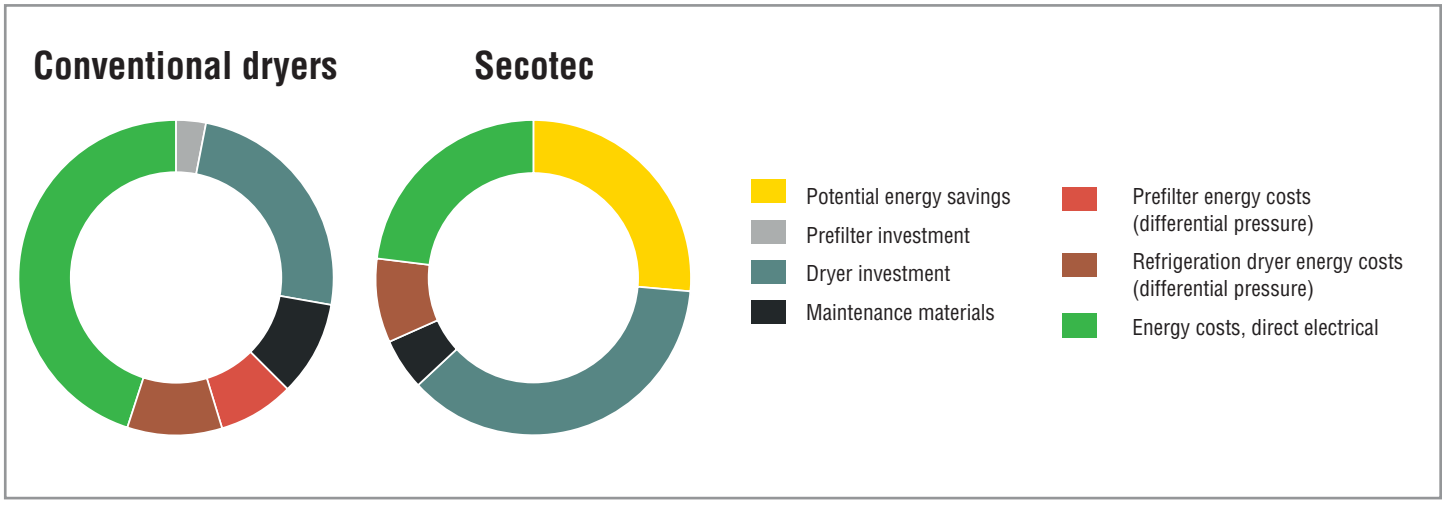
Secotec refrigerated dryers need little maintenance, but when service is needed, their design enables easy access to all internal serviceable components. Minimal service requirements and accessibility reduce service costs.

Superior drying performance

The generously-dimensioned stainless steel condenser and durable refrigerant circuit enables reliable performance in ambient temperatures up to +110°F with low material-load, thanks to the high-performance thermal mass. These features, combined with Eco-Drain condensate drain (models TA 8 and larger) provide reliable condensate removal in all load phases, enabling a stable pressure dew point.

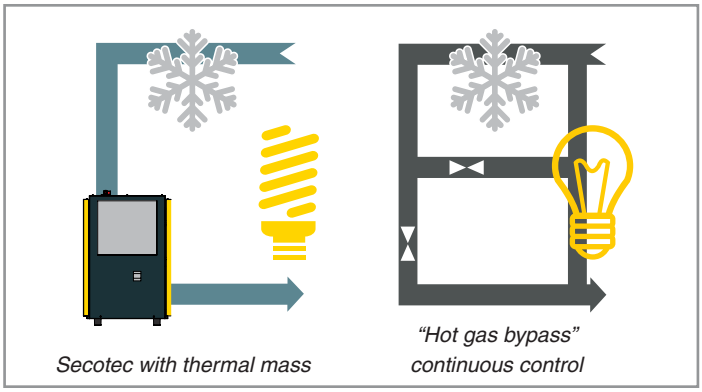
Reduce life-cycle costs

The Secotec's' combination of easy maintenance, low energy consumption and reliability result in extremely low life-cycle costs. Thanks to these three factors, a typical Secotec can reduce dryer energy usage by 50% and save 25% in total life-cycle costs compared to conventional refrigerated dryers.



Packed with energy saving features

Kaeser's decades of experience in compressed air system design have led to refinements that allow Secotec refrigerated dryers to achieve exceptional energy efficiency – across the entire load range.



Secotec with thermal mass

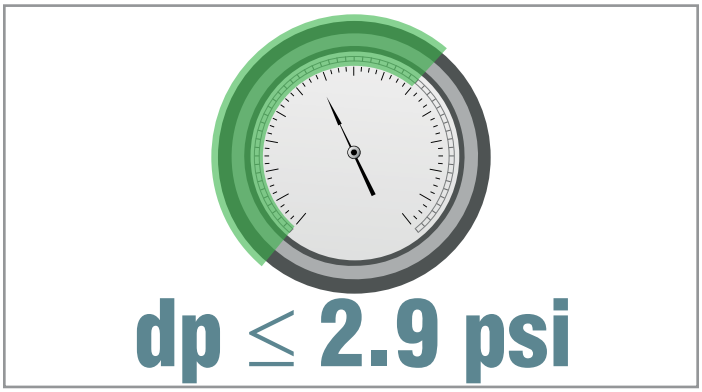
"Hot gas bypass" continuous control

Secotec control

The Secotec thermal mass control significantly reduces energy consumption compared to conventional systems with continuous (e.g. hot gas bypass) control. The refrigeration circuit is activated only when cooling is actually required.

Efficient Secotec solid thermal mass

The heart of every Secotec refrigerated dryer is a thermal mass with exceptionally high capacity. The entire air/refrigerant heat exchanger is embedded in a storage medium and encased in efficient heat protection.



Minimal differential pressure

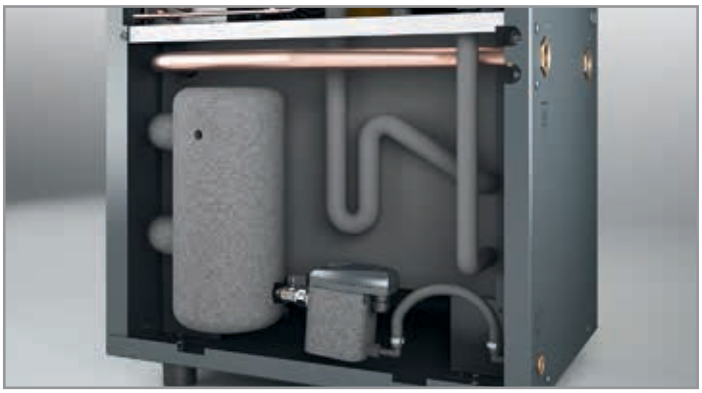
Generously-dimensioned flow cross-sections within the heat exchanger and internal compressed air lines reduce differential pressure across the dryer.

No prefilter

With inlet piping unaffected by corrosion, Secotec dryers do not require a prefilter. This lowers investment and maintenance costs, and it eliminates another source of pressure drop in your system.

Ultimate reliability and effectiveness

We create challenging operating conditions in our advanced climate testing facilities, leading to the advanced design of Secotec refrigerated dryers that ensure maximum reliability at all times without compromising performance.



Liquid separation

Kaeser's corrosion-free stainless steel condensate separators ensure reliable condensate separation to provide dependable compressed air drying even at partial load.

Upsized condenser

Secotec dryers feature generously-dimensioned heat exchanger surfaces, resulting in significantly higher performance compared to other dryers. This allows them to deal with higher temperature and contamination loads while reliably delivering dry compressed air.

Dependable condensate removal

Integrated Eco-Drain condensate drains operate without the pressure losses and clogging issues typical in mechanical float drains. They are also insulated to protect against exterior condensate formation.

Future-proof refrigerant

The refrigerant circuit in Secotec refrigerated dryers is charged with R-513A. This advanced formula refrigerant ensures maximum efficiency with significantly lower global warming potential (GWP) than commonly used refrigerants that are expected to be phased out.

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.

Easily accessible

The Secotec refrigerated dryer's enclosure covers are quick and easy to remove, enabling straightforward service access. This makes service faster and lowers service costs.

Service-friendly condenser

The condenser is arranged on the front side of the unit, where it is exposed to the air stream without an upstream mesh barrier. Any dirt accumulation on this component can therefore be easily detected and effectively removed, ensuring energy efficiency and pressure dew point stability over the long-term.

Easy-to-test refrigeration circuit

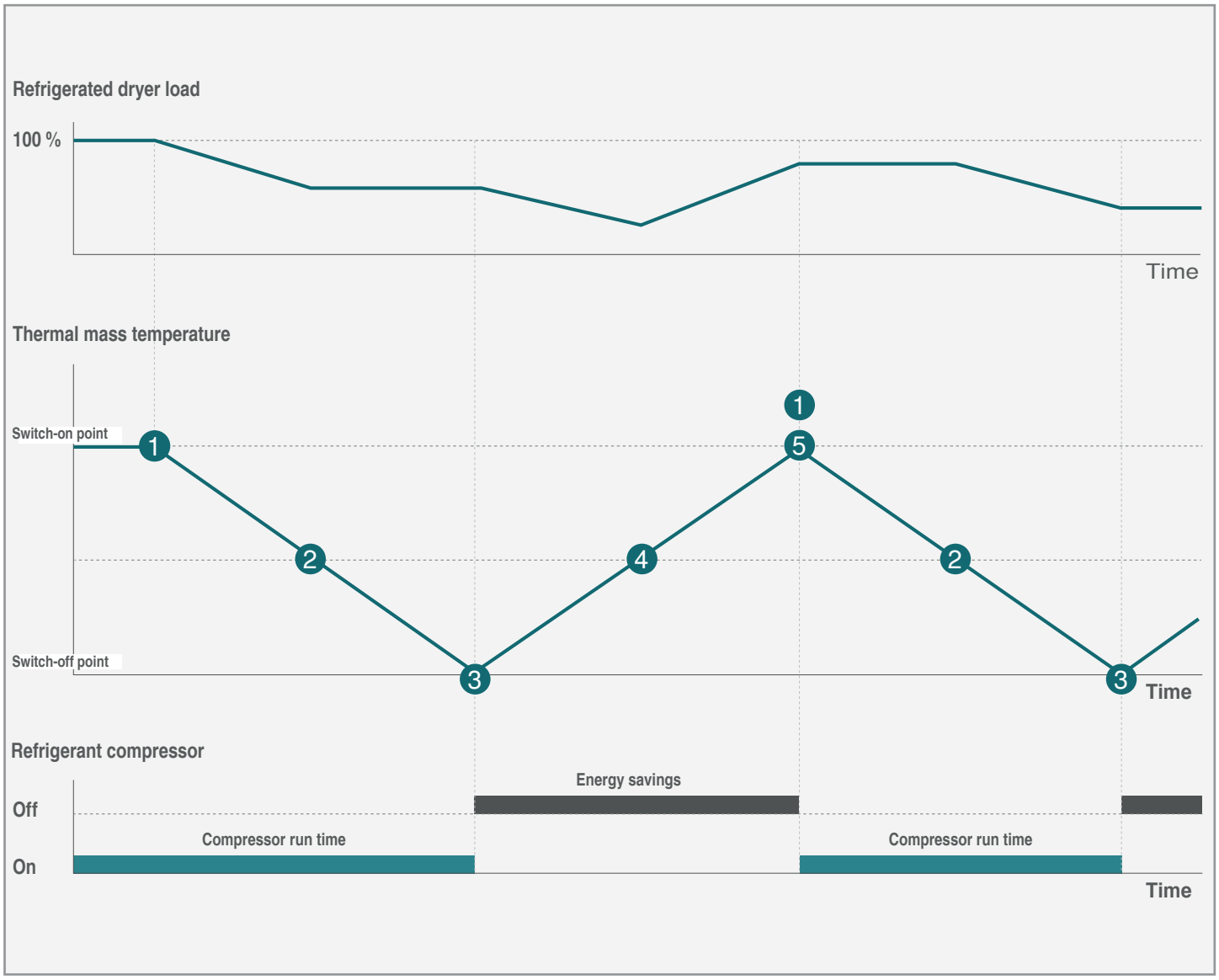
The Secotec design enables Kaeser service technicians and factory trained service providers to easily check the operation of the cooling circuit using the convenient intake and pressure-side service valves.

Simple auto drain service

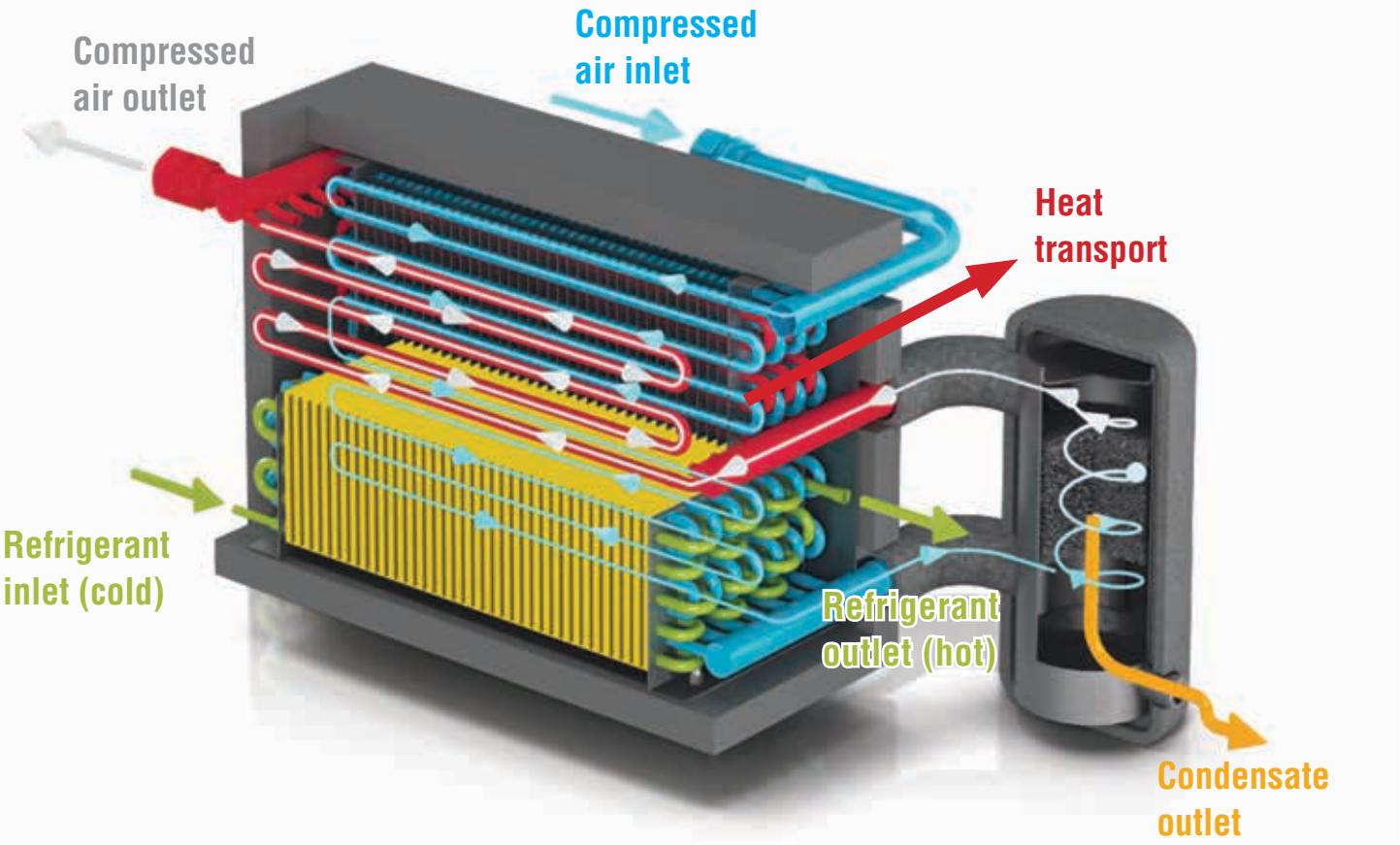
Eco-Drains are easily checked for proper operation and any service items can be replaced without the need to replace the seal. The condensate drain and service unit are 100% factory-tested for leaks and proper functioning before leaving the plant.

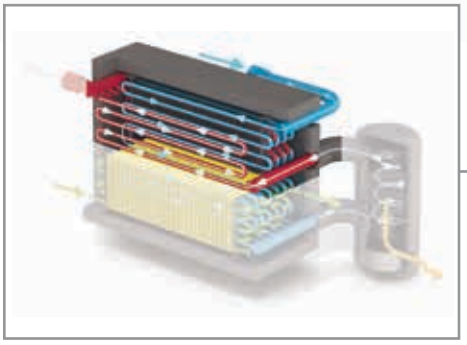
Secotec thermal mass control

Partial load control with powerful thermal mass

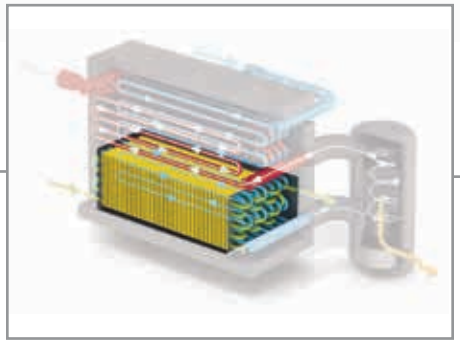


When the refrigerant compressor runs, it provides cooling for both compressed air drying (1) and excess cooling capacity to chill the thermal storage unit as the load decreases (2) until the compressor switch-off point (3). As the load increases, the stored cooling continues to dry compressed air (4) until the thermal storage media warms to the point when the refrigerant compressor is needed to maintain cooling (5). The cycle repeats while minimizing energy usage and maintaining the pressure dew point within acceptable limits.

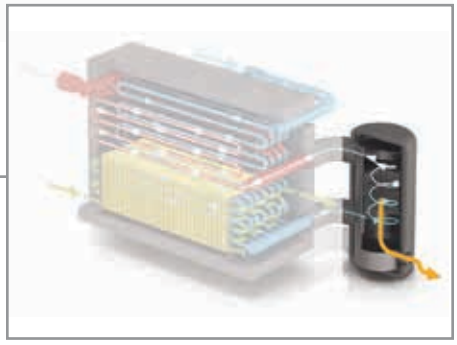




Air/air heat exchanger



Air/refrigerant heat exchanger with thermal mass (yellow area)



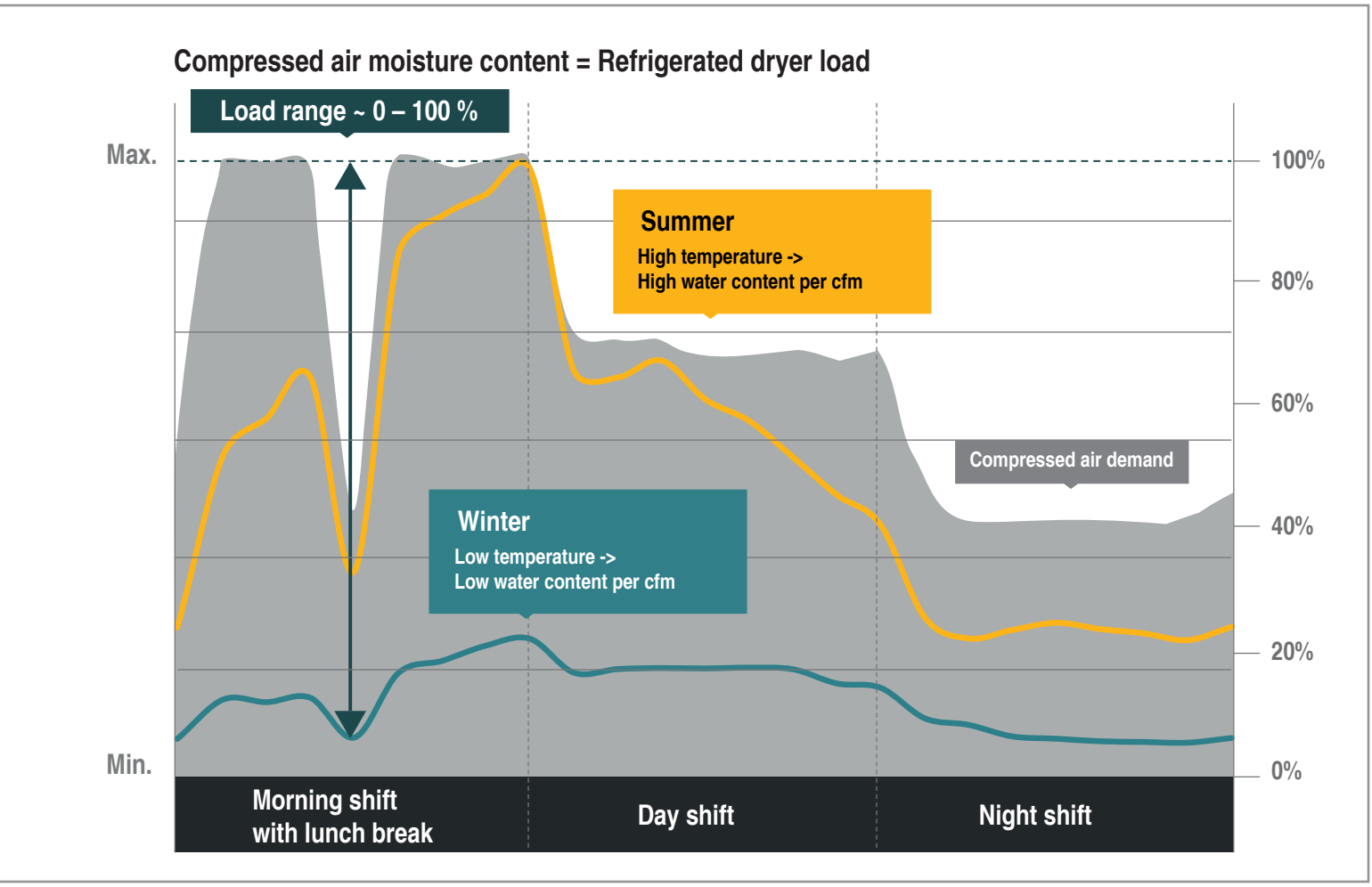
Condensate separator

Secotec solid thermal mass

High capacity thermal storage for energy efficient drying

In TA to TD Secotec dryers the entire air/refrigerant heat exchanger is embedded within the thermal storage module to optimize the drying, and the whole assembly is well insulated to sustain the cooling effect of the thermal mass. Compared to conventional refrigeration dryers, the refrigerant compressors and fan motor in Secotec units have much lower run time — saving energy and extending service life. During partial load operation, the smooth copper pipe transfers excess cooling capacity to the thermal storage granules located in the intermediate spaces of the piped-fin heat exchanger, where it can be fed back into the smooth copper pipes of the compressed air circuit as needed. The end results are low energy consumption, stable pressure dew point and low-wear operation.

The key to perfect refrigerated drying



Secotec – Savings for all seasons

The load on a refrigerated dryer depends not only on the volume of compressed air to be dried (grey area), but more importantly, on how much water the incoming compressed air contains. This volume of water (moisture) increases as the temperature rises, so the load on refrigerated dryers increases dramatically when ambient temperatures are high, such as during the summer (yellow/orange curve). Lower temperatures during the winter (teal blue curve) reduce the load on refrigerated dryers accordingly.

Since the Secotec thermal mass control ensures energy is only used as needed across this entire load range, users benefit from exceptional savings. The Secotec's additional reserve capacity maintains a stable pressure dew point throughout seasonal and operational fluctuations.


KAESER

Secotec TA to TD series

Technical specifications

Model	Rated Capacity [1] (scfm)	Power Supply (V / Ph / Hz)	Power Consumption According to ISO 7183 Opt A2 (kW)	Inlet / Outlet Connections (in.)	Dimensions W x D x H (in.)	Weight (lb.)	Maximum Working Pressure (psig)
TA 5	20	115 / 1 / 60	0.30	3/4 NPT	19 x 25 x 31	154	232
TA 8	30		0.37			176	
TA 11	45		0.45			187	
TB 19	74	115 / 1 / 60 230 / 1 / 60	0.60 0.52	1 NPT	22 x 26 x 38	238	
TB 26	90	115 / 1 / 60 230 / 1 / 60	0.75 0.82			256	
TC 31	113	115 / 1 / 60 230 / 1 / 60	0.97 1.12	1-1/4 NPT	26 x 32 x 40	342	
TC 36	138	115 / 1 / 60 230 / 1 / 60	1.04 1.19			375	
TC 44	166	230 / 1 / 60	1.34			441	
TD 51	200	230 / 3 / 60 460 / 3 / 60	1.34	1-1/2 NPT	30 x 46 x 47	553	
TD 61	240	230 / 3 / 60 460 / 3 / 60	1.67				
TD 76	285	230 / 3 / 60 460 / 3 / 60	2.05 2.32	2 NPT		633	

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*
- *Minimum/maximum ambient air temperature:*
  Air-cooled dryers: 37°F / 110°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.

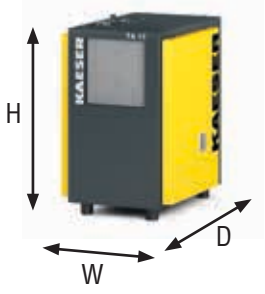
Capacity Correction Factors for Operating Conditions

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

TA Series



TB Series

TC Series

TD Series

The world is our home

As one of the world's largest compressed air systems providers and compressor manufacturers, Kaeser Compressors is represented throughout the world by a comprehensive network of branches, subsidiary companies and factory trained partners.

With innovative products and services, Kaeser Compressors' experienced consultants and engineers help customers to enhance their competitive edge by working in close partnership to develop progressive system concepts that continuously push the boundaries of performance and compressed air efficiency. Every Kaeser customer benefits from the decades of knowledge and experience gained from hundreds of thousands of installations worldwide and over ten thousand formal compressed air system audits.

These advantages, coupled with Kaeser's worldwide service organization, ensure that our compressed air products and systems deliver superior performance with maximum uptime.

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Built for a lifetime.

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