



The Technology  
of Modern Filtration

Filters Designed  
and Built for  
Today's Industries



Compressed air and gas is essential in many industries for its use in equipment operation, instrumentation, refrigeration and a variety of industrial processes. Clean, oil-free air or gas is a requirement to reduce maintenance and replacement costs. Unfortunately, even atmospheric air contains objectionable contaminants, in both solid and liquid forms, that must be removed prior to the use of the compressed gas. Additionally, in many compressor and vacuum packages, oil is intentionally introduced as a coolant and sealant which must also be taken out prior to air use.

KELTEC Technolab manufactures a wide range of air-oil separators for air compressors and vacuum packages, as well as air inlet, oil and coalescing type filters, that when used together, provide the ultimate in system operation and protection.

KELTEC Technolab oil separators operate on the familiar principles of fine liquid droplet coalescence in a flowing gas stream. These processes have been refined and tailored into packages that meet the special high performance and physical requirements of the air/gas compressor industry.

Regardless of style (conventional, pleated or deep), KELTEC Technolab oil separators will provide for performance as shown here:

**Pressure drop (at load):** 2-3 psi / .20 bar

**Pressure resistance (against collapse):** 70 psi / 5.0 bar

**Efficiency (remaining oil in gas stream):** 2-3 ppm / 2-3 mg/m<sup>3</sup>

**Operating temperature:** (standard) 180° F / 82° C to 230° F / 110° C  
(Higher temperature models available)

**Materials:** A. Media—both wet laid and high loft solely or in combination  
B. Bonding compound—polyurethane or epoxy  
C. Body components—corrosion resistant steel

**Service life:** Dependent mainly upon the cleanliness of the oil and gas being compressed as well as the initial amount of oil contained in the gas stream; several thousands of hours of operation are possible in a well-functioning compressor or vacuum system.



The standard conventional oil separator is the original design for the removal of oil aerosols from the compressed air stream. This element design consists of a specific amount of a uniform grade of borosilicate glass fibers, “wrapped” onto a support tube. When properly sized to the cfm/m<sup>3</sup>/min flowrate and corresponding operating pressure of the machine, this element will provide consistent performance according to the following data:

**A. Pressure drop (initial)**

2–3 psi / .20 bar

**B. Pressure resistance**

70 psi / 5 bar

**C. Efficiency**

2–3 ppm / 2–3mg/m<sup>3</sup> residual oil

One common method of increasing the capacity of a given sized air-oil separator is through the use of pleated filter media. In this case, the filter media is processed through a machine whereby the normally flat surface is “pleated” or induced into a wave-like appearance. A separator configured in this manner can then be suited for approximately 2x the air flow capacity, as that of a standard air-oil separator, manufactured in the standard, wrapped method.





Another common method of obtaining increased air flow capacity from a given size air-oil separator is to manufacture the element in so-called “deep filter” construction. This form of separator uses as many as three different grades of borosilicate glass, wrapped onto the support tube in larger than normal amounts. The finished product then achieves increased airflow capacity very similar to that of the pleated air-oil separator, while at the same time maintaining low initial pressure drop and residual oil content. Field testing of this element has demonstrated an improvement in oil separation especially in high “challenge rate” applications, in which more oil aerosol is contained in the compressed air than is normal.



This method of oil separation consists of a deep bed type oil separator element, placed inside of a pressure resistant body, or “can” similar to that of traditional oil filters. Extremely easy to replace in comparison to standard oil-separators which are enclosed in a pressurized tank, this element design is somewhat limited in application due to restrictions of air flow capacity.



Special inorganic materials are required for the construction of properly functioning oil separators in refrigeration and natural gas compressor packages. In these units, gases other than air (such as Freon, ammonia or natural gas) are being compressed and mixed with lubricating oil which still must be removed prior to use of the gas. These types of gases, along with ancillary materials often contained in natural gas, are not suitable for typical oil separator construction, and care must be given to the proper selection of all materials in order to ensure proper functioning of the separator.



In the compressor system, the oil itself must be filtered on a regular cycle so as to remove contaminants that may enter the compressor and damage the unit. This is accomplished through the installation of a lube oil filter, either in cartridge, or spin-on form, which then ensures that all of the oil is cleaned as it moves through the filter.

Filtering in 5–25 micron range (depending upon application), it is again, the depositing of oil-borne contaminants over time (similar to the oil-separator), that causes the oil filter to continually increase in differential pressure to a point at which it must be replaced in order to continue proper filtration of the compressor oil.





Designed to remove the oil particles necessary for lubrication from the airstream produced by power generating equipment such as gas turbines and centrifugal compressors.



Construction : extremely efficient combination of high loft type fiberglass for optimal coalescence  
Carbon steel support tubes and end plate  
Positive seal o ring or gasket configuration  
99.97% efficiency on atomized oil particles measuring .30 micron in size  
Low pressure drop of 2-3 psi / .20 bar



Low pressure / downstream compressed air OIL MIST

## ELIMINATORS



Designed to removed any residual oil or contaminant remaining in the compressed air downstream of the compressor and filtration system. Extremely low pressure drop of .5-1 psi providing for energy savings and essentially oil free air.

Construction : extremely efficient combination of high loft type fiberglass for optimal coalescence (99.97% @ .30 micron)

Max operating temperature 200 F

Max operating pressure 260 psi

Carbon steel support tubes and end plate  
Positive seal o ring or gasket configurations  
99.97% efficiency on atomized oil particles measuring .30 micron in size

Low pressure drop of 2-3 psi / .20 bar



# KELTEC Technolab

## GUARANTEE

KELTEC Technolab guarantees that the filters which they produce are free of manufacturing defects in workmanship or materials. If the filters are used as intended by the equipment manufacturer and KELTEC Technolab, with the proper service intervals, KELTEC Technolab will guarantee the performance of their filters. Should a filter failure be the result of a manufacturing defect of KELTEC Technolab, it will be replaced and the customer returned to the original condition that existed prior to the use of the subject filter. Such claims must be reported to KELTEC Technolab within 30 days of observation, and KELTEC Technolab reserves the right to inspect and test the filter in question.

*Ed Kaiser, President  
KELTEC Technolab, Inc.*



Achieving ISO 9001:2008 certification is an important milestone in KELTEC Technolab's history. It demonstrates KELTEC Technolab's commitment to deliver a high level of products and services to our clients.



KELTEC Technolab compressor filters and oil are suitable replacements for all major competitive interchanges. The technical characteristics of KELTEC Technolab products can be found within this guide. KELTEC Technolab filters have successfully replaced all other major brands of OEM and replacement filters in literally tens of thousands of applications.

KELTEC Technolab guarantees that its filters will meet or exceed the specifications and performance of the OEM, and further, that customers replacing OEM filters with KELTEC Technolab filters will experience no filter-related difficulty.