

COMPRESSOR FILTERS

Designed and Built for Today's Industries



**Industrial
Filters**



**Industrial
Filters**

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Industrial Filters

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 compressed gas. Additionally, in many compressor and vacuum packages, oil is a coolant and sealant which must also be taken out prior to air use.

NAPA Industrial Filters 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.

NAPA Industrial Filters 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), NAPA Industrial Filters 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 bar

Efficiency (remaining oil in gas stream): 2-3 ppm / 2-3 mg/m³

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.



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Conventional Wrap Style **OIL SEPARATORS**



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/m³/min flowrate and corresponding operating pressure of the machine, this element will provide consistent performance according to the following data:

Service Life

The rise in flow resistance and service life primarily depend on the cleanliness of the oil and the quality of the filter. A service life of several thousand hours can be achieved with a well-functioning system.



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Pleated Air-Oil **SEPARATORS**

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.





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Deep Filter **OIL SEPARATORS**



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 graded 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.



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Spin-on Type **OIL SEPARATORS**



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.



Refrigeration & Natural Gas

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OIL SEPARATORS



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 the use of 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.

From the coalescing materials to the sealing methods used, you can be confident in oil separators for refrigeration and natural gas purchased from NAPA Industrial Filters. A wide range of standard sizes are available, as well as a broad capability to produce elements custom-suited for your specific application.



COALESCING Filters

Industrial Filters

FILTERS

Compressed air often must be further filtered so as to meet the exacting needs of the industrial applications for which it is used. This is most effectively done through the use of a downstream coalescing filter, or series of filters. It is a common misconception that “oil-free” air compressors do not require this precaution. However, atmospheric air typically contains a significant amount of water, oil vapour and other contaminants, especially in industrial areas.

Upon compression, therefore, these contaminants are concentrated into the compressed air, whether the machine is “oil-free” or oil-flooded. Accordingly, the use of fine, coalescing filters is essential for both types of compressors, so as to prevent an accumulation of such contaminants in pneumatic machinery.





Additional PRODUCTS

Industrial Filters

NAPA Industrial Filters produces a wide range of additional filter products, including:

- **Air filters for compressors**
- **Air filters for vacuums**
- **Oil separators for vacuums**

Air filters are produced with either resin impregnated cellulose or synthetic polyester filter media, in either plastisol or metal end construction, as well as the latest type, metal-free air intake filters.

Oil separators for vacuum packages are constructed similar to that of the standard oil separators used in air compressors, and thus, will offer the same type of oil removal performance (in the range of 1-3 ppm / 1-3 mg/m³). However, such separators are designed exclusively for flow direction from the outside to the inside of the separator, and are suitable only to a maximum pressure differential (collapse point) of 22 psi / 1.5 bar.





Panel Filter ELEMENTS

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Filters Designed and Built for Today's Industries

NAPA Industrial Filters

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