

Finite's Coalescing Filters Clean Compressed Air Required by Hyperbaric Chambers



Background

Hyperbaric (greater-than normal-air pressure) chambers have long been used to help deep-sea divers avoid or recover from decompression sickness (the “bends”) by placing them in pressurized environments and having them breath 100% oxygen through masks. Hyperbaric oxygen therapy (HBO) is also useful in treating life-threatening infections such as gas gangrene and non-healing wounds in diabetic patients. More recently HBO has been used to treat cancer survivors who have experienced tissue injury caused by cancer radiation treatments.

The hyperbaric chamber offers promising treatment for radiation tissue caused by cancer treatments and nonhealing wounds in diabetic patients.

Case Study

The Hennepin County Medical Center in Minneapolis utilizes three multiplace hyperbaric chambers and one monoplace chamber, performing about 3000 patient treatments each year. Parker's Finite filters are used to remove contaminants in the compressed air lines before the pressurized air reaches the chambers. By utilizing a 3-stage series of coalescing and adsorber filters, this air system meets ISO8573-1 Class 1-4-1 requirements for air cleanliness.

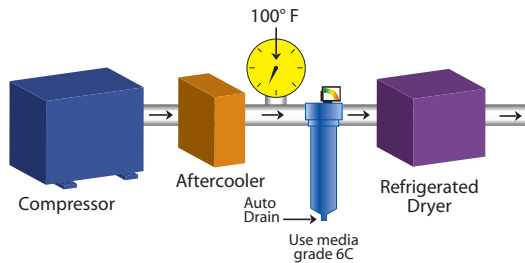
Application

Hyperbaric chambers include monoplace (treat one patient at a time) chambers and multiplace chambers (treat several patients at once). Multiplace chambers also allow physicians or nurses to remain inside the chamber to provide hands-on care throughout the treatment. The required increase in atmospheric pressure in these chambers is created by filling the closed chambers with clean, dry compressed air. Maintaining a clean, contaminant-free air supply to the chambers is critical to the hyperbaric healing process.

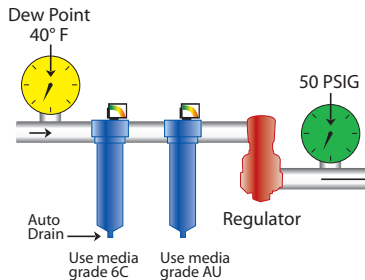


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Compressor Room (Source)
Air Preparation Equipment:



Point-Of-Use
Air Preparation Equipment:



Parker Solution: Finite's Compressed Air and Gas Filters

A coalescing filter is placed after the compressor to protect the refrigerated dryer from contaminants. Further downstream, at the point-of-use area, a grade 6 coalescer is preceded by a grade AU filter. The coalescer removes the remaining oil, water, and particulate contamination from the air stream. The AU filter, a

carbon adsorber, collects hydrocarbons in the air stream. This final stage of filtration removes odors from the air, so they don't enter the hyperbaric chamber. Maintaining a clean, contaminant- and odor-free chamber is critical to the hyperbaric process.

Finite's Compressed Air and Gas Filters: H-Series



Finite's H-Series Specifications

Pressure	Up to 500 PSIG
Port Sizes	1/4" to 3" NPT
Flows	10 to 1600 SCFM at 100 PSIG
Max. Temp.	175° F (450° F option available)
Elements Available	Coalescing, Particulate, and Adsorption Media
Accessories	Optional indicators, gauges, and drains

For more information on this product, please see Finite's Bulletin 1300-993C/USA.

Filter Element Types Used in this Application



Media type C

This coalescing element is made with our special UNI-CAST construction. Composed of an epoxy saturated, borosilicate glass micro-fiber media, this media is used in applications requiring the removal of liquid and particulate contamination. This filter media in our standard grade 6 is 99.97% efficient at 0.01 micron.



Media type AU

This hydrocarbon vapor removal element consists of an ultra-fine grained, highly concentrated, activated carbon sheet media. This media type is used to remove hydrocarbon vapor and is often used to remove the smell or taste of compressor lube oil from breathing air.

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