

Finite's Dual-Stage Compressed Air Filters Protect Air Gauges on Aircraft Transmission Assembly Line



Case Study

A manufacturer of aircraft transmissions and gear assembly bearings utilizes air gauges on the production line. Air supply is produced by two compressors operating through two refrigerated dryers. In each circuit, pipe diameter was reduced from 2" to

1" to accommodate a coalescer and enlarged to 2" immediately following the coalescer. Based on system flow characteristics, the existing coalescer was undersized, allowing compressor oil to continue downstream. This resulted in frequent fouling of the air gauges.



A manufacturer of aircraft transmissions is now protecting their sensitive air gauge with a Finite dual-stage compressed BA-Series air filter. Before this filter was installed, the manufacturer experienced frequent fouling of costly air gauges.



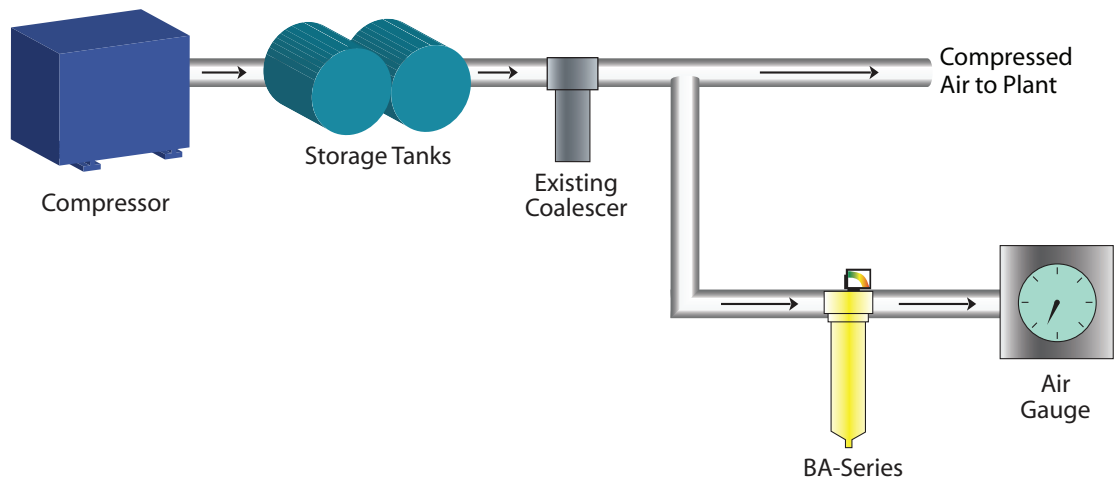
Application

Sources of compressed air contamination include water vapor produced during the compression process, oil aerosols resulting from compressor oil, ambient hydrocarbon aerosols from other plant sources, and solids such as pipe rust and scale. It is necessary to remove these contaminants from the air stream prior to supplying the gauging apparatus.

Background

Air gauges provide a high degree of accuracy and quantitative measurements for thickness, outer diameter, depth and other machined part dimensions. They are ideal for high-volume production operations and can gauge tolerances to within .000025". Measurements are made by metering a flow of compressed air between the machined surface and a reference surface. Contaminants in the compressed air line will foul gauge orifices, requiring the gauge to be sent out for costly cleaning and calibration.





Parker Solution: Finite's Dual-Stage Filters

A point-of-use Finite BAN2L-6CUN was placed in-line, immediately upstream from each air gauge, to remove oil aerosols and vapors. These dual stage filters include a fine grade coalescing

filter in the first stage to remove liquids and aerosols. The second stage includes an activated carbon filter to remove oil vapors. Installing these filters has eliminated costly air gauge failures.

BA-Series Specifications:



Part Number	BAN1L		BAN15L		BAN2L		BAN3S		BAN4S		BAN3L		BAN4L	
Grade	4	6	4	6	4	6	4	6	4	6	4	6	4	6
Max. Rated Flow (SCFM) at 100 PSIG	10	14	12	16	14	18	25	30	35	45	40	60	50	75
Δp (dry)	2.0		2.0		2.0		1.5		2.0		1.5		2.0	
Δp (wet)	4.0		4.0		4.0		3.5		4.0		3.5		4.0	
Port Size (NPT)	1/4"		3/8"		1/2"		3/4"		1"		3/4"		1"	
Pressure	Up to 500 PSIG													
Max. Temp.	175° F													

Note: The differential pressure (Δp) includes the effects of the housing and both elements.

The grades noted above refer to the coalescing element inside the housing. A grade 4 element is 99.995% efficient at 0.01 micron. A grade 6 element is 99.97% efficient at 0.01 micron.

For more information on this product, please see Finite's Bulletin 1300-905/USA.

Contact Information:

Parker Hannifin Corporation
Finite Filter Operation
 500 S Gaspie St.
 Oxford, MI 48371

phone 248 628 6400
 fax 248 628 1850
 finitefilter@parker.com

www.parker.com/finitefilter

© 2008 Parker Hannifin Corporation
 Bulletin 1300-MAP-0021

