

Compressed Air Quality Test Program

Market Application Publication



Background:

There are many requirements throughout industry where clean, dry compressed air is critically important to ensure trouble-free operation of equipment, instrumentation and machinery. Experience shows that air quality has a direct effect on operational costs – costs that can be reduced or eliminated. These costs are typically related to excessive maintenance of equipment, unexpected downtime due to corrosion and quality defects (rework) of finished product. Determining the quality of compressed air supplying critical areas in a facility and installing the proper filtration or dryer equipment could lead to resolving costly operational issues.



Dewpoint Monitor



Particle Counter

Contact Information: Features and benefits:

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- Determine compressed air contaminant levels
- Measure moisture content of compressed air
- Target critical areas for compressed air quality improvement
- Identify the quality of compressed air at critical points of use
- Implement low cost solutions to produce long term, improved efficiencies and reduced operating costs
- Supported by experienced, factory trained Parker Specialists
- Testing is simple, quick, and will not interfere with your production processes



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Application:

More and more Facilities Managers are contracting with consulting firms to perform compressed air quality audits. Contaminates normally found in compressed air are oil, water, rust and pipe scale and are all very aggressive contaminants responsible for unexpected downtime, excessive maintenance, rework of finished product and frequent replacement of production equipment components.

Parker Balston offers a comprehensive air quality test program supported by experienced, factory trained specialists. These individuals are outfitted with a set of two portable instruments. Testing with these highly accurate instruments is simple, quick and will not interfere with your production processes.

One instrument is a particle counter designed to count both 0.5 and 5.0 micron size particles and larger. It will store up to 200 data points and can be later downloaded to an excel spreadsheet for analysis. This will provide a detailed account of the contamination levels in the critical areas throughout the plant.

The other instrument is a dew point analyzer which is designed to indicate dew point levels in compressed air supplies in the range of -40°F to 80°F. The results can be directly downloaded to a PC providing a summary analysis.

Case Study:

A small specialized machining company became concerned with the performance of the refrigerant air dryer servicing the compressed air supply to a coordinate measurement machine. A coordinate measurement machine has at least 26 sensitive air bearings. If oil and moisture contact the air bearings, the .5mm hole in the bottom of the bearing will clog and produce "drag" in the machine. As resistance builds, it causes hysteresis in the measurements producing an inaccurate measurement. Overtime, this will produce a groove on the travel surface at which point a complete rebuild of the machine is necessary.

Parker Balston was called in to perform compressed air quality tests at various locations throughout the facility. The particle counter indicated significant volumes of particles

downstream of a 10 cfm refrigerant air dryer. The dew point analyzer confirmed the refrigerant air dryer was not performing to specification and only reducing the air to a 52°F dew point. This high dew point allows for further condensation to occur and a continuous stream of water droplets being introduced to the CMM. If this were to continue, the average repair cost would approach \$5,000.00 and significant downtime.

A detailed report was produced and the recommendations for solving the contamination issues at each area were provided.

This machine shop now has contaminate free compressed air in the critical areas throughout the facility by simply installing low cost, high efficiency filters. A Balston Membrane Air Dryer was installed to protect the coordinate measurement machine.



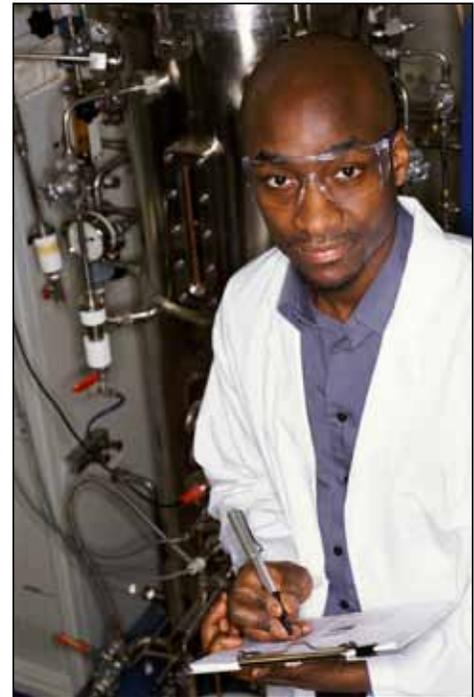
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Parker

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www.parker.com/balston AQTP.10.07



Air Quality Test Program:

Why Do It?

Experience shows that air quality has a direct effect on operational costs - costs that can be reduced or eliminated.

Oil, water, rust and pipescale are all very aggressive contaminants responsible for:

- Unexpected production downtime
- Excessive maintenance
- Rework of product
- Frequent replacement of production equipment components

This test is ideal to validate the potential for moisture contamination and will also confirm mainline dryer performance.

By identifying the quality of compressed air at critical points of use, low cost solutions can be implemented to produce long term, improved efficiencies and reduced operating costs.

What Is It?

The program is supported by experienced, factory trained Parker Specialists who are outfitted with a set of two instruments. Testing with these highly accurate instruments is simple, quick and will not interfere with your production processes.

The Instruments.

One instrument is a particle counter designed to count both liquid and solid particles 0.5 micron in size and larger or 5.0 micron size particles and larger in a present volume of sample compressed air. This is easily connected directly to a compressed air line quick disconnect fitting throughout your facility. The results are stored in the instrument and later downloaded to an excel spreadsheet for analysis. This will provide a detailed account of the contamination levels in the critical areas throughout the plant.

The other instrument is a dewpoint monitor which is designed to indicate dewpoint levels in compressed air supplies down to -40°F and up to 80°F. This device connects directly to quick disconnect fittings and the results can be downloaded directly to a PC providing a summary analysis.

The Results.

After reviewing the detailed reports produced by the instruments, critical areas can be prioritized and targeted for eliminating the contamination with the employment of several different filtration or drying technologies.



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