Balston Compressed Air Dryers

Membrane Air Dryers for Coordinate Measurement Machines

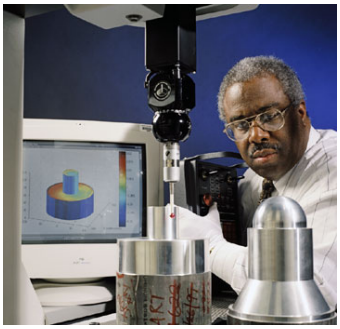
RFM
Resources For Manufacturing, Inc.

Customer Testimonial:

"Before we bought a Balston Membrane Dryer, we required two repairs to our CMM; the first cost $10,000 and the next was over $6,000. In the more than two years since installing the Balston Membrane Dryer we have not needed any repairs."

Rick Nisula
Maintenance Buyer
Smith's Aerospace

Model CM0150-35



Product Features:

- Designed specifically for use with CMMs
- Protects CMMs from costly repairs caused by oil and water
- Guaranteed dewpoint of 35°F
- Requires no electricity resulting in lower operating costs
- Silent operation
- Minimal maintenance required

The Only Way To Dry Compressed Air!

Now there is only one sensible way to dry compressed air! Refrigerant air dryers are becoming a thing of the past. High efficiency, durable membrane technology is quickly becoming the standard for drying compressed air. Parker Hannifin is leading the way with membrane technology that consumes the least amount of compressed air for regeneration.

Balston CMM Air Dryers combine a superior coalescing technology with a proven, innovative membrane system to supply clean, dry compressed air with a constant dewpoint to 35°F (2°C). The Balston CMM Air Dryers are available in 2 different models which can deliver dry, compressed air at flow rates up to 15 SCFM. The Balston Dryers are engineered for easy installation, operation, and long term reliability.

Bulletin CMM
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Parker

ENGINEERING YOUR SUCCESS.

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Problems that cause costly repairs to Coordinate Measurement Machines:

A CMM has 26 highly sensitive air bearings per machine. If oil and moisture are present in the air system supplying the air bearings, the .5mm hole in the bottom of the air bearing will become clogged producing a “drag” in the machine. As the resistance builds, it causes hysteresis in the measurements producing an inaccurate measurement.

If this problem is allowed to continue, the bearing will drag on the aluminum ways and wear a groove in the machine. Once a groove develops, the air bearing will not produce lift if air is leaking out through the groove in the machine ways. To correct the problem, a complete rebuild of the machine at the factory is necessary which can be as costly as purchasing a new machine.

If the problem is caught in time, a service team will be required to come to the facility to repair the machine. The team will remove the bearings and the holes and grooves are cleaned with alcohol. Each bearing is then resurfaced with 600-1500 grit paper. Badly corroded or pitted air bearings are replaced at a cost of $200.00 per bearing. Air hoses are also replaced, and all air passages are cleaned. The machine is then reassembled, and the time-consuming and costly task of recalibrating the machine with the ball bar and a B89 test is performed as the final step in repairing the machine.

How to avoid costly maintenance problems:

Many repairs average upwards of $5,000.00. These costly repairs and downtime can easily be avoided by installing a Balston high efficiency Membrane Air Dryer. The Balston Membrane Air Dryer will provide extremely clean, dry air to a CMM, eliminating the possibility of contamination. The Dryer utilizes patented membrane technology, unsurpassed in performance and durability to dehydrate and purify the compressed air. The Balston Membrane Dryer is the only system designed specifically for CMM applications.

Features and Benefits:

- Designed specifically for use with CMMs
- Protects CMMs from costly repairs caused by oil and water
- Ideal for supplying pure, dry air to Brown & Sharpe, Zeiss, IMS and MTI CMMs
- No heat or vibration generated; prevents inaccurate measurements
- Guaranteed dewpoint of 35°F and contaminate removal to .01 micron
- Offers a reliable, efficient, and economical alternative to PSA and refrigerant dryer technologies
- Wall mount design for simple installation. Membrane module can be installed both vertically and horizontally to accomodate all installations
- Requires no electricity resulting in lower operating costs; silent operation
- Decreases maintenance with no desiccant to change
- Environmentally friendly, using no refrigerants or freons
- Complete system with high efficiency coalescing filters

Balston Compressed Air Dryers
Specifications, Ordering, Flow Rates

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Principal Specifications 35°F (2°C) Pressure Dewpoint (1)

Model Number	CM0080-35	CM0150-35
Flow @ 100 psig Inlet Pressure (scfm)	8	15
Regeneration Flow @ 100 psig (scfm)	1.5	2.7
Min/Max Inlet Air Temp.	40°F/120°F 4°C/49°C	40°F/120°F 4°C/49°C
Min/Max Ambient Air Temp.	40°F/120°F 4°C/49°C	40°F/120°F 4°C/49°C
Min/Max Inlet Pressure	60/150 psig 4.1/10 barg	60/150 psig 4.1/10 barg
Compressed Air Requirements	9.5 scfm	17.7 scfm
Max. Pressure Drop	3 psid	3 psid
Wall Mountable	Yes	Yes
Mechanical Separator Included	F06F18B	F07F38B
Coalescing Prefilters	8002N-0B1-BX 8002N-0A1-BX	8004N-1A1-DX 8004N-0A1-BX
inlet Port Size	1/4" NPT	1/2" NPT
Outlet Port Size	1/4" NPT	1/2" NPT
Electrical Requirements	None	None
Dimensions (cm)	24"L x 11.1"W x 4"D 61cm x 28.2cm x 6.3cm	25"L x 16"W x 4.5"D 63.5cm x 40.6cm x 11.4cm
Shipping Weight	6.68 lbs (3 kg)	14.88 lbs (6.75 kg)

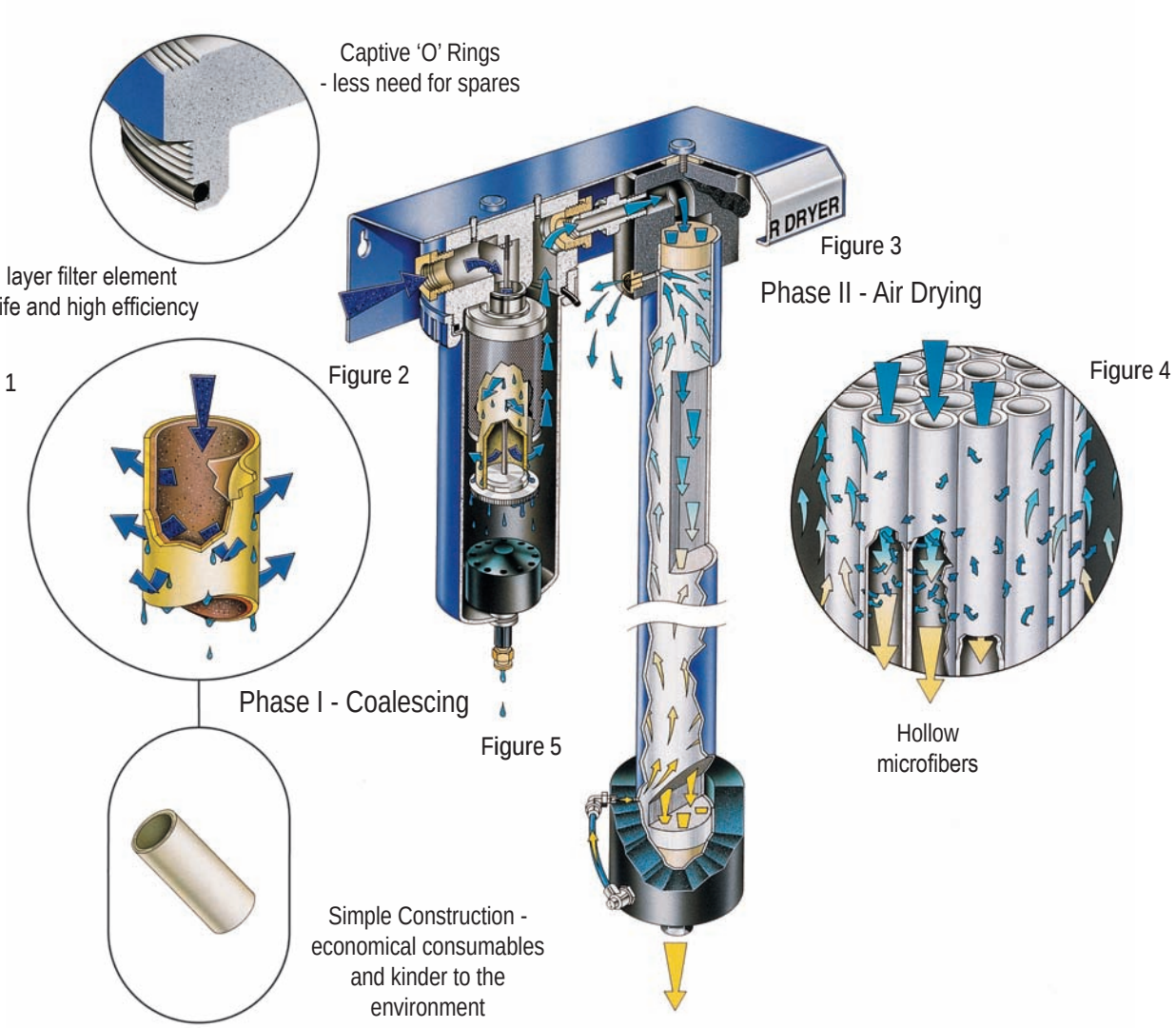
Notes: 1. Dewpoint specified for saturated inlet air at 100°F (38°C) and 100 psig

Ordering Information

For assistance call toll free at 800-343-4048, 8AM to 5PM EST

Model Number	CM0080-35	CM0150-35
Replacement Filter Elements		
1st Stage	PS702	PS802
2nd Stage	100-12-BX	100-12-DX
3rd Stage	---	100-12-BX

Membrane Air Dryer - Principle of Operation



Phase I - Coalescing Filtration

Prior to entering the membrane drying module, the compressed air passes through a high efficiency coalescing filter to remove oil and water droplets and particulate contamination with an efficiency of 99.99% at 0.01 micron. The liquids removed by the filter cartridge continuously drip from the filter cartridge into the bottom of the housing, where they are automatically emptied by an autodrain assembly (see Fig. 1 and Fig. 2). The air leaving the prefilter, therefore, is laden only with water vapor, which will be removed in the membrane module.

Phase II - Drying

The water vapor in the compressed air is removed by the principle of selective permeation through a membrane (see Fig. 3). The membrane module consists of bundles of hollow membrane fibers (see Fig. 4), each permeable only to water vapor. As the compressed air passes through the center of these fibers, water vapor permeates through the walls of the fiber, and dry air exits from the other end of the fiber. A small portion of the dry air (regeneration flow) is redirected along the length of the membrane fiber to carry away the moisture-laden air which surrounds the membrane fibers. The remainder of the dry air is piped to the application.

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