



Balston Compressed Air Membrane Dryers

Bulletin IT



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- Technical innovation
- Premier customer service

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Parker Hannifin Corporation
Filtration and Separation Division
Haverhill, MA

Balston IT Series Membrane Air Dryers



Offer a reliable, efficient, and economical alternative to pressure swing and refrigerant dryer technologies

Require no electricity thus lowering operating costs

Produce +35°F dewpoint, ideal for critical points of use

No moving parts

Silent operation

No desiccant to change

Applications

Food processing and automation
Electronics/Dry Boxes
Coordinate Measurement Machines
Critical Pneumatic Valves
Protection of Pneumatic Instrumentation
Low Dewpoint Instrument Air
Pneumatic Equipment
Pressurizing Electronic Cabinets
Dry Air for Hazardous Areas

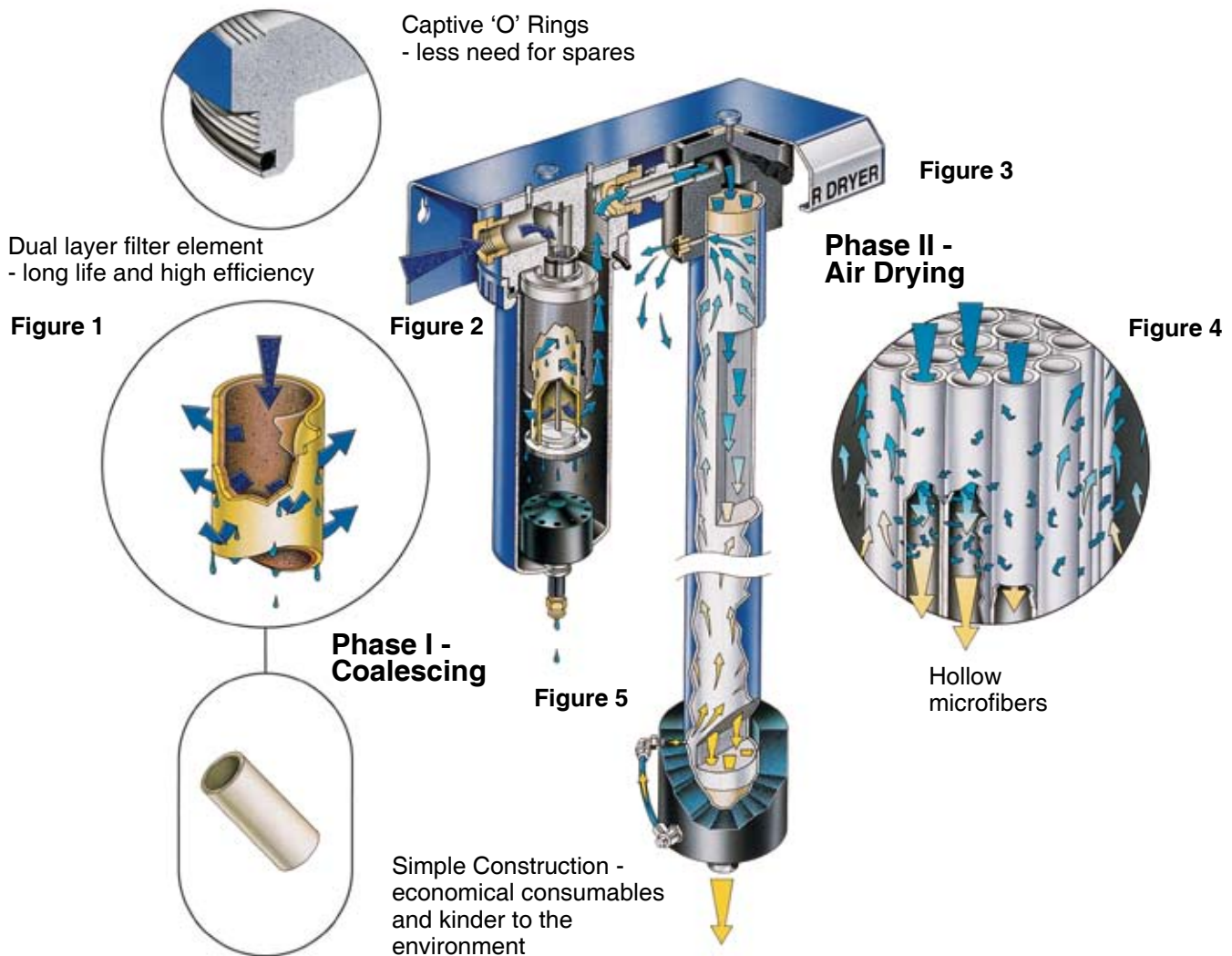
Why Choose a Balston +35°F Membrane Dryer?

There are many variables that will affect the output specification of compressed air. By the time air reaches its intended point of use, changes in pressure, temperature and dewpoint can all contribute to potential contamination. As capital equipment tolerances become tighter and more sensitive to this contamination, maintenance costs will escalate if equipment is not adequately protected. In cases where standard air filtration is not sufficient or where the reliability, performance and operating cost of older dryer technologies is becoming more significant, a Balston Membrane Dryer provides a reliable and economical alternative.

IT Series Point of Use Membrane Dryers

Balston Membrane Air Dryers combine superior coalescing filtration technology with a proven, innovative membrane system to supply clean, dry, +35°F dewpoint compressed air. The Balston Membrane Dryers are available in 6 different models which can deliver compressed air at flow rates up to 50 SCFM with a +35°F dewpoint. The systems are engineered for easy installation, operation, and long term reliability. By incorporating high efficiency coalescing filtration and the highest efficiency membrane available, the systems provide low cost operation with the lowest minimal maintenance.

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 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.

IT Series Models and Flow Rates



IT0010-35



IT0030-35



IT0080-35



IT0150-35



IT0250-35



IT0500-35

Easy to Operate and Maintain

Installation consists of simply connecting a standard compressed air line to the inlet and connecting the outlet to your application. The unit is ready for trouble-free operation. This system is designed to operate 24 hours per day, 7 days per week.

Once the system is operating, it requires little monitoring. The only maintenance involves changing the coalescing prefilter cartridges periodically. The membrane module does not require any maintenance.

Flow Rates at 35°F (2°C) Pressure Dewpoint (1)

Model Number	IT0010-35	IT0030-35	IT0080-35	IT0150-35	IT0250-3560	IT0250-3500	IT0500-3560	IT0500-3500
Flow @ 100 psig Inlet Pressure (scfm)	1	3	8	15	25	N/A	50	N/A
Flow @ 101-150 psig Inlet Pressure (scfm)	1	3	8	15	N/A	25	N/A	50
Regeneration Flow @ 100 psig (scfm)	0.25	0.5	1.5	2.7	4.5	4.5	9.0	9.0

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

IT Series Principal Specifications

Principal Specifications

Model Number	IT0010-35	IT0030-35	IT0080-35	IT0150-35	IT0250-3560	IT0250-3500	IT0500-3560	IT0500-3500
Min/Mas Inlet Air Temp.	40°F/120°F 4°C/49°C	40°F/120°F 4°C/49°C	40°F/120°F 4°C/49°C	40°F/120°F 4°C/49°C	40°F/120°F 4°C/49°C	40°F/120°F 4°C/49°C	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	40°F/120°F 4°C/49°C	40°F/120°F 4°C/49°C	40°F/120°F 4°C/49°C	40°F/120°F 4°C/49°C	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	60/150 psig 4.1/10 barg	60/150 psig 4.1/10 barg	60/100 psig 4.1/6.9 barg	10/150 psig 6.9/10 barg	60/100 psig 4.1/6.9 barg	10/150 psig 6.9/10 barg
Compressed Air Requirements	Total Air Consumption: Regeneration Flow + Outlet Flow Requirements							
Max. Pressure Drop (1)	3 psid	3 psid	3 psid	3 psid	5 psid	5 psid	5 psid	5 psid
Wall Mountable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mechanical Separator Included	F14F17B	F06F18B	F06F18B	F07F38B	F07F38B	F07F38B	F07F38B	F07F38B
Coalescing Prefilters (2)	8A02N-0B2-BX (2)	2002N-0B1-BX (2)	2002N-0B1-BX (2)	B2004N-1B1-DX B2004N-0B1-BX	2104-1B1-DX 2104-0B1-BX	2104N-1B1-DX 2104-0B1-BX	2208N-1B1-DX 2208N-0B1-BX	2208N-1B1-DX 2208N-0B1-BX
inlet Port Size	1/4" NPT	1/4" NPT	1/4" NPT	1/2" NPT	1/2" NPT	1/2" NPT	1/2" NPT	1/2" NPT
Outlet Port Size	1/4" NPT	1/4" NPT	1/4" NPT	1/2" NPT	1" NPT	1" NPT	1" NPT	1" NPT
Electrical Requirements	None	None	None	None	None	None	None	None
Dimensions (cm)	17.5"Lx8"Wx2.5"D 44.5 x 20.3 x 6.3	18.1"Lx10"Wx4"D 45.2 x 10.5 x 6.3	24"Lx11.1"Wx4"D 61 x 28.2 x 6.3	25"Lx16"Wx4.5"D 63.5 x 40.6 x 11.4	26"Lx18"Wx6"D 66 x 45.7 x 15.2	26"Lx18"Wx6"D 66 x 45.7 x 15.2	39"Lx21"Wx6"D 99 x 53.3 x 15.2	39"Dx21"Wx6"D 99 x 53.3 x 15.2
Shipping Weight	1.62 lbs (.73 kg)	6.68 lbs (3 kg)	6.68 lbs (3 kg)	14.88 lbs (6.75 kg)	24.5 lbs (11.11 kg)	24.5 lbs (11.11 kg)	36.5 lbs (16.55 kg)	36.5 lbs (16.55 kg)

Notes:

1 Total Air Consumption = Regeneration + Outlet Flow.

2 If compressed air is extremely contaminated, a Grade DX prefilter should be installed directly upstream from the membrane dryer.

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

Model Number	IT0010-35	IT0030-35	IT0080-35	IT0150-35	IT0250-3560	IT0250-3500	IT0500-3560	IT0500-3500
Replacement Prefilter Cartridges*								
Stage 1	PS403	PS702	PS702	PS802	PS802	PS802	PS802	PS802
Stage 2 **	---	---	---	5/100-12-DX	5/100-18-DX	5/100-18-DX	5/100-19-DX	5/150-19-DX
Stage 3	5/050-05-BX	5/100-12-BX	5/100-12-BX	5/100-12-BX	5/100-18-BX	5/100-18-BX	5/150-19-BX	5/150-19-BX



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Parker Hannifin Corporation

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To be a leading worldwide manufacturer of components and systems for the builders and users of durable goods. More specifically, we will design, market and manufacture products controlling motion, flow and pressure. We will achieve profitable growth through premier customer service.

Product Information

North American customers seeking product information for Balston products, the location of local sales offices or repair services will receive prompt attention by calling the Filtration and Separation Division at our toll-free number: 1-800-343-4048. For all other product information call 1-800-C-PARKER (1-800-272-7537).

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