

Membrane Air Dryers



Membrane Air
Dryer Model
AD0030-35

Applications

- Low dewpoint instrument air
- Pneumatic equipment
- Purging electronic cabinets
- Analytical instrumentation
- Prevention of freeze-ups
- Dry air for hazardous areas
- General laboratory air supply
- Air bearings
- Electrostatic painting
- Dental air
- Laser and optical purge
- Purge moisture sensitive coatings and adhesives

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

Require no electricity thus lowering operating costs

Dewpoints as low as -40°F (-40°C) prevent freeze-ups

Explosion proof

Silent operation

No desiccant to change

Eliminates point of use condensate discharge typical of refrigerant dryer technology

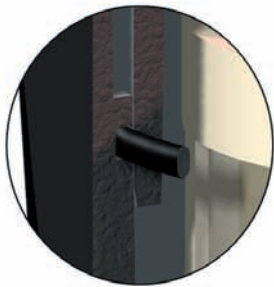
Membrane Air Dryers

Parker Membrane Air Dryers combine a superior coalescing technology with a proven, innovative membrane drying system to supply clean, dry compressed air with dewpoints as low as -40°F (-40°C). The Parker Membrane Dryers are available in 10 different models which can deliver compressed air at flow rates up to 10 SCFM with a -40°F (-40°C) dewpoint; or deliver compressed air at flow rates up to 40 SCFM with a 35°F (2°C) dewpoint. The Membrane Air Dryers are engineered for easy installation, operation, and long term reliability. The Dryers incorporate high efficiency water separation, coalescing filtration and the highest efficiency membrane available to provide low cost operation and minimal maintenance.

State-of-the-Art Membrane Technology

Water vapor from the compressed air supply passes through the hollow fibers of the membrane. At the same time, a small portion of the dry air product is re-directed along the length of the fibers to sweep out the water vapor which has permeated the membrane. The moisture-laden sweep gas is then vented to the atmosphere, and clean, dry air is supplied to the application. The drying power of the membrane is controlled by varying the compressed air flow rate and pressure. The Parker Membrane Air Dryer is designed to operate continuously, 24 hours per day, 7 days per week. The only maintenance required is changing the prefilter cartridge once a year. This annual maintenance takes approximately 5 minutes.

State-of-the-art Technology



Captive 'O' Rings
- less need for spares



Figure 1
Dual Layer Filter Element
- long life and high efficiency

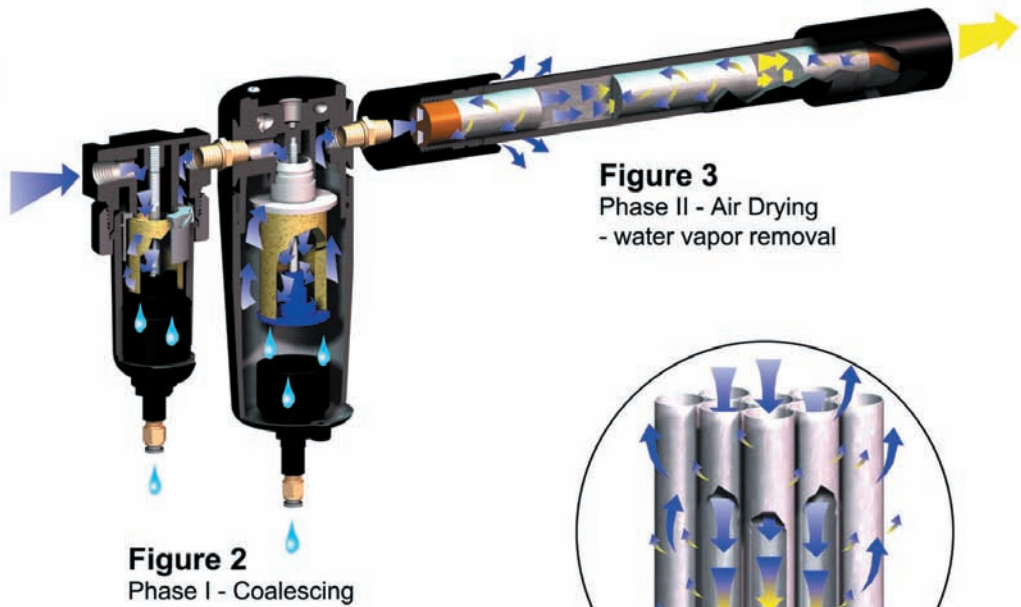


Figure 2
Phase I - Coalescing

Figure 3
Phase II - Air Drying
- water vapor removal

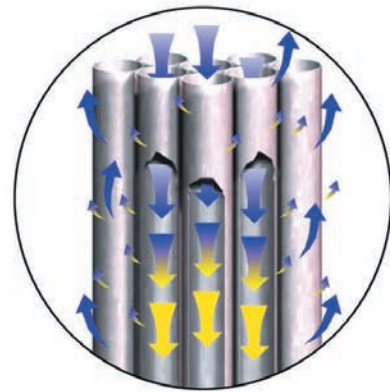


Figure 4
Hollow Fiber Membrane
- permeates only water vapor

Phase I - Coalescing Filtration

Prior to entering the membrane drying module, the compressed air passes through a high efficiency water separator and 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.

Product Specifications



Model AD0010-35
Model AD0002-40



Model AD0030-35
Model AD0008-40



Model AD0080-35
Model AD0020-40



Model AD0200-35



Model AD0050-40



Model AD0400-35
Model AD0100-40

Flow Rates	35°F (2°C) Pressure Dewpoint				
Model Number (3)	AD0010-35	AD0030-35	AD0080-35	AD0200-35	AD0400-35
Product Flow at 100 psig Inlet Pressure	1 SCFM	3 SCFM	8 SCFM	20 SCFM	40 SCFM
Regeneration Flow at 100 psig (2)	0.25 SCFM	0.5 SCFM	1.5 SCFM	3.5 SCFM	6 SCFM

Flow Rates (1)	-40°F (-40°C) Atmospheric Dewpoint				
Model Number (3)	AD0002-40	AD0008-40	AD0020-40	AD0050-40	AD0100-40
Product Flow at 100 psig	0.25 SCFM	0.8 SCFM	2 SCFM	5 SCFM	10 SCFM
Regeneration Flow at 100 psig (2)	0.25 SCFM	0.2 SCFM	0.5 SCFM	2 SCFM	2.5 SCFM

Notes:

1 Dewpoint specified for saturated inlet air at 70°F (21°C) and 100 psig. Outlet flows will vary slightly for other inlet conditions.

2 Total Air consumption = Regeneration flow + outlet flow.

3 If compressed air is extremely contaminated, a Grade DX prefilter should be installed directly upstream from the membrane dryer. Add-DX suffix to Model number. Example: AD0010-35-DX.

Specifications and Ordering Information

Principal Specifications

Model Number	AD0010-35 AD0002-40	AD0030-35 AD0008-40	AD0080-35 AD0020-40	AD0200-35 AD0050-40	AD0400-35 AD0100-40
Min/Max Inlet Air Temp.(2)	40°F/100°F (4°C/38°C)	40°F/100°F (4°C/38°C)	40°F/100°F (4°C/38°C)	40°F/100°F (4°C/38°C)	40°F/100°F (4°C/38°C)
Min/Max Ambient Temp.	40°F/100°F (4°C/38°C)	40°F/100°F (4°C/38°C)	40°F/100°F (4°C/38°C)	40°F/100°F (4°C/38°C)	40°F/100°F (4°C/38°C)
Min/Max Inlet Pressure	60 psig/150 psig (4.1 barg/10 barg)	60 psig/150 psig (4.1 barg/10 barg)	60 psig/150 psig (4.1 barg/10 barg)	60 psig/150 psig (4.1 barg/10 barg)	60 psig/150 psig (4.1 barg/10 barg)
Compressed Air Requirement	Total Air Consumption: Regeneration Flow + Outlet Flow Requirements (see tables on page 26.)				
Max. Pressure Drop(3)	3 psid	3 psid	3 psid	5 psid	5 psid
Wall Mountable	Yes	Yes	Yes	Yes	Yes
Mechanical Separator (included) (4)	F14F17B	F06F18B	F06F18B	F07F38B	F07F38B
Coalescing Prefilter(4)	8A02N-OBDBX	8002N-1A1-BX	8002N-1A1-BX	8104N-1A1-BX	8104N-1A1-BX
Inlet/Outlet Port Size	1/4" NPT (female)	1/4" NPT (female)	1/4" NPT (female)	1/2" NPT (female)	1/2" NPT (female)
Electrical Requirements	None	None	None	None	None
Dimensions	18.8"l x 2.3"w x 5.4"h(7) (48cm x 5.8cm x 13.7cm)	22.1"l x 3"w x 9.4"h(8) (56cm x 7.6cm x 24cm)	27.5"l x 4"w x 9.4"h(8) (70cm x 10cm x 24cm)	28.5"l x 4"w x 12.4"h(5,8) (72cm x 10cm x 31.4cm) 31.5"l x 5.5"w x 12.4"h(6,8) (80cm x 14cm x 31.4cm)	44.5"l x 5.4"w x 12.4"h(8) (113cm x 13.7cm x 31.4cm)
Shipping Weight	4 lbs. (2 kg)	5 lbs. (2 kg)	5 lbs. (2 kg)	5 lbs.(5) (2kg) 10 lbs.(6) (5kg)	10 lbs. (5kg) 18 lbs.(7) (81kg)

Notes:

1 Dewpoint specified for saturated inlet air at 70°F (21°C) and 100 psig (6.9 barg). Outlet flows will vary slightly for other inlet conditions.

2 Inlet compressed air dewpoint must not exceed the ambient air temperature by more than 10°F (5°C).

3 Total Air Consumption = Regeneration Flow + Outlet Flow.

4 If compressed air is extremely

contaminated, a Grade DX prefilter should be installed directly upstream from the membrane dryer. Add-DX suffix to Model number.
Example: AD0010-35-DX.

5 Model AD0200-35

6 Model AD0050-40

7 Add 2.2" for DX Assemblies

8 Add 3.5" for DX Assemblies

Ordering Information

For assistance, call toll-free at 1-800-343-4048 8AM to 5PM Eastern Time

Membrane Air Dryer		AD0010-35 AD0002-40	AD0030-35 AD0008-40	AD0080-35 AD0020-40	AD0200-35 AD0050-40	AD0400-35 AD0100-40
Membrane Air Dryer For Contaminated Air		AD0010-35-DX AD0002-40-DX	AD0030-35-DX AD0008-40-DX	AD0080-35-DX AD0020-40-DX	AD0200-35-DX AD0050-40-DX	AD0400-35-DX AD0100-40-DX
Replacement Prefilter Cartridges*	Stage 1:	PS403	PS702	PS702	PS802	PS802
	Stage 2:**	4/050-05-DX	4/100-12-DX	4/100-12-DX	4/100-18-DX	4/100-18-DX
	Stage 3:	4/050-05-BX	4/100-12-BX	4/100-12-BX	4/100-18-BX	4/100-18-BX

* To ensure consistent product performance and reliability use only genuine Balston replacement parts and filter cartridges.

** DX Grade for -DX Models only.

North America

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fax 209 529 3278
www.parker.com/racor

Parker Hannifin Corporation
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P.O. Box 6030
Holly Springs, MS 38635
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fax 662 274 2118
www.parker.com/racor

Parker Hannifin Corporation
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302 Parker Drive
Beaufort, SC 29906
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Compressed Air Treatment

Parker Hannifin Corporation
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242 Neck Road
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phone 978 858 0505
fax 978 556 7501
www.balstonfilters.com

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fax 248 628 1850
www.parker.com/finitefilter

Parker Hannifin Corporation
Airtek Division
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Lancaster, NY 14086
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fax 716 685 1010
www.airtek.com

Hydraulic Filtration

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Hydraulic Filter Division
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www.parker.com/hydraulicfilter

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