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## PRD & DNC Series

Non-Cycling Refrigerated Air Dryers  
(10 - 1200 scfm)



# PRD & DNC Series

## Non-Cycling Refrigerated Air Dryers

The importance of compressed air as a provider of energy for modern industrial processes is widely known. What is often overlooked however is the need to provide quality treatment for this air.

In fact, the air entering the system contains moisture which, when cooled, will turn into liquid water, causing extensive damage not only to the compressed air network, but also to the finished product.

These costly contamination problems can be avoided by installing a PRD or DNC Series non-cycling refrigerated dryer (ranging from 10 - 1200 scfm) package complete with Parker domnick hunter OIL-X EVOLUTION high efficiency filtration.

Parker domnick hunter's revolutionary 3-in-1 heat exchanger (PRD10 - PRD175) features a 3-in-1 aluminum design with integral air connections. All models include an air-to-air freecooler, while the unique "slowflow" demister ensures perfect dewpoints whatever the operating conditions.

Our 4-in-1 heat exchanger (DNC200 and up) offers minimal pressure drops and class leading performance, and significantly increases the efficiency of the whole compressed air treatment process.

Compressed air purification equipment must deliver uncompromising performance and reliability while providing the right balance of air quality with the lowest cost of operation. Many manufacturers offer products for the filtration and purification of contaminated compressed air, which are often selected only upon their initial purchase cost, with little or no regard for the air quality they provide, the cost of operation throughout their life or their environmental impact. When purchasing purification equipment, delivered air quality, the overall cost of ownership and the equipment's environmental impact must always be considered.

### Benefits of Models PRD10 - PRD175

- "Plug and Play" design for easy installation
- Robust timed solenoid drain equals improved reliability (PRD15 - PRD175)
- Unique 3-in-1 heat exchanger
- Oversized demister separator resulting in excellent liquid removal over all operating conditions
- Oversized condenser to operate in ambients to 122°F (50°C)
- Fan cycling ensures stable operation
- All models incorporate a dewpoint indicator
- Extremely compact footprint
- Low pressure differential across dryer (1.45 psi average)
- ETL listed complete unit
- Dryers manufactured in facility certified to ISO9001 and ISO14001



### Benefits of Models DNC200 - DNC1200

- Optimum dewpoint levels for highest system performance
- Unique 4-in-1 heat exchanger
- High reliability, easy to use and maintain
- Environmentally friendly
- Extremely low pressure drop design
- Easy to use, highly reliable control panel
- ETL listed
- Crankcase heater prevents refrigerant migration into compressor oil which provides compressor lubrication integrity, both prior to start-up and during the "off" cycle
- Oversized condenser to operate in ambient to 115°F (45°C) with pre-filter
- Dryers manufactured in facility certified to ISO9001
- High efficiency Parker domnick hunter OIL-X EVOLUTION Pre-Filter standard on all models



# Benefits

PRD and DNC Series are designed to significantly reduce the operational costs of the compressor by minimizing pressure loss.



## Reduced indirect costs

Electricity required by the compressor to compensate for pressure drops in the air dryer accounts for around 25% of its total cost over 5 years. Parker domnick hunter's DNC Series offers average pressure drops which are about one half those of conventional systems.

## Lowest Differential Pressure

Parker domnick hunter refrigerated dryers have an average of 2.0 psid versus the industry average of 5.0 psid.

Example: 500 scfm dryer operating, 8760 hours per year

Cost of Power	Savings Realized
\$0.05 per KW =	\$546 per year
\$0.10 per KW =	\$1091 per year
\$0.15 per KW =	\$1638 per year

## Reduced CO<sub>2</sub> Emissions

Many countries worldwide are looking closely at their manufacturing industries in an effort to reduce the amount of harmful greenhouse gases released into the atmosphere. The use of electricity has a direct impact on the generation and release of CO<sub>2</sub>. By significantly reducing the energy consumption of its products, Parker domnick hunter can help you reduce your carbon footprint and protect the environment.

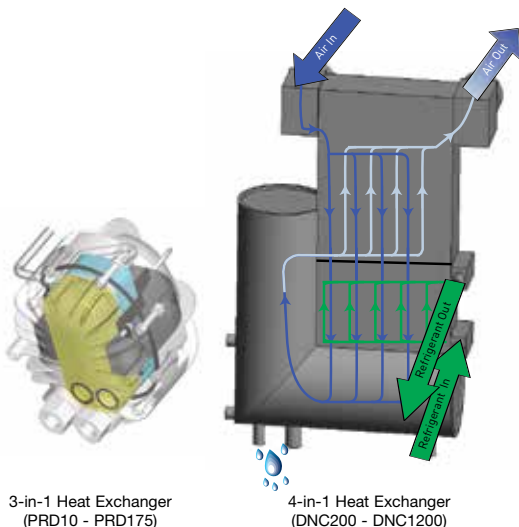


## Environmentally Friendly

Montreal Protocol compliant R134a (PRD Series) & R404a (DNC Series) refrigerants allow for zero ozone depletion, low global warming potential and low refrigerant charge.

## Heat Exchanger provides less than 2 psi pressure drop

The heat exchanger features an extremely robust, all-in-one aluminum design, with no interconnecting tubing. The flow path of the heat exchanger has been designed in order to optimize its performances. In particular, large volumes allow low air velocity through the heat exchanger section, resulting in high exchange efficiency and low pressure drops. Pressure drops are further improved thanks to the absence of interconnecting pipes through the different sections of the heat exchanger and to a straight forward path of the compressed air flow with smooth and minimum changes of flow directions.



# OIL-X EVOLUTION, add to your savings

Any restriction to airflow within a filter housing and element will reduce the system pressure. To generate compressed air, large amounts of electrical energy are consumed, therefore any pressure lost within the system can be directly converted into a cost for wasted energy. The higher the pressure loss, the higher the energy costs. In order to build upon the low pressure drop of PRD and DNC Series, not just any compressed air filter will do.

Providing an optimal flow path for the compressed air through the filter housing and element is key to reducing system operating costs.

Pressure loss in a compressed air filter is a combination of fixed pressure losses and incremental pressure losses.

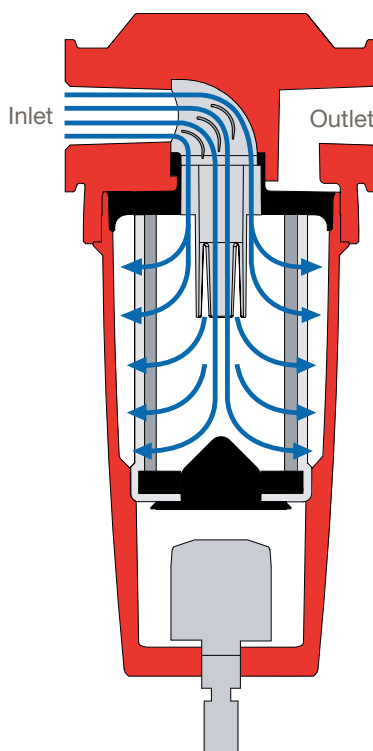
Fixed pressure losses are derived from the filter housing and the interface between the filter housing and filter element.

Incremental pressure losses are directly related to the filter element as it blocks up with contamination.

In most filters, high operational costs can be attributed to a poorly designed airflow path within the filter housing element and poorly selected filtration media.

In addition to this, the high differential pressure “change points” recommended by many filter manufacturers increase operational costs even further.

## OIL-X EVOLUTION die-cast filters optimized flow path from patented Aerospace Flow Management System



“Bell mouth” housing inlet & full flow inlet conduit



Smooth 90° elbow & aerospace turning vanes



Flow distributor



Conical flow diffuser



### Deep bed pleating

Deep bed pleating reduces the air flow velocity within the filtration media. This both improves filtration performance of the filter element and also reduces pressure losses.



### Specialist media treatment

All OIL-X EVOLUTION coalescing and dust removal filter media includes a specialist treatment. This actively repels oil and water to ensure that coalesced liquid does not reduce the voids volume. Maintaining a high voids volume reduces the risk of premature blockage, system pressure losses and high energy consumption.

# Technical

## Product Selection

Model	Air Connections	Nominal Capacity (scfm)*	Dimensions ins (mm)			Weight		Primary Voltages	Recommended Pre-Filter Model**	Recommended After-Filter Model***
			H	W	D	lbs	kg			
PRD10	1/2" NPT-F	10	16.9 (430)	8.3 (210)	17.7 (450)	42	19	115V/1Ph/60Hz	AO010CNFX	AA010CNFX
PRD15	1/2" NPT-F	15	16.9 (430)	8.3 (210)	17.7 (450)	42	19	115V/1Ph/60Hz	AO010CNFX	AA010CNFX
PRD25	1/2" NPT-F	25	19.9 (505)	8.3 (210)	19.7 (500)	52	24	115V/1Ph/60Hz	AO015CNFI	AA015CNFI
PRD35	1/2" NPT-F	35	19.9 (505)	8.3 (210)	19.7 (500)	52	24	115V/1Ph/60Hz	AO015CNFI	AA015CNFI
PRD50	3/4" NPT-F	50	22.2 (565)	8.9 (225)	20.5 (520)	58	27	115V/1Ph/60Hz	AO020DNFI	AA020DNFI
PRD75	3/4" NPT-F	75	22.2 (565)	8.9 (225)	20.5 (520)	68	31	115V/1Ph/60Hz	AO025DNFI	AA025DNFI
PRD100	3/4" NPT-F	100	22.2 (565)	8.9 (225)	20.5 (520)	77	35	115V/1Ph/60Hz	AO025DNFI	AA025DNFI
PRD125	1 1/2" NPT-F	125	23.4 (604)	16.7 (425)	21.9 (555)	115	52	115V/1Ph/60Hz & 230V/1Ph/60Hz	AO025ENFI	AA025ENFI
PRD150	1 1/2" NPT-F	150	23.4 (604)	16.7 (425)	21.9 (555)	128	58	115V/1Ph/60Hz & 230V/1Ph/60Hz	AO030GNFI	AA030GNFI
PRD175	1 1/2" NPT-F	175	23.4 (604)	16.7 (425)	21.9 (555)	132	60	230V/1Ph/60Hz	AO030GNFI	AA030GNFI
DNC200	2" NPT-F	200	42 (1067)	28.125	42 (1067)	402	182	230V/1Ph/60Hz	AO030GNFI	AA030GNFI
DNC250	2" NPT-F	250	42.1 (1069)	28.4 (721)	42.4 (1077)	421	191	230V/1Ph/60Hz 230V/3Ph/60Hz 460V/3Ph/60Hz	AO035GNFI	AA035GNFI
DNC325	2" NPT-F	325	42.1 (1069)	28.4 (721)	42.4 (1077)	432	196	230V/1Ph/60Hz 230V/3Ph/60Hz 460V/3Ph/60Hz	AO035GNFI	AA035GNFI
DNC400	2" NPT-F	400	42.1 (1069)	28.4 (721)	42.4 (1077)	441	200	230V/3Ph/60Hz & 460V/3Ph/60Hz	AO040HNFI	AA040HNFI
DNC500	2" NPT-F	500	42.1 (1069)	28.4 (721)	42.4 (1077)	460	209	230V/3Ph/60Hz & 460V/3Ph/60Hz	AO045HNFI	AA045HNFI
DNC700	3" NPT-F	700	48.6 (1234)	36.4 (925)	56.4 (1433)	670	304	230V/3Ph/60Hz & 460V/3Ph/60Hz	AO050JNFI	AA050JNFI
DNC850	3" NPT-F	850	48.6 (1234)	36.4 (925)	56.4 (1433)	688	312	460V/3Ph/60Hz	AO050JNFI	AA050JNFI
DNC1050	3" NPT-F	1050	48.6 (1234)	36.4 (925)	56.4 (1433)	745	338	460V/3Ph/60Hz	AO055JNFI	AA055JNFI
DNC1200	3" NPT-F	1200	48.6 (1234)	36.4 (925)	56.4 (1433)	766	347	460V/3Ph/60Hz	AO055JNFI	AA055JNFI

\*Flowrates at the following climatic conditions - Ambient Temperature: 100°F (38°C), Inlet Temperature: 100°F (38°C), Inlet Pressure: 100 psi g (7 bar g).

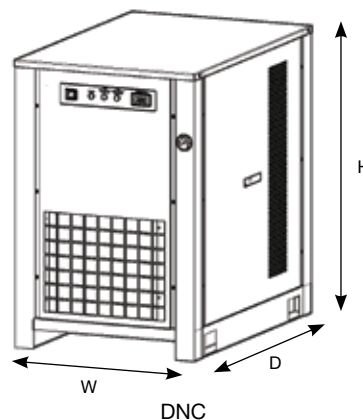
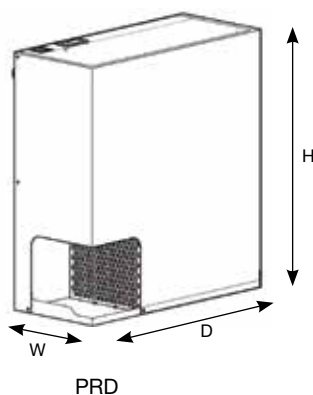
\*\*Parker domnick hunter recommends Grade AO pre-filter.

\*\*\*Parker domnick hunter recommends Grade AA after-filter.

Note: Filters supplied loose, pre-filter supplied standard with DNC models.

## Technical Data

Models	Max Ambient Temperature	Max Inlet Temperature	Min Ambient Temperature	Max Inlet Pressure	Refrigerant
PRD10 - PRD175	122°F (50°C)	149°F (65°C)	41°F (5°C)	232 psi g (16 bar g)	R134a
DNC200 - DNC1200	115°F (45°C)	140°F (60°C)	41°F (5°C)	200 psi g (14 bar g)	R404a



## Correction Factors for Models PRD10 - PRD175

To obtain dryer capacity at new conditions, multiply nominal capacity x C1 x C2 x C3.

Ambient Temperature (C1)	°F	60	70	80	90	100	110	120
	°C	16	21	27	32	38	43	49
	CF	1.34	1.26	1.17	1.09	1.00	0.91	0.82

Inlet Temperature (C2)	°F	90	100	110	120	140	149
	°C	32	38	43	49	60	65
	CF	1.24	1.00	0.81	0.67	0.45	0.43

Working Pressure (C3)	psi g	60	80	100	125	150	175	200	230
	bar g	4	6	7	9	10	12	14	16
	CFP	0.83	0.93	1.00	1.07	1.12	1.16	1.19	1.22

### Notes:

- Standard equipment includes:
  - Models PRD10 - PRD175 have electromechanical control
  - 6' power cord (115V models) on Models PRD10 - PRD125 only
  - on/off switch
  - R134a environmentally friendly refrigerant
  - power on light
  - built-in demister for high efficient removal of condensed liquid
  - removable cabinet for easy access to internal components
  - moisture dewpoint indicator
  - automatic condensate drain on Model PRD10
  - timed solenoid condensate drain on Models PRD15 - PRD175
- For reliable operation and to meet warranty conditions, a pre-filter must be installed

## Correction Factors for Models DNC200 - DNC1200

To obtain dryer capacity at new conditions, multiply nominal capacity x C1 x C2 x C3.

Ambient Temperature (C1)	°F	80	90	95	100	105	110	115
	°C	27	32	35	38	41	43	46
	CF	1.12	1.08	1.05	1.00	0.95	0.90	0.84

Inlet Temperature (C2)	°F	80	85	90	95	100	105	110	115	120	130	140
	°C	27	29	32	35	38	41	43	46	49	54	60
	CF	1.22	1.22	1.22	1.10	1.00	0.92	0.83	0.76	0.69	0.56	0.46

Working Pressure (C3)	psi g	50	60	75	80	90	100	110	125	130	140	150
	bar g	3.5	4.1	5.2	5.5	6.2	6.9	7.6	8.6	9.0	9.7	10.3
	CFP	0.80	0.84	0.90	0.92	0.96	1.00	1.01	1.02	1.03	1.04	1.05

### Notes:

- Models DNC200 - DNC1200 include the following equipment as standard:
  - on/off switch
  - power light
  - high pressure alarm light
  - low pressure alarm light
  - R404a environmentally friendly refrigerant
  - built-in demister for high efficient removal of condensed liquid
  - removable cabinet for easy access to internal components
  - moisture dewpoint indicator
  - automatic condensate drain
- For reliable operation and to meet warranty conditions, a pre-filter must be installed, included standard with the DNC dryer.

# Aftermarket

Compressed air equipment users demand much more than the supply of high quality products in order to maintain a competitive edge.

Modern production technology is increasingly demanding the provision of a higher purity and more reliable compressed air supply. Products and solutions that are manufactured by Parker domnick hunter are designed to provide air quality that meets with and often exceeds international standards.

As well as the requirement for air purity and reliability, there are additional factors to consider when choosing the right service provider for your compressed air and gas purification system. For example, knowledge of the many regulations regarding the management of industrial waste, energy efficiency improvement programs and consideration of any environmental impact. It is anticipated that future legislations will demand further in-depth technical and knowledge-based support from service providers.

Our commitment to industry does not stop with the supply of high quality products. We are also committed to ensuring that our equipment provides high performance by providing a trouble-free service from a bespoke maintenance and verification package - all tailored to your own specific requirements.

We offer a wide range of valuable services that will impact positively on your drive towards improved production efficiency and product quality with reduced production rejections and operational costs.

From initial selection to installation, commissioning, preventative maintenance and specialized services, Parker domnick hunter is redefining customer service.



Filter Elements and Consumable Parts	Maintenance, Repair and Overhaul	Customer Support	Specialized Services
<ul style="list-style-type: none"> <li>Genuine Replacement filter elements</li> <li>Preventative Maintenance Kits</li> <li>Repair Kits</li> <li>Installation Kits</li> <li>Upgrade Kits</li> </ul>	<ul style="list-style-type: none"> <li>Installation and Commissioning</li> <li>Maintenance and Repair</li> <li>Updates and Upgrades</li> <li>Service Contracts</li> <li>Parts Service</li> <li>Warranty</li> </ul>	<ul style="list-style-type: none"> <li>Business Development</li> <li>Technical Support Group</li> <li>Training</li> <li>Technical Publications</li> </ul>	<ul style="list-style-type: none"> <li>Air Quality Testing</li> <li>Dewpoint Measurement</li> <li>Leak Detection</li> <li>Particle Counting</li> <li>Micro-biological Testing</li> </ul>



# Worldwide Filtration Manufacturing Locations

## North America

**Compressed Air Treatment  
Filtration & Separation/Balston**  
Haverhill, MA  
978 858 0505  
www.parker.com/balston

**Finite Airtek Filtration  
Airtek/domnick hunter/Zander**  
Lancaster, NY  
716 686 6400  
www.parker.com/faf

**Finite Airtek Filtration/Finite**  
Oxford, MI  
248 628 6400  
www.parker.com/finitefilter

**Engine Filtration &  
Water Purification  
Racor**  
Modesto, CA  
209 521 7860  
www.parker.com/racor

Holly Springs, MS  
662 252 2656  
www.parker.com/racor

Beaufort, SC  
843 846 3200  
www.parker.com/racor

**Racor – Village Marine Tec.**  
Gardena, CA  
310 516 9911  
desalination.parker.com

**Parker Sea Recovery**  
Carson, CA  
310 637 3400  
www.searecovery.com

**Hydraulic Filtration  
Hydraulic Filter**  
Metamora, OH  
419 644 4311  
www.parker.com/hydraulicfilter

Laval, QC Canada  
450 629 9594  
www.parkerfarr.com

**Process Filtration  
domnick hunter Process Filtration**  
Oxnard, CA  
805 604 3400  
www.parker.com/processfiltration

Madison, WI  
608 824 0500  
www.scilog.com

Phoenixville, PA  
610 933 1600  
www.parker.com/processfiltration

**Aerospace Filtration  
Velcon Filtration**  
Colorado Springs, CO  
719 531 5855  
www.velcon.com

## Europe

**Compressed Air Treatment  
domnick hunter Filtration & Separation**  
Gateshead, England  
+44 (0) 191 402 9000  
www.parker.com/dhfn

**Parker Gas Separations**  
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www.parker.com/hzd

**Engine Filtration &  
Water Purification  
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www.parker.com/rfde

**Racor Research & Development**  
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**Condition Monitoring Centre**  
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+44 (0) 1842 763 299  
www.parker.com/hfde

**Parker Kittiwake**  
West Sussex, England  
+44 (0) 1903 731 470  
www.kittiwake.com

**Parker Procal**  
Peterborough, England  
+44 (0) 1733 232 495  
www.kittiwake.com

**Process Filtration  
domnick hunter Process Filtration**  
Birtley, England  
+44 (0) 191 410 5121  
www.parker.com/processfiltration

**Parker Twin Filter BV**  
Zaandam, Netherlands  
+31(0)75 655 50 00  
www.twinfilter.com

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www.johnfowlerindia.com

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**Pan American Division**  
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