

aerospace
climate control
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DRD Series

Energy Saving Cycling Refrigerated Air Dryers
(200 - 3000 scfm)



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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 DRD Series refrigerated dryer (ranging from 200 - 3000 scfm) package complete with Parker high efficiency filtration.

Our SmartPack 4-in-1 heat exchanger offers minimal pressure drops and class leading performance, and significantly increases the efficiency of the whole compressed air treatment process. The innovative

SmartControl function automatically and continuously adjusts dryer operation to the effective working conditions, minimizing operating costs and maximizing performances.

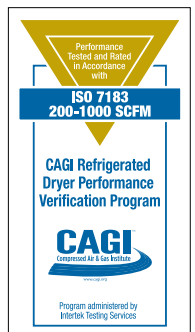
Compressed air purification equipment must deliver uncompromising performance and reliability while providing the right balance of air quality with the lowest cost of operation. Many manufacturers offer products for the filtration and purification of contaminated compressed air, which are often selected 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

- Optimum dewpoint levels for highest system performance
- Advanced patented design solutions
- Unique 4-in-1 SmartPack heat exchanger
- High reliability, easy to use and maintain
- Environmental, lowest real operating costs
- Dual mode integrated energy saving no loss level drain with back up timer drain with alarm (DRD325 - DRD3000)
- Extremely low pressure drop design
- Crankcase heater
- SmartControl energy saving function
- Advanced scroll compressor with Phase Monitor (400 scfm and up)
- Oversized condenser to operate in ambient to 122°F (50°C) with pre-filter
- 3rd party performance verified by CAGI
- ETL listed CRN registered complete unit (except Alberta)
- Dryers manufactured in facility certified to ISO9001, ISO14001, and ISO18001



The Compressed Air & Gas Institute (CAGI) provides 3rd party performance verification for stand alone refrigerated air dryers with flows from 200 - 1000 scfm. This is a public representation that the stated Air Flow Capacities and Efficiencies have been verified by an independent laboratory. Participation in the program is voluntary and open to all manufacturers, whether they are a member of CAGI or not. Parker's DRD Series Models DRD200 - DRD1000 dryers have been tested and verified performance information published on the standard CAGI Data Sheets (found on www.parker.com/faf). The data sheets define operational and performance information used during the specification and application decision making process. The test method used is derived from Air Dryers - ISO 7183 - Compressed Air Dryers - Specifications and Testing and Performance Rating. By choosing Parker, you know the dryer has been 3rd party tested and validated and is ready to perform exactly as stated.



Energy efficient and environmentally sound

DRD Series Series dryers are designed not only to minimize the use of compressed air and electricity in their operation, but also to significantly reduce the operational costs of the compressor by minimizing pressure loss.



Minimal direct energy costs

The SmartSave control automatically and precisely adjusts energy consumption in response to actual operating conditions (air variability and seasonal changes), avoiding unnecessary waste. SmartControl controls the dryer operation via multiple sensors guaranteeing maximum savings and avoiding dewpoint surges. SmartPack's all-in-one design and thermal insulation further enhance the overall energy-savings.

Lowest full-load power consumption

Parker DRD Series Series is the most energy efficient air dryer on the market, under all operating conditions. DRD Series leads the market with the lowest full-load power consumption due to its oversized heat exchanger, compliant scroll compressors, R407C environmentally friendly refrigerant and direct operation, avoiding the increased energy consumption of thermal mass-type dryers. Parker's DRD Series consumes less energy at full load and saves more energy at partial loads. Electrical consumption usually accounts for around 50% of the air dryer's total cost over a five-year period.

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's DRD Series offers average pressure drops which are about one half those of conventional systems. The air compressor requires additional energy to offset the drop in compressed air pressure caused by traditional condensate drains. Zero air loss drains automatically adjust drainage patterns to avoid compressed air loss thereby saving energy.

Lowest Differential Pressure

Parker DRD Series 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

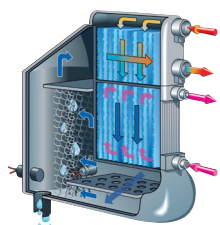
Reduced CO₂ Emissions

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 CO₂. By significantly reducing the energy consumption of its products, Parker can help you reduce your carbon footprint and protect the environment.

Environmentally Friendly

Montreal Protocol compliant R407C refrigerant allows for zero ozone depletion, low global warming potential and low refrigerant charge.

Smart technology: the benefits



4-in-1 SmartPack

SmartPack Heat Exchanger provides less than 2 psi pressure drop

The patented SmartPack 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.



Optional Smart BMS Interface (DRD325 - DRD3000)

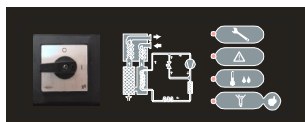
Simple BMS interface includes:

- RS485 serial card provides direct communication to Modbus. Requires no gateway or A.N.I.
- Provides visualization of dewpoint, alarm conditions and service indication.
- Provides remote control of the dryer including on/off and alarm reset (depending on actual alarm)



Dual Mode Zero Air Loss Drain (DRD325 - DRD3000)

The drainage chamber is integrated into the heat exchanger while the valve mechanism is fitted in an easily accessible drain niche. The Zero Air Loss Drain continuously adjusts itself to the actual working conditions, ensuring zero air loss and a notable reduction in system power consumption. An innovative control system continuously monitors for fault situations. If a fault does occur, an alarm is signaled and the drain switches to conventional timed solenoid drain operation. The dual mode circuitry ensures maximum reliability.



MicroSmart Electronic Control (DRD200 - DRD250)

The innovative MicroSmart non-cycling dryer controller monitors the dewpoint temperature and indicates system status via LED. Included are a main switch, high/low dewpoint warning light, push to test drain button and service due light.



SmartControl with SmartSave Cycling (DRD325 - DRD3000)

The multifunction SmartControl provides a versatile platform for user interface and SmartSave Cycling (if enabled). The innovative SmartSave Cycling Control continuously monitors the demand placed on the dryer. At conditions of low demand the refrigerant compressor is cycled off to save energy. A sophisticated algorithm continuously adapts the operation of the dryer for optimum energy efficiency while minimizing the dewpoint spikes common to traditional thermal mass dryers.

User interface

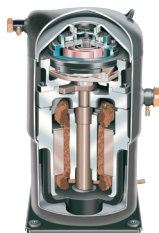
- Multi-functional digital display
- Digital dew point readout
- Synoptic panel/alarms list
- programmable parameters
- Average energy savings being achieved

Maintenance

- Alarm report (last 8 alarms)
- Maintenance warning
- Hours counter (dryer and compressor)

Accessories

- Voltage-free alarm contacts
- Remote on-off contact
- RS-485 interface



Advanced Scroll Compressors (400 scfm and up)

Parker domnick hunter's DRD Series Series features advanced scroll compressors, offering energy savings of 20% when compared with piston compressors. The ability to tolerate liquid returns coupled with 50% less moving parts render them nearly indestructible and highly reliable. Low vibration levels increase overall refrigeration circuit longevity.

Add to your savings with Parker Filtration

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 DRD Series, not just any compressed air filter will do.

Compressed air and gas lines typically contain water, oil, and particulate contamination

The contaminants of greatest concern in precision compressed air systems are water, oil, and solids.

Water vapor is present in all compressed air and it becomes greatly concentrated by the compression process. While air dryer systems can be used effectively to remove water from compressed air, they will not remove oil, which is the second major liquid contaminant.

Most oil comes from compressor lubrication carry-over, but even the air produced by oil-free compressors has hydrocarbon contamination brought into the system through the intake.

The third contaminant is solid matter including dirt, rust, and scale. Solid particulates, combined with aerosols of water and oil, can clog and shorten the life of air system components and can foul processes.

Parker High Efficiency Filtration

- Elements utilize low turbulence flow design
- Epoxy saturated borosilicate glass nanofiber media with outer synthetic fabric dryer layer allowing swift removal of coalesced liquids
- Differential pressure gauge and auto drain
- Durable aluminum chromated heads and bowls with powder coated finish
- Large sump capacity to handle condensate
- Simple installation and easy maintenance



Parker Filtration

International Standard ISO8573-1 has become the industry standard method for specifying compressed air cleanliness.

ISO8573-1:2010 CLASS	Solid Particulate			Mass Concentration ppm	Water		Oil	
	Maximum number of particles per m ³				Vapor Pressure Dewpoint	Liquid g/m ³		Total Oil (aerosol liquid and vapor) ppm
	0.1 - 0.5 micron	0.5 - 1 micron	1 - 5 micron					
0	As specified by the equipment user or supplier and more stringent than Class 1							
1	≤ 20,000	≤ 400	≤ 10	-	≤ -94°F (-70°C)	-	0.01	
2	≤ 400,000	≤ 6,000	≤ 100	-	≤ -40°F (-40°C)	-	0.1	
3	-	≤ 90,000	≤ 1,000	-	≤ -4°F (-20°C)	-	1	
4	-	-	≤ 10,000	-	≤ 37.4°F (3°C)	-	5	
5	-	-	≤ 100,000	-	≤ 44.6°F (7°C)	-	-	
6	-	-	-	≤ 5	≤ 50°F (10°C)	-	-	
7	-	-	-	5 - 10	-	≤ 0.5	-	
8	-	-	-	-	-	0.5 - 5	-	
9	-	-	-	-	-	5 - 10	-	
X	-	-	-	> 10	-	> 10	> 10	

Technical



CRN all Provinces Except Alberta, Newfoundland, and Labrador (DRD Dryer and Filters)

DRD250 - A230160 - F1

A = Air cooled
W = Water cooled

230160 = (230V/1Ph/60Hz)
230360 = (230V/3Ph/60Hz)
460360 = (460V/3Ph/60Hz)
575360* = (575V/3Ph/60Hz)

Blank = Dryer Only
F1 = Dryer Plus Pre-Filter
F2 = Dryer Plus Pre-Filter & After-Filter



Product Selection

Model	Air In/Out	Nominal Capacity	Dimensions ins (mm)			Weight		Filtration ²	
			H	W	D	lbs	kg	Pre-Filter	After-Filter
DRD200-A230160- ³	1 1/2" NPT-F	200	38.3 (972)	27.7 (703)	22.1 (562)	183	83	JD0340G-7CPY	JD0320G-6CY
DRD250- ^{**}	1 1/2" NPT-F	250	41.9 (1064)	27.8 (706)	41.2 (1046)	287	130	JD0340G-7CPY	JD0320G-6CY
DRD325- ^{**}	2" NPT-F	325	41.9 (1064)	27.8 (706)	41.2 (1046)	320	145	JD0340H-7CPY	JD0320H-6CY
DRD400- ^{**}	2" NPT-F	400	41.9 (1064)	27.8 (706)	41.2 (1046)	320	145	JD0465H-7CPY	JD0430H-6CY
DRD500- ^{**}	2" NPT-F	500	41.9 (1064)	27.8 (706)	41.2 (1046)	342	155	JD0900J-7CPY	JD0650J-6CY
DRD700- ^{**}	3" NPT-M	700	52.0 (1316)	31.7 (806)	45.9 (1166)	529	240	JD1300K-7CPY	JD0900K-6CY
DRD800- ^{**}	3" NPT-M	800	52.0 (1316)	31.7 (806)	45.9 (1166)	529	240	JD1300K-7CPY	JD0900K-6CY
DRD1000- ^{**}	3" NPT-M	1000	52.0 (1316)	31.7 (806)	45.9 (1166)	551	250	JD1300K-7CPY	HF3-801-6CU-DG
DRD1200- ^{**}	3" NPT-M	1200	66.5 (1690)	39.7 (1007)	43.2 (1097)	816	370	JD1300K-7CPY	HF3-801-6CU-DG
DRD1600- ^{**}	4" Flg	1600	67.8 (1722)	39.7 (1007)	71.2 (1808)	1279	580	FF4-1201-7CVP-DG	FF4-1201-6CU-DG
DRD2000- ^{**}	6" Flg	2000	67.8 (1722)	39.7 (1007)	71.2 (1808)	1477	670	FF6-1201-7CVP-DG	FF6-1201-6CU-DG
DRD2400- ^{**}	6" Flg	2400	67.8 (1722)	39.7 (1007)	71.2 (1808)	1521	690	FF6-1201-7CVP-DG	FF6-1201-6CU-DG
DRD3000- ^{**}	6" Flg	3000	81.0 (2048)	39.7 (1007)	71.2 (1808)	1609	730	FF6-1201-7CVP-DG	FF6-1201-6CU-DG

Notes:

1. 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].
2. Filter packages recommended based on flowrates not connection size.
3. DRD200 only available 230V/1Ph/60Hz.
4. For reliable operation and to meet warranty conditions, a pre-filter must be installed.

Technical Data

Models	Max Ambient Temperature	Max Inlet Temperature	Min Ambient Temperature	Max Inlet Pressure	Refrigerant
DRD200 - DRD3000	122°F (50°C)	149°F (65°C)	41°F (5°C)	203 psi g [14 bar g]	R407c

Flow Correction Factors

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

Ambient Temperature [C1]	°F	70	80	90	100	110	120	122
	°C	21	27	32	38	43	49	50
	CF	1.22	1.15	1.05	1	0.94	0.79	0.71

Inlet Temperature [C2]	°F	90	100	110	120	130	140
	°C	32	38	43	49	54	60
	CF	1.22	1	0.82	0.68	0.56	0.46

Working Pressure [C3]	psi g	60	80	100	125	150	174	203
	bar g	4	6	7	9	10	12	14
	CFP	0.83	0.93	1	1.07	1.12	1.15	1.18

Notes:

1. Models DRD325 - DRD3000 include the following equipment as standard:
 - multi-functional control panel
 - continuous separation cross-flow heat exchanger (patent pending)
 - zero air loss condensate removal system with adjustable set points
 - dryer cycling control (patent pending)
 - on/off switch with integrated disconnect switch
 - compliant scroll compressor (DRD250 and above)
2. ED3007 Zero Air Loss Drain optional on filters for DRD200 - DRD500.
ED3030 Zero Air Loss Drain optional on filters for DRD700 - DRD2000.
ED3100 Zero Air Loss Drain optional on filters for DRD2400 - DRD3000.
3. For reliable operation and to meet warranty conditions, a pre-filter must be installed.

Replacement Elements

Model	Pre-Filter Element	After-Filter Element
DRD200-A230160- ³	JF0340H-7CPK	JF0320H-6CK
DRD250- ^{**}	JF0340H-7CPK	JF0320H-6CK
DRD325- ^{**}	JF0340H-7CPK	JF0320H-6CK
DRD400- ^{**}	JF0465H-7CPK	JF0430H-6CK
DRD500- ^{**}	JF0900J-7CPK	JF0650J-6CK
DRD700- ^{**}	JF1300K-7CPK	JF0900K-6CK
DRD800- ^{**}	JF1300K-7CPK	JF0900K-6CK
DRD1000- ^{**}	JF1300K-7CPK	6CU51-280 x 1
DRD1200- ^{**}	JF1300K-7CPK	6CU51-280 x 1
DRD1600- ^{**}	7CVP85-250 x 1	6CU85-250 x 1
DRD2000- ^{**}	7CVP85-360 x 1	6CU85-360 x 1
DRD2400- ^{**}	7CVP85-360 x 1	6CU85-360 x 1
DRD3000- ^{**}	7CVP85-360 x 1	6CU85-360 x 1

Note: Filters supplied loose.

Filter packages recommended based on flowrates not connection size.

N/A = Not Available

Replacement element kits include: replacement element, head-to-bowl o-ring, and lube

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



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/faf

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

Village Marine, Sea Recovery, Horizon Reverse Osmosis

Carson, CA
310 637 3400
www.parker.com/watermakers

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

Etten-Leur, Netherlands
+31 76 508 5300
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www.kittiwake.com

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