PDG

Refrigeration Dryers

7 - 110 m³/min

Parker Hiross

ENGINEERING YOUR SUCCESS.

Compressed air contains water, oil and dirt

The problem

Compressed air is an essential power source that is widely used throughout industry. This safe, powerful and reliable utility can be the most important part of your production process. However, your compressed air will contain water, dirt, wear particles, bacteria and even degraded lubricating oil which all mix together to form an unwanted abrasive sludge. This sludge, often acidic, rapidly wears tools and pneumatic machinery, blocks valves and orifices causing high maintenance and costly air leaks. It also corrodes piping systems and can bring your production process to an extremely expensive standstill! Only compressed air that is totally clean and dry will ensure maximum savings.

Corrosion

Unwanted abrasive sludge

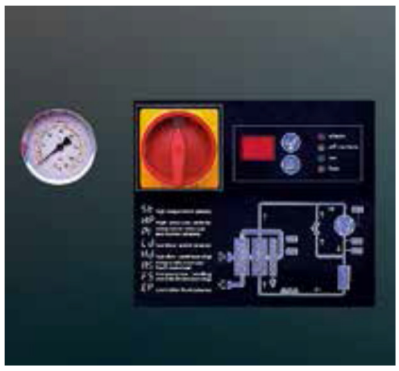
Damaged tools

The solution

All of these costly problems can be avoided by installing a Parker Hiross PDG compressed air refrigeration dryer package complete with Parker compressed air filtration. The packages are suitable for use with any compressor type and provide air quality to ISO 8573.1 Class 1.4.1.

Benefits

Clean, dry compressed air.



Sophisticated Control

This microprocessor control (standard from PDG1100) offers ease of use, accurate control and simplified maintenance. The Cold Mass function furthermore allows significant energy savings when operation in stand-by. The hot gas by-pass valve, with its modulating 0-100% operation, ensures that the dryer always works at optimum conditions, even under varying loads.

Easy to Install

PDG offers the most compact dimensions in its call, making it very easy to position and install.
The dryer arrives pre-programmed, and once installed it is ready to operate, requiring no further programming.

Easy to Use

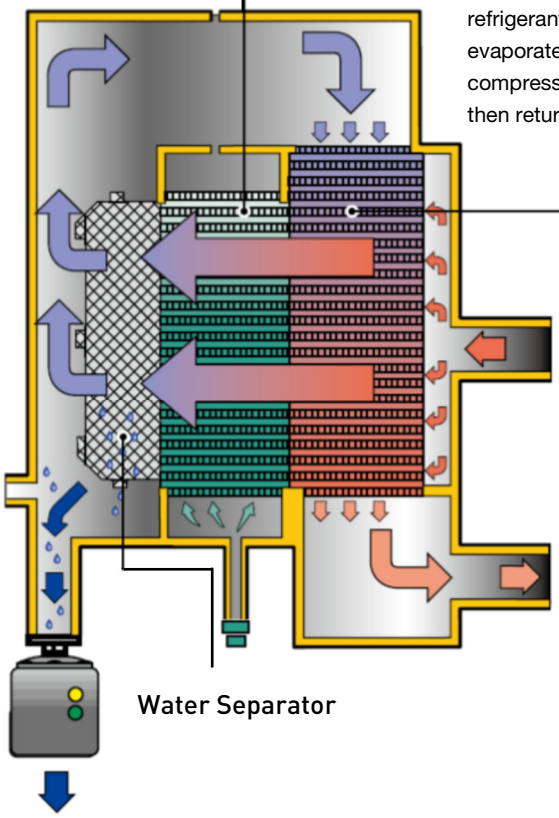
PDG has been designed to be able to operate in even the most extreme conditions. This is backed by a 60˚C maximum inlet temperature and a 50˚C maximum ambient temperature.
Dryer maintenance has been significantly simplified thanks to full frontal access to all major components, as well as a drain niche offering easy access to the condensate drain.

High Reliability

PDG offers years of trouble-free operation.
The robust aluminium heat exchanger stands up to the rigors of industry.
The advanced compliant scroll compressors are notably, more reliable than traditional solutions.
The condenser pre-filter, standard from PDG2600, improves performance and reduces maintenance.

DRYPACK HEAT EXCHANGER

PDG offers the advanced DryPack heat exchanger.
The unique all-in-one design, in corrosion resistant aluminium, is very compact reduces pressure drops and permits notably high reliability levels.
A modular design philosophy, using up to 6 DryPacks, offers high flexibility and reduces maintenance.
DryPack furthermore features a unique patented concept which positions the air-to-air, evaporator and demister stages in a row: This allows a process known as Continuous Active Separation, whereby the condensate is immediately removed, in a continuous manner, along the entire length of DryPack.
The benefit for the user is a guaranteed low dew point and maximum efficiency.
The oversized demister ensures that, unlike typical dryer solutions, a low dew point is maintained even at partial air flow conditions.



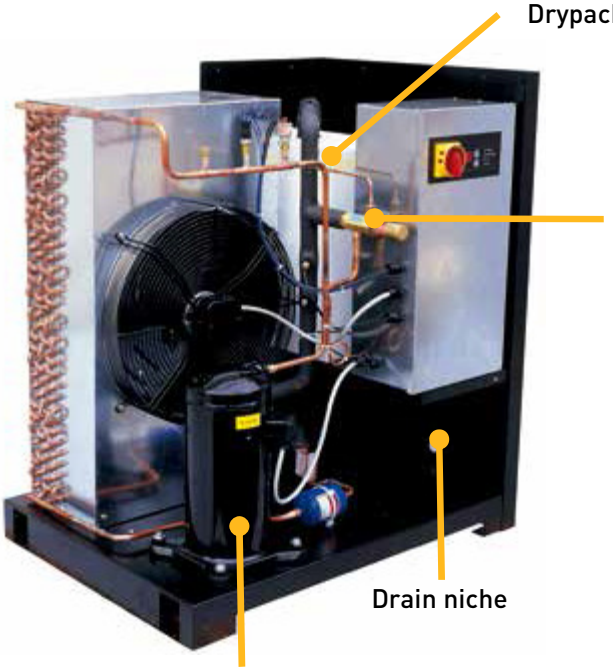
The Inside story

Electronic Controller

Models PDG1100 & above, are fitted with an electronic control system. A keypad provides total control of the dryer and allows access to performance and service functions. The digital display shows dryer performance and alarm conditions for high refrigerant pressure, high refrigerant temperature, high and low dewpoint and compressor faults. Manual, electrical isolation and a full refrigeration system mimic display is also included on the front panel.

Simple Controller

Fitted on Models PDG0700, the simple controller provides on/off operation and visual indication of dryer performance.



Hot gas by-pass Valve

The function of the hot gas by-pass valve is to prevent freezing of the evaporator in low load conditions. It does this by sensing low pressure refrigerant leaving the evaporator and redirecting hot refrigerant gas back to the compressor inlet as required. This ensures optimum dewpoint control under all operation conditions.
PDG dryers use a 100% modulating valve which is pressure operated, providing a quicker response than temperature controlled valves.

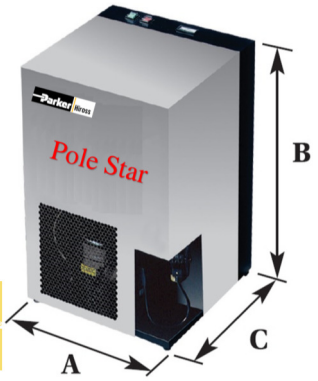
Compliant Scroll Compressors

A first in refrigeration drying, PDG features compliant scroll compressors (standard from PDG2600). The scroll design offers significantly lower power consumptions, leading to a notable reduction in running costs.
The patented compliant technology adds further benefits in the form of remarkably high reliability levels; compliant scroll compressors are nearly indestructible, even tolerating liquid returns; they feature 50% less moving parts reducing the chances of breakage; and the reduced vibration levels increase dryer longevity.
Scroll compressors are also very user friendly, as they are extremely quiet and ensure the dryer requires on pre-heating.

Product Selection and Technical Data

Model	technical data				dimensions (mm)			weight	Pre-filter	Post-filter
	air flow		abs. power	air connec.	width	height	depth			
	m³/h	m³/min	kW		A	B	C	(kg)		
PDG0700	420	7	1.23	1 1/2" BSP	615	791	552	70	GP-080-FX	HE-080-FX
PDG1100	660	11	1.51	2" BSP	920	1015	672	140	GP-120-FX	HE-120-FX
PDG1400	840	14	1.86	2" BSP	920	1015	672	144	GP-150-FX	HE-150-FX
PDG1900	1140	19	1.88	2" BSP	920	1015	672	150	GP-210-FX	HE-210-FX
PDG2600	1560	26	3.45	DN80	1010	1500	1310	420	GP-350-FX	HE-350-FX
PDG3500	2100	35	3.99	DN80	1010	1500	1310	450	GP-350-FX	HE-350-FX
PDG4400	2640	44	5.48	DN100	1010	1500	1310	470	AO-1000F-C-DPK	AO-1000F-C-DPK
PDG6000	3600	60	7.04	DN100	1010	1500	1810	550	AO-1000F-C-DPK	AO-1000F-C-DPK
PDG7300	4380	73	9.65	DN150	1010	1500	1810	580	AO-1300F-C-DPK	AO-1300F-C-DPK
PDG9000	5400	90	10.71	DN150	1010	1500	1810	590	AO-1950F-C-DPK	AO-1950F-C-DPK
PDG11000	6600	110	12.42	DN150	1010	1500	1810	660	AO-1950F-C-DPK	AO-1950F-C-DPK

Performances refer to air at FAD 20°C/1bar A, and the following working conditions: air suction 38°C/60%RH, 7 barg working pressure, pressure dew point in accordance with ISO8573-1, 38°C cooling air temperature, 42°C compressed air inlet temperature.
All models supplied with refrigerant R407C.

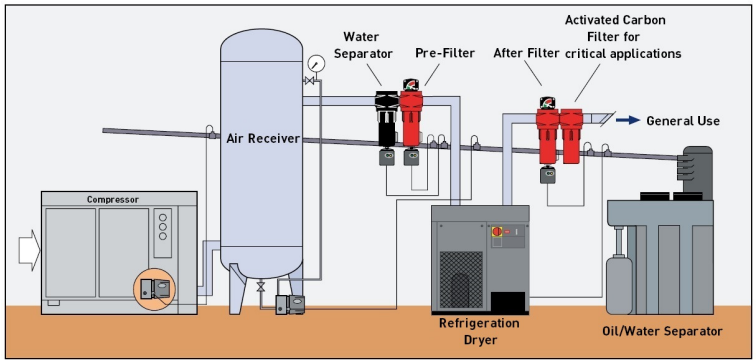


Air flow correction factors for differing working conditions

A) Working pressure	Barg	3	4	5	6	7	8	9	10	11	12
correction factors		0.69	0.79	0.88	0.95	1	1.05	1.09	1.12	1.15	1.18
B) Air inlet temperature	°C	30	35	40	42	45	50	55	60		
correction factors		1.48	1.29	1.08	1	0.90	0.75	0.63	0.52		
C) Ambient temperature	°C	20	25	30	35	38	40	45	50		
correction factors		1.16	1.12	1.08	1.03	1	0.98	0.80	0.52		

To obtain the actual air flow multiply the nominal air flow by the above correction factors (ie. Air flow x A x B x C). PDG dryers can operate up to ambient temperatures of 50°C and inlet temperature of 60°C.
For a precise selection always refer to the software selection program or contact your Parker partner.

Max.	12 bar g	
Max.	60°C	
Max.	50°C	
Power Supply	PDG0700	230V/1Ph/50Hz
	PDG1100~11000	400V/3Ph/50Hz



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