The New Air Dryers
NDL SERIES

THE NEED FOR CLEAN, DRY AIR

Compressed air is an important source of energy that is widely used throughout industry. This safe and reliable utility is often the most important part of a production process.

However, atmospheric air contains water vapour, which condenses to water droplets when the compressed air cools.

Water and dirt in compressed air causes a major inconvenience and cost to the user, as it may damage the equipment connected to the compressor. At the same time, moisture and heat from the compression of the air create favourable conditions for growth of microorganisms.

If the compressed air is in direct contact with human beings, animals, food or medical equipment, hygiene problems may arise.

Benfits and Savings

Guaranteed performance
- The dryer meets the highest standards of purity and delivers air in accordance with ISO 8573:1 – 2001, Class 2 dirt (1 micron) and Class 2 water (-40°C pressure dewpoint).

Reliability
- Condensate collected in bottom of dryer column is vented with every dryer cycle
- Removal of condensate by timed solenoid valve improves reliability
- Small amounts of condensate are exhausted frequently, eliminating the risk associated with float drain malfunction
- Purge adjustment screws are located after fine dust filtration, eliminating the possibility of contamination and loss of performance

Reduced energy
- Probably the most energy efficient product of it's type*
- Elimination of external filters and improved design reduces pressure drop through the dryer by 60%*
- 7.8% less energy consumed by the compressor
- 20% less purge air for regeneration*
- *As compared to comparable desiccant air dryers with external Filtration

Simplified maintenance
- Integral filter/desiccant cartridge can be easily exchanged with no need for special tools
- Less than 15 minutes gets you back on line quickly

The Solution

All of these costly problems can be avoided by installing a F-DGS ultra high purity, desiccant air dryer.

To ensure both clean and dry compressed air, F-DGS offers a new, state of the art range of adsorption air dryers. Designed to deliver clean air to the point of application, they are – unlike many types of dryers in the market – designed for continuous operation.

The advanced design is highly innovative – utilising modern materials and incorporating new, patented features to deliver high quality compressed air continuously, with increased reliability, lower running costs and simplified maintenance procedures.

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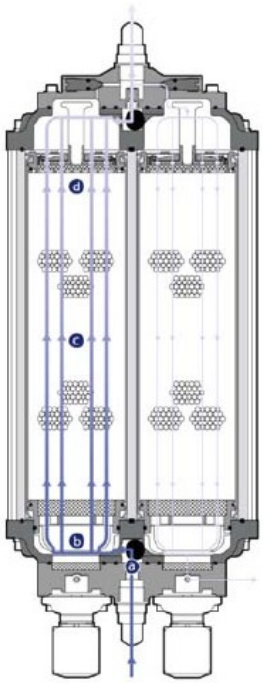
How it works

The F-DGS dryer uses the pressure swing adsorption principle of drying compressed air, utilising two identical columns each containing a hygroscopic desiccant bed. Wet air from the compressor after-cooler enters the dryer through a shuttle valve (a) and is directed into one of the desiccant columns. Each column contains a unique (and patented) desiccant cartridge which incorporates inlet and outlet filtration. Bulk liquids (water) and particles are removed by the filtration/separation stage (b) which is located on the inlet to the cartridge. Water is retained in a “quiet zone” until the column is regenerated (when it will be vented to atmosphere as the column is depressurised).

Following the filtration stage, air passes through the desiccant bed (c) where any remaining moisture is adsorbed. After drying, the air passes through a particle filter (d), which retains any remaining desiccant particles that may have been carried through the system (<1 micron / ISO 8573.1 class 2 for dust). Simultaneously, a small amount of dry air is counter-flowed down through the other cartridge and exhausted to atmosphere, removing the moisture and thus regenerating the desiccant. The dryer is controlled by a PLC which periodically switches the solenoid valves when the compressor is running, reversing the function of each column and therefore ensuring the continuous supply of dry air.



Models and characteristics

Models	Outlet flow rate (L/min) based on 7 barg inlet pressure	Total air inlet flow required (L/min) at 7 barg	Air loss for regeneration (L/min)	Connection (BSPP)	Size (mm) H x W x D	Weight (kg)
NDL-010	70	85	15	G 3/8	447 x 241 x 160	8.3
NDL-020	141	169	28	G 3/8	447 x 241 x 160	8.3
NDL-030	283	339	56	G 3/8	647 x 241 x 160	12.8
NDL-040	425	509	84	G 3/8	897 x 241 x 160	16.4
NDL-050	680	816	136	G 3/8	1097 x 241 x 160	19.3

Notes:

- Above flow rates are based on an air inlet pressure of 7 barg (100psig) and temperature of 21°C (70°F)
- Where the air source is from an oil lubricated compressor, we recommend that a 0.01 micron coalescing filter and also an activated carbon filter be installed, to reduce the (non-methane) hydrocarbons.

Specification	
ISO 8573 – 1: 2001 Quality Classes	Class2 : Dirt : 1µ Class 2: Water: -40°C (-40°F) PDP
Minimum working pressure	4 barg (58 psig)
Maximum working pressure	16 barg (232 psig)
Electrical Supply	100 – 240VAC / 50 – 60Hz
Minimum inlet temperature	1.5°C (34.7°F)
Maximum inlet temperature	50°C (122°F)

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