

Gardner **Denver**

GARDNER DENVER | COMPRESSORS

Air Quality



Compressed Air Quality

The quality of compressed air used in the food industry is of utmost importance as even the slightest traces of contamination can result in altered or polluted product batches and the risk of health hazards for consumers.

To ensure best practice, the International Standards Organization (ISO) established a new class of air quality for sensitive industries such as food and beverage. Known as Class 0, it is the most stringent air quality class, limiting oil contamination in liquids, aerosols and vapors.

Why should you choose Gardner Denver to meet your air quality needs?



Global Experts

We have well trained, experienced people worldwide to be your partner for all compressed air applications. We love your business!



Low Life Cycle Costs

Keeping your energy bill down is one of our targets. We understand the complex architecture of industrial manufacturing and will support you by analyzing your real needs and offering a technically-advanced and cost-efficient solution.



After Sales Support

We don't leave you alone after a project has been completed. Extended warranty, efficient service and maintenance programs are tailored to your needs.





Experience **Proven Results**
with Gardner Denver—the Leader in
Durability, Reliability & Efficiency



Gardner Denver compressors offer everything needed to set up a stable, clean & efficient compressed air system

Air Experts

Compressed air purification equipment is essential in the food and beverage industry where air purity is necessary for the integrity of products and processes. It must deliver uncompromising performance and reliability with the right balance of air quality and cost of operation.

- The Gardner Denver rotary screw compressors range from 5-500 hp and are designed to meet the highest requirements. As a result, Gardner Denver compressors are extremely energy efficient, quiet and reliable.
- Modern production systems and processes demand increasing levels of air quality. Our complete Air Treatment range ensures the highest product quality and efficient operation.



Gardner Denver's engineers were instrumental in the development of the international standards for compressed air quality. (ISO)

High Quality Compressed Air

The oil-free EnviroAire ranges from 15-160 kW and ensures high quality and energy-efficient compressed air for use in a wide range of applications. The totally oil-free design eliminates the issue of contaminated air, reducing the risk and associated cost of product spoilage and rework. This is particularly crucial for those customers operating in sterile environments.



OIL FREE

ISO CLASS : 0
PLUS SILICONE FREE
ISO 8573-1 (2010)

All oil-free Gardner Denver compressors used in the food and beverage industry satisfy the demands of Class 0.



Air Quality (Purity)

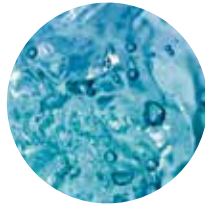
Determining the right air quality for your compressed air system

Knowing the proper air quality level required for successful production is an important factor in containing compressed air energy and other operating costs. The quality of air produced should be guided by the degree of dryness and filtration needed and by the minimum acceptable contaminant level to the end uses.



Air purity is outlined in ISO8573-1:2010, the international standard for Compressed Air Quality

ISO8573 is the primary document used which specifies the amount of contamination allowed in each cubic foot of compressed air. ISO8573-1 lists the main contaminants as Solid Particulate, Water and Oil.



Specifying air purity in accordance with ISO8573-1:2010

When specifying the purity of air required, the standard must always be referenced, followed by the purity class selected for each contaminant (a different purity class can be selected for each contaminant if required).

An example of how to write an air quality specification is shown at right.



SOLID PARTICLES/DUST

Class	Max. particle count per m ³ of a particle size with d* (µm)		
	0.1<D≤0.5	0.5<D≤1.0	1.0<D≤5.0
0	Consult Gardner Denver		
➔ 1	≤20,000	≤400	≤10
2	≤400,000	≤6,000	≤100
3	not specified	≤90,000	≤1,000
4	not specified	not specified	≤10,000
5	not specified	not specified	≤100,000

Class	Particle concentration* Cp
	MG/M ³
6	0 < Cp ≤ 5
7	5 < Cp ≤ 10
X	Cp > 10

HUMIDITY & LIQUID WATER

Class	Pressure dew point	
0	Consult Gardner Denver	
1	≤-70°C	≤-94°F
➔ 2	≤-40°C	≤-40°F
3	≤-20°C	≤-4°F
4	≤3°C	≤38°F
5	≤7°C	≤45°F
6	≤10°C	≤50°F

Class	Concentration of liquid water*
	CW (G/M ³)
7	Cw ≤ 0.5
8	0.5 < Cw ≤ 5
9	5 < Cw ≤ 10
X	Cw > 10

OIL

Class	Total oil concentration* (liquid, aerosol, and vapor)	
	MG/M ³	PPM W/W
0	Consult Gardner Denver	
➔ 1	≤0.01	≤0.008
2	≤0.1	≤0.08
3	≤1.0	≤0.8
4	≤5.0	≤4
X	> 5.0	>4

*At reference conditions: 68°F (20°C), 14.5 psia (1 bar), 0% relative humidity

ISO8573-1:2010

Quality Class Configurations



Moisture Separator



Quality Class -.8.-

Low grade shop air

Wet Air Receiver

Moisture Drain

Dry Air Receiver

Quality Class 3.4.4

General shop air
Air tools
Sand blasting

Particulate Pre-Filter

Refrigerated Dryer

Coalescing Filter

Demand Expander

Quality Class 1.4.2

Paint spraying
Powder coating
Packaging

Particulate Pre-Filter

Refrigerated Dryer

Coalescing Filter

Filter Particulate

Dry Air Receiver

Demand Expander

Quality Class 1.4.1

Food and beverage
Laboratories

Particulate Pre-Filter

Refrigerated Dryer

Coalescing Filter/
Filter Particulate

Vapor Filter

Dry Air Receiver

Demand Expander

Quality Class 1.2.1 or 1.1.1

Food and beverage
High-tech clean rooms
Pharmaceuticals
Chemical industries
Laboratories

Particulate Pre-Filter

Coalescing Filter/
Filter Particulate

Particulate Filter

Vapor Filter

Dry Air Receiver

Demand Expander

Desiccant Dryer

The leader in every market we serve by continuously improving all business processes with a focus on innovation and velocity

Results

Optimized System Design

The quality of air required throughout a typical compressed air system can vary. The extensive range of purification equipment available from Gardner Denver allows the user to specify the quality of air for every application, from general purpose ring main protection, through to critical clean dry air (CDA) point of use systems.

Gardner Denver has comprehensive ranges of purification equipment available to exactly match system requirements, ensuring both capital and operational costs are kept to a minimum.

Distribution Network

We rely on local independent distributors to deliver our products and services to market, a philosophy that has worked for us for decades.

An extensive distribution base ensures superior local service

- Guidance on selecting the right compressed air solution for specific applications.
- Providing expert routine maintenance through factory trained service personnel.
- Professional air audits to identify cost savings.

**Gardner
Denver**[®]


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