



# **Gardner Denver**

## **-20°C PDP Refrigerati on Dryer**

Revolutionary regenerative refrigerated dryer  
GDMT Dryer Series

**PROTECT** **10**  
years  
Extended Warranty for GD Compressors



High efficiency  
ISO Class 3 Air





## Energy efficient sub zero refrigeration dryers

### High quality in-house air treatment manufacturing

A modern production system and process demands increasing levels of air quality, and compressed air operators need to ensure that the downstream equipment also delivers on it 100%.

The new Air Treatment portfolio manufactured by Gardner Denver utilising the latest technology provides an energy efficient solution at lowest life cycle costs. The same quality, performance, and efficiency standards delivered by the compressors can now be enjoyed from the Air Treatment range.

Investment in the design and manufacture of our product range, in addition to delivering a strong support structure, ensures that compressed air operators don't need to worry about the quality of their compressed air – quality that is key to ensuring maximum production efficiency and investment protection.

### Why choose a sub zero refrigeration dryer?

The revolutionary GDMT dryer is the only regenerative refrigerant dryer available in the compressed air market today. It combines the sub zero pressure dew point (PDP) of a typical regenerative desiccant dryer, with the low operating and energy costs of a refrigerant dryer, to provide an extremely low total cost of ownership (TCO).

Sub zero air dryers take clean, dry air to new levels of cost-efficiency across a broad spectrum of operating conditions.

**We have further expanded our proven technology to include the latest GDMT266 model, offering best-in-class total cost of ownership in PDP sub-freezing applications.**



Proactive real-time monitoring protects your compressed air system for absolute security.

“Gardner Denver  $-20^{\circ}\text{C}$  PDP regenerative refrigeration dryers are the first dryer technology that provides a  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ) pressure dew point at 70% lower energy costs.”

### Why class 3 air quality is critical

Saturated air, aerosols, and water can compromise efficiency and raise maintenance costs. Class 3 air helps protect against:

- Corroded air storage and distribution systems
- Damaged valves, cylinders, tools and production equipment
- Ruined products or packaging
- Bacterial growth

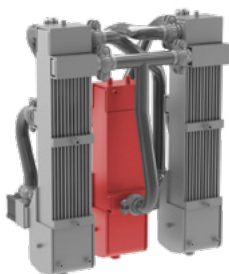
### Optimised for Class 3 air quality

Many applications require very dry, high-quality air with sub zero dew points. Gardner Denver’s desiccant dryers are the best option for the most stringent requirements – ISO Class 1-2 with a pressure dew point (PDP) as low as  $-70^{\circ}\text{C}$  ( $-94^{\circ}\text{F}$ ). However, ISO Class 3 air, with a PDP of  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ), is sufficient for a large portion of the market. For applications that only require Class 3 air, we’ve expanded our family of high-quality air dryers with our GDMT dryers. They combine the ease of maintenance and operation of a refrigerated dryer with the sub zero pressure dew points typically associated with a desiccant dryer.

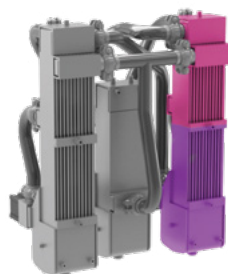
### Sub zero technology

Gardner Denver GDMT dryers are the first dryer technology that provides a  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ) pressure dew point at 70% lower energy costs, combining multiple technology solutions into one machine, the ground-breaking GDMT dryer provides amazing results with the lowest TCO compared to every other dryer on the market.

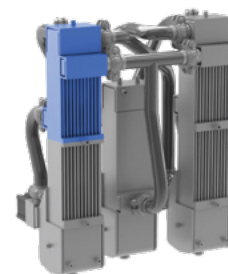
### Maximise Air-Air Drying - Minimise Energy Cost



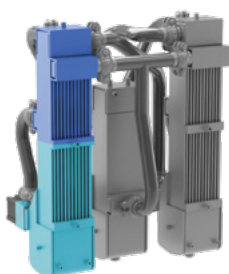
Common Pre-cooler - removes 85% of the moisture from the air.



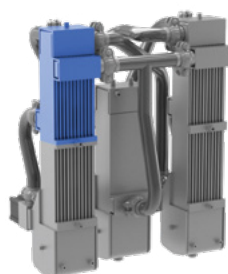
Air heat energy regenerate the chamber and as the defrost occurs the air temperature is also lowered and further dried.



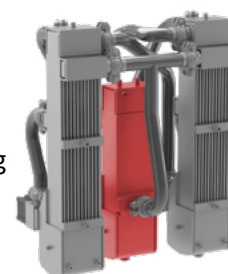
Air enters the drying chamber and Air-Air heat exchange drops the air temperature below freezing (frosting occurs)



Sub Zero Deposition chamber at  $-20^{\circ}\text{C}$  PDP (refrigerant-air heat exchanger)



Air-Air heat exchange! Reheating the air while maintaining  $-20^{\circ}\text{C}$  PDP Dryness



The air exits the dryer dried to  $-20^{\circ}\text{C}$  PDP and a temperature of  $+25^{\circ}\text{C}$



## Innovative design, efficient operation

### Lower maintenance costs

The GDMT dryer has no costly consumables that require periodic replacement such as drum wheels or desiccant beads. Also, no external heaters or blowers are required for regeneration – normally required for inlet temperatures below 20°C – reducing the need for high-maintenance equipment.

### Increases productivity

Decrease downtime and increase plant productivity as the GDMT dryer is designed for optimised inspection and maintenance with removable side panels. Plus, the advanced controller permits remote viewing of critical parameters.

### Improved efficiency

Typical desiccant dryers use upwards of 15% purge air for regeneration, which equates to 15% of the energy cost of the compressor. The GDMT dryer does not require purge air, eliminating this wasted energy cost.

Smart solenoid drain valves are actuated based on the condensate level to ensure complete drainage removal during each cycle without wasting compressed air.

### GDMT Dryers Reduce Cost of Ownership

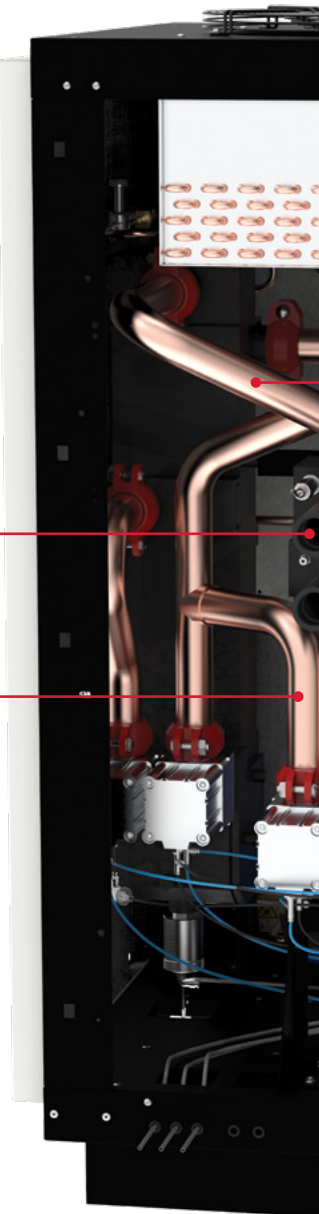


The GDMT Dryer offers a lower total cost of ownership compared to other dryer technologies. Typical TCO profile illustrated based on 5 years. Our latest GDMT266 offers best-in-class TCO in PDP sub-freezing applications.

### How -20°C PDP refrigeration dryers work

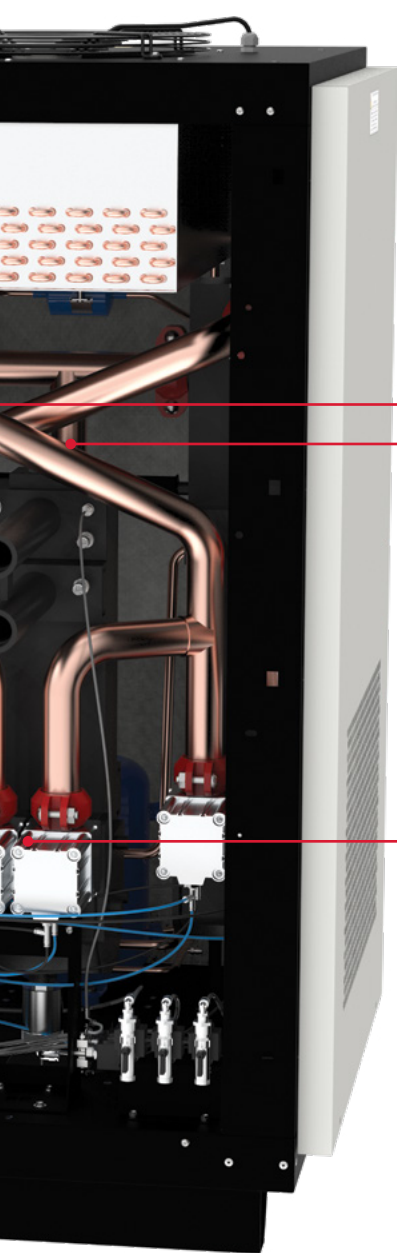
**PRE-COOLING:** Air enters the dryer through the pre-cooler/re-heater, where it is cooled and dried to 15°C (59°F) PDP, removing 85% of the moisture content in the air.

**REGENERATION:** Leaving the pre-cooler/re-heater, the air enters the first heat exchanger for regeneration by removing a thin layer of frost that has accumulated on the inner walls during the previous drying cycle. Simultaneously, the air is cooled and dried to 3°C (37°F) PDP. High-performance, low-maintenance switching pneumatic valves reliably control the drying and regeneration cycles. Victaulic connections ensure leak-free and eliminate thermal stress during operation.





“With up to 40% smaller footprint, the GDMT dryer uses less floor space and is fully compatible with all compressor types.”



**DRYING:** With only 15% of the of the moisture remaining, the air now enters the sub zero dryer heat exchanger where it is cooled and dried to -20°C (-4°F) PDP. The removed moisture begins to form a thin layer of frost on the inner walls of the heat exchanger.

**REHEATING:** The air dried to -20°C (-4°F) PDP is reheated before exiting the dryer in two steps. First, the air re-enters the upper part of the second heat exchanger and is heated by the incoming air to -5°C (23°F) while still maintaining a -20°C (-4°F) PDP.

**REHEATING:** Next, the air re-enters the common pre-cooler/re-heater unit where the air is heated to 25°C (77°F) from the incoming air. The air exits the dryer with a -20°C (-4°F) PDP.

### Reduced equipment / operating costs

Since the GDMT dryer does not consume purge air, 100% of the air supplied by the compressor is available downstream to the dryer. This eliminates the need to upsize the compressor to compensate for the dryer’s purge requirements, saving both equipment and operating costs.

### Installation made easy

With up to 40% smaller footprint, the GDMT dryer uses less floor space and is fully compatible with all compressor types (both oil-flooded and oil-free) without requiring any costly modifications to the air compressor or downstream particulate filtration.



### Applications & industries:

- Air agitation
- Air bearings
- Air gauging
- Conveying granular products
- Food & beverages (non-direct air contact)
- Instrument air
- Sand blasting
- Piping exposed to below freezing ambients

# The GDMT dryer advantage

## iConn Industry 4.0 solution

iConn is the smart, proactive real-time monitoring service that delivers in-depth and real-time knowledge on the system to compressed air users.



- ✓ Advanced remote analysis
- ✓ Predictive – evaluates historic data
- ✓ Maximises energy efficiency
- ✓ Optimises compressor performance
- ✓ Reduces downtime
- ✓ Works as an open standard
- ✓ Free on new compressors – can be retrofitted
- ✓ Proactive maintenance



## Precision control for optimised performance

Delivering Class 3 air quality cost-effectively requires advanced logic integrated with precise timing. The Xe-90 controller manages drying efficiency and air quality automatically. It monitors up-to-the-second operating conditions and provides precise control over continuous drying and regenerating cycles to ensure a constant -20°C (-4°F) PDP, regardless of changes to compressed air demand or ambient temperatures. Advanced real-time monitoring of the air system ensures air quality and efficiency with full integration with the plant system.

## Delivering amazing benefits to customers

Feature / Attribute	HOC	Drum	Desiccant	Sub Zero
Delivers Class 3 air quality dry air at -20°C (-4°F) PDP	✓	✓	✓	✓
Protects pipes from freezing when they are exposed to low ambient temperatures	✓	✓	✓	✓
Compatible with all compressor types (oil-flooded and oil-free)	✗	✗	✓	✓
Provides 100% compressed air availability over the full range of compressor utilisation (20-100%)	✓	✓	✗	✓
Operates without drying agents that require particulate filtering	✗	✗	✗	✓
Low maintenance costs	✗	✗	✗	✓
No additional cost required for compressor modifications	✗	✗	✓	✓
Low pressure drop (max 0.2 barg)	✗	✗	✗	✓
No post filter required	✗	✗	✗	✓



## The Gardner Denver Protect 10 Warranty and Service programmes

Cover the airend for up to 10 years.

**PROTECT** **10**  
years  
Extended Warranty for GD Compressors



### Standard features include:

- Removable panels for easy service access
- IP42 electrical protection
- Solenoid no-loss drain with electronic feedback to the controller
- Xe90D programmable controller
- Victaulic® connections for easy maintenance
- R452A refrigerant (R449A optional)
- Modbus Connectivity
- Remote monitoring iConn connectivity
- Integrated heaters for low load (below 20% flow and low inlet temperature)

### Optional features include:

- Low temperature kit (ambient and/or inlet)
- Outdoor modification/IP54 protection
- Air Cooled and Water Cooled (available for GDMT266)

## Technical data

### GDMT Dryer Series

Model	Capacity		Operating power	Dimensions L x W x H		Weight	
	m <sup>3</sup> /hr	SCFM		mm	in	kg	lb
GDMT60	360	212	1.46	1063 x 899 x 1767	41.8 x 35.4 x 69.6	352	776
GDMT70	420	247	1.78	1063 x 899 x 1670	41.8 x 35.4 x 65.7	352	776
GDMT266	1600	941.7	5.75	1500 x 1400 x 1898	59.0 x 55.0 x 75.0	750	1653

\* Performances refer to air suction of FAD 20°C (68°F), 1 bar (14.5 psig), and the following operating conditions: 7 bar (100 psig) working pressure, -20°C (-4°F) pressure dewpoint, 25°C (77°F) ambient temperature, 35°C (95°F) compressed air inlet temperature.



## Global Expertise

The GD rotary screw compressor range from 2.2 – 500 kW, available in both variable and fixed speed compression technologies, are designed to meet the highest requirements which the modern work environment and machine operators place on them.



The oil-free EnviroAire range from 15 – 355 kW provides 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.



A modern production system and process demands increasing levels of air quality. Our complete **Air Treatment Range** ensures the highest product quality and efficient operation.



Compressor systems are typically comprised of multiple compressors delivering air to a common header. The combined capacity of these machines is generally greater than the maximum site demand. To ensure the system is operated to the highest levels of efficiency, the **GD Connect** air management system is essential.



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For additional information please contact Gardner Denver or your local representative.

Specifications subject to change without notice.