

# Atlas Copco

Quality Air Solutions



## XD Series

Heat of compression reactivated adsorption dryers



# Total capability, total responsibility

Right at the heart of your business, Atlas Copco delivers quality compressed air for superior operational capacity. From compressed air generation to point of use, you can choose from our wide range of products to create a complete compressed air system tailored to your specific needs. All Atlas Copco products are engineered to integrate seamlessly, ensuring the highest level of reliability and energy efficiency.

Atlas Copco has been setting the industry standard in compressed air technology for more than a century. Our dedication to offer the best products and services is not limited to plant air solutions, but extends to air treatment solutions, meeting the exact needs of the specific process. Around the clock and around the globe, the XD adsorption dryer series is proving to be a trusted partner for state-of-the-art high capacity air treatment.



## CHOICE

Atlas Copco masters each drying principle and offers the most energy efficient solution for each application.



## TAILORING

At Atlas Copco we provide the industry's broadest portfolio of offerings to help you achieve the most efficient compressed air system and optimize your production process at the same time.



## ENERGY EFFICIENCY

Heat of compression is the energy stored in the air during the physical compression process. By using this freely available energy source to regenerate the desiccant, energy consumption and costs are saved.

# Energy

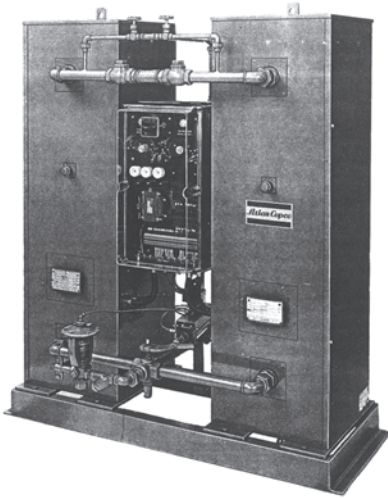
*We are committed to your superior productivity through interaction and innovation.*

# Reliability



## EXPERTISE

Since 1903 Atlas Copco's philosophy has been to continually improve our products through intensive R&D, with the aim to maximize the value for our customers. Since the late 60's we have been developing heat of compression dryers to match almost any size and type of oil-free compressors. What's more, we are most likely the only company that can offer a complete range of heat of compression reactivated adsorption dryers. With the patented XD -100°F, Atlas Copco is also the first to offer a heat of compression adsorption dryer for the extremely low dewpoint range.



## TRUBLE-FREE INSTALLATION & COMMISSIONING

The modular XD design is easy to install. Simply put the piping skid on a concrete floor together with the two drying vessels and just connect the flanges in between. Only one pipe is needed to connect the compressor to the dryer.



## THE PROFESSIONAL FOLLOW-UP

Service Contracts make sure you get the right maintenance, immediate response and genuine spare parts... all over the globe.

# Safety



## COMPLETE SAFETY

When an XD dryer is combined with a Z compressor, your process, products and the environment are safeguarded from contamination. Z compressors are the only air compressors TÜV-certified as "oil-free" (ISO 8573-1 CLASS 0). Furthermore, XD-G units are equipped with an emergency back-up mode that allows the dryer to be fed with pre-cooled compressed air. Even under the most adverse operating conditions, Atlas Copco XD dryers keep your production going.



# State-of-the-art, energy-free drying

Removing moisture from compressed air even in the harshest conditions, Atlas Copco's XD adsorption dryers eliminate system failures, production downtime and costly repair and service works.

## REDUCED ENERGY COSTS

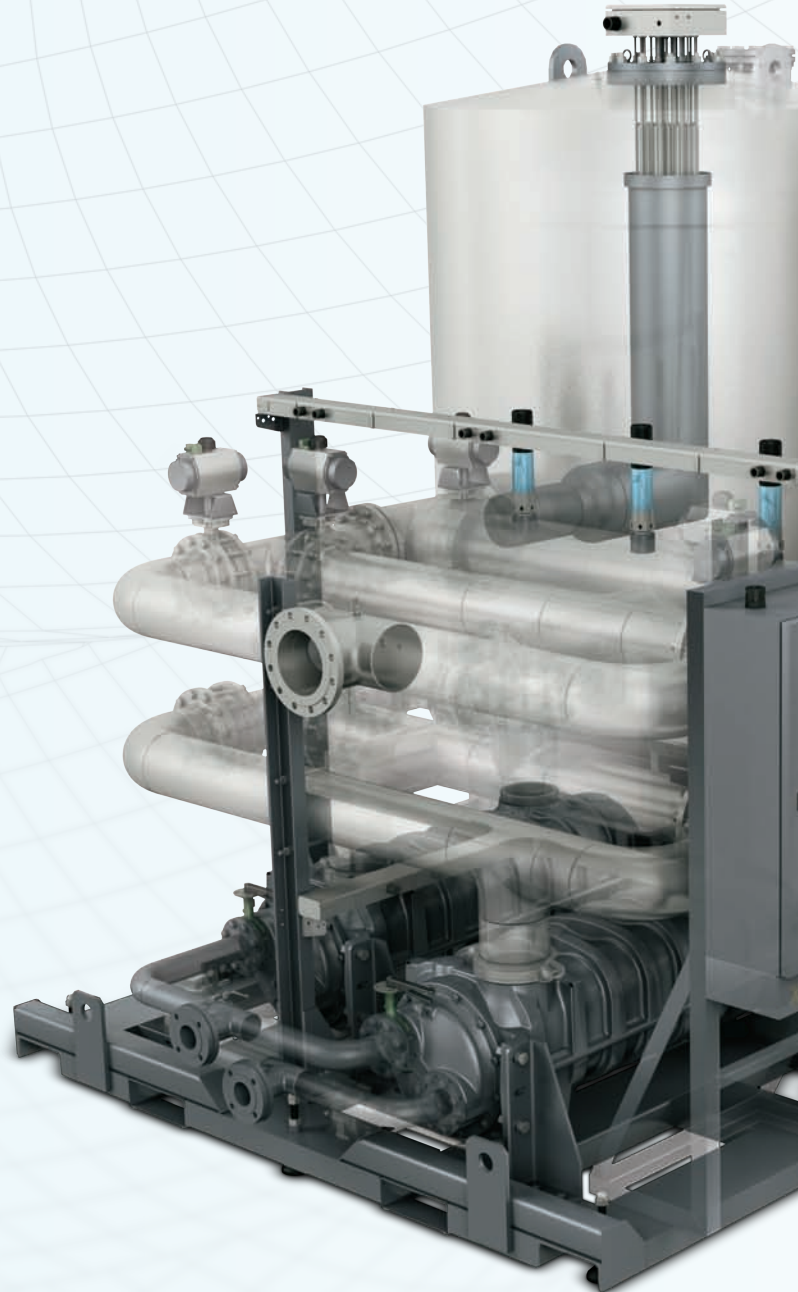
- Atlas Copco's patented zero purge solution does not consume any compressed air. Consequently, there is no need to oversize your compressor installation to account for purge losses.
- The high performance desiccant minimizes energy consumption during the regeneration cycle.
- The low pressure drop of all individual components (coolers, vessels, piping, etc.) results in an overall low pressure drop.
- Combined with advanced Elektronikon® controls, the dynamic heating sequence optimizes the total energy needs.
- The state-of-the-ART control logic (Adaptive Regeneration Technology) actively controls the regeneration parameters, responding to changing working conditions while optimizing the total energy needs.
- The high quality coolers ensure low approach temperatures, leading to lower loads of the desiccant and longer drying cycle times.
- Contrary to competitive solutions, the patented XD Zero Purge can use both of the installed coolers during the complete cycle time, thereby lowering the load on the desiccant and the energy required for regeneration.
- The XD-G versions are equipped with internal heaters that generate the heat exactly where it is required: in the vessels.

## LOW NOISE

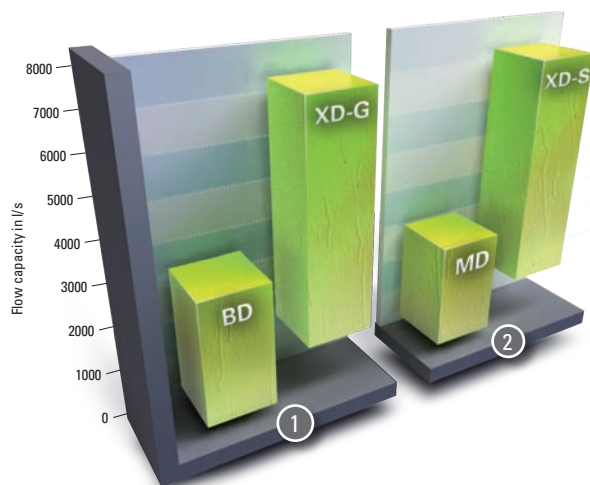
- The patented zero purge dryers exclude all need for purge air.
- As there is no purge, the noise levels are absolutely minimized.

## HIGH CORROSION RESISTANCE

- The unique scope of supply includes standard stainless steel components such as coolers, process valves, heaters and a strainer.
- All piping is fully galvanized.
- The cooler shells and water piping are internally coated.



## FLOW CAPACITY COMPARISON



① General suitability of BD dryers versus XD-G dryers

② General suitability of MD dryers versus XD-S dryers

Thanks to their pioneering technology, XD dryers ensure the lowest pressure drop and lowest energy consumption for the highest possible efficiency – saving you time and money throughout the production process.

### EASY INSTALLATION & MAINTENANCE

- The modular design existing of a flanged piping skid and instrumentation and two flanged vessels allows for easy installation on site, reducing the installation costs to a minimum and guaranteeing quick commissioning.
- There are no hidden costs whatsoever.
- All controls and switches are connected to the Elektronikon controller.
- The controller arrives fully programmed on-site and reduces installation time and cost.
- Minimum down-time during maintenance of the dryer is ensured thanks to the rodding capability of water tubes with the cooler bundles in place.
- Standard forklift slots and lifting eyes.
- Standard DN500/20" manway on all XD -100°F sizes and regular XD sizes  $\geq$  XD 2400.
- Standard Electronic Water Drains with manual drains to allow service while the dryer is in operation.
- As the water separators are built in, no pre-filters are required.
- Small footprint thanks to modular concept.



### RELIABILITY

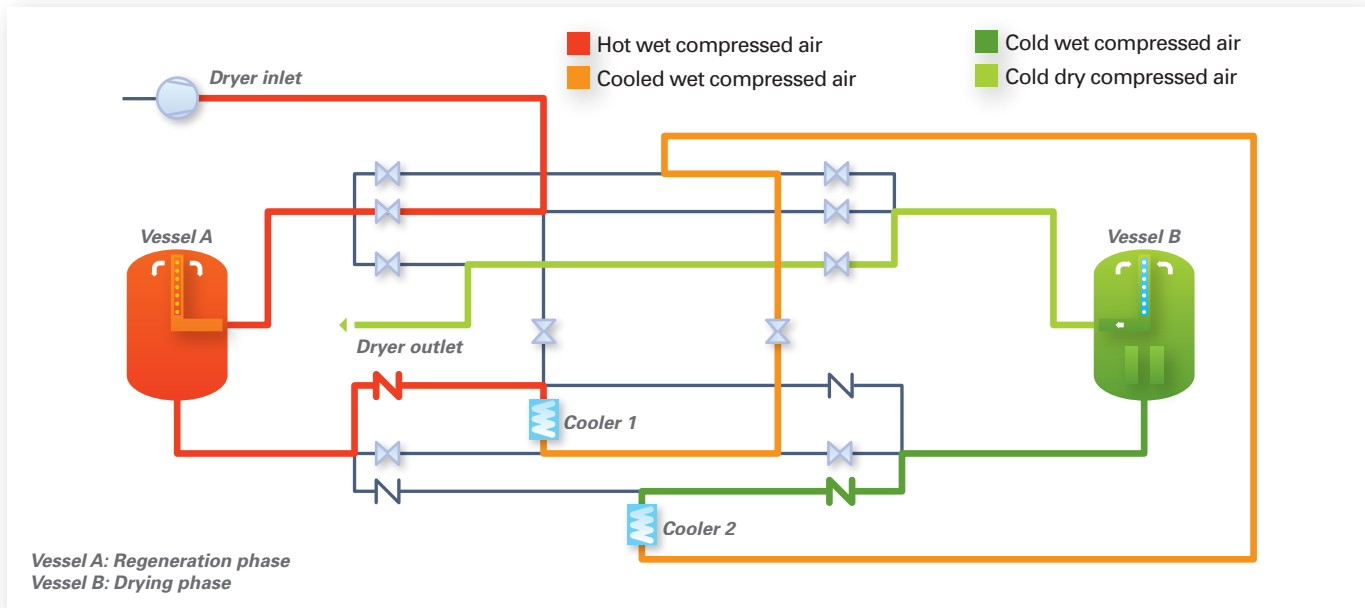
- The high corrosion resistant standard ensures extended lifetime and minimum down-time for maintenance.
- The high performance desiccant has a longer lifetime as it is less sensitive to aging and has a higher resistance to the acid condensate.
- Extended heater protection: temperature sensor, thermostat, minimum flow protection.
- All process stainless steel valves are standard equipped with inductive limit switches, which are integrated in the advanced Elektronikon system.
- The stainless steel coolers are equipped with electronic condensate drains with alarms. All vessels are oversized.
- The extended data measurements are guarded by the Elektronikon, which monitors all critical components as standard: valves, heaters, water drains, air pressure, temperature and flow. This way, low energy operation and immediate feedback in case of malfunctions and safety shutdowns are ensured.
- Double water separation design: water is separated in the coolers as well as inside the vessels.
- The reversed internal flow design of the vessels ensures an optimal distribution of the air flow over the entire width of the desiccant bed. This way, the load on the desiccant is reduced and its life-time increased.
- The design does not compromise on reliability.

# The drying principle

Atlas Copco's XD adsorption dryers use the heat of compression from oil-free compressors to dry compressed air. This heat is used effectively to regenerate the high quality desiccant, significantly

reducing energy and operating costs. As any need for outside energy supply can be eliminated, adsorption is by far the most economical method of compressed air drying.

## TYPICAL AIR FLOW EXAMPLE OF AN XD ZERO PURGE DRYER



## A WEALTH OF POSSIBILITIES

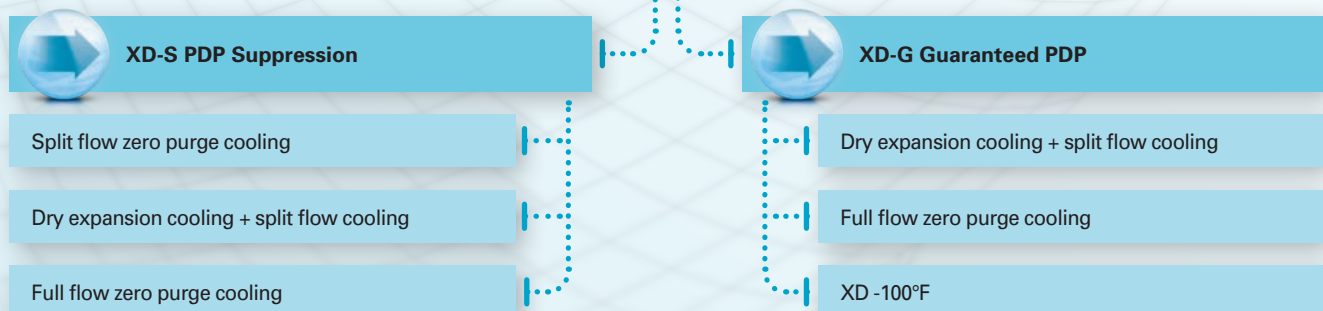
### XD-S models:

Use the heat of compression for regeneration and feature dewpoints of 14°F to -4°F, dependent upon ambient conditions. When combined with the high outlet temperatures of a ZR compressor, XD-S Purge models can achieve a dewpoint of -40°F.

### XD-G models:

Combine heat of compression re-activated adsorption and internal heaters to achieve a constant pressure dewpoint of -40°F / -100°F or lower, regardless of ambient conditions.

XD 1400-7000



Various XD-S/XD-G models are available ranging from 1050 to 7000 l/s (2226 to 14800 cfm). The dryers are designed to produce quality air with negligible pressure drop and, across the range, operate in three cooling modes: split flow zero purge, dry expansion, and full zero purge.

# Built to endure

Efficient air treatment equipment is crucial to reduce the contamination in the air that would otherwise produce corrosion in the pipework, lead to premature pneumatic equipment failure and cause product spoilage.

Incorporating advanced technologies as well as cost saving features, Atlas Copco's XD dryers offer you real energy savings without compromise in production reliability and efficiency.



## HOT AIR INLET

- Heat of compression used for regeneration.
- No energy consumption.



## STAINLESS STEEL COOLERS

- Maximum energy efficiency and extended lifetime.
- Guaranteed easy inspection and maintenance.
- Low pressure drop.
- High water separation.
- Bundles can be rodded in place.



## STAINLESS STEEL INTERNAL HEATERS

- By generating heat only when needed, energy losses are limited.
- Overheating protection and control by Elektronikon on each heater bundle.
- The heated air does not need to pass through any valves, ensuring a reduced chance of valve failure.



## PIPING SKID

- Reduced pressure drop thanks to correctly sized piping diameters and compact build-up.
- Galvanized piping prevents corrosion & eliminates contamination risks.



## WATER-RESISTANT DESICCANT

- Low desorption temperature and energy consumption.
- Easy filling and access via manholes/blind flanges.
- Extended lifetime.



## ELEKTRONIKON

- Easy control & monitoring functions to increase cost efficiency and reliability.
- Fully programmed and tested during production to reduce installation time and costs.



## ELECTRONIC WATER DRAINS WITH STANDARD ALARM

- No loss of compressed air.
- Maintenance-free and trouble-free operation.
- Manual drains allow for easy servicing while in operation.



## DRYING TOWERS

- Reduced pressure drop.
- Built-in water separator to reduce desiccant load and extend the drying cycle.
- Oversized.
- Full size stainless steel strainer.
- Reversed internal flow for optimal flow distribution.



## HIGH PERFORMANCE STAINLESS STEEL VALVES

- High corrosion resistance.
- Controlled by Elektronikon.
- Standard equipped with inductive limit switches with alarm.



## DEWPOINT CONTROL (OPTIONAL, STANDARD ON XD -100°F)

- Reduced heating cycles, reduced energy consumption.
- Dewpoint range: -148°F to +68°F.

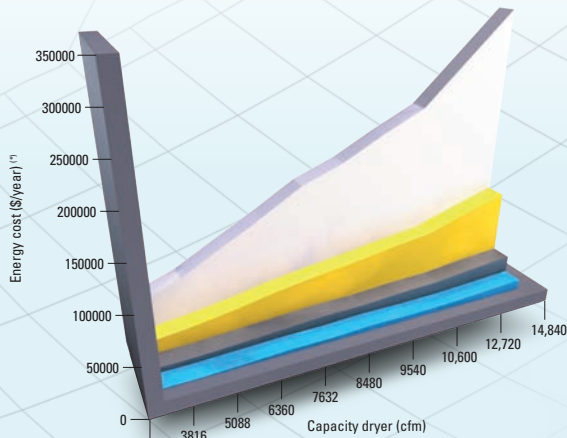
# Towards a greener and cleaner environment

Dirt particles, water, oil, oil vapor and condensate: these contaminants may cause disturbances of production systems as well as lost output or unusable products. The traditional adsorption principle used in the XD design is simple, robust and flexible using compressed air for regeneration while eliminating

any need for an outside energy supply. As no ambient air is used during the regeneration process, any possible contamination of the desiccant layer is eliminated and the air quality is on a par with heatless and heated purge adsorption dryer designs.

## XD VERSUS THE REST OF THE MARKET

Energy consumption for PDP -40°F



(\*) Assumption 1kWh = \$0.07

### UNIQUE SAVINGS

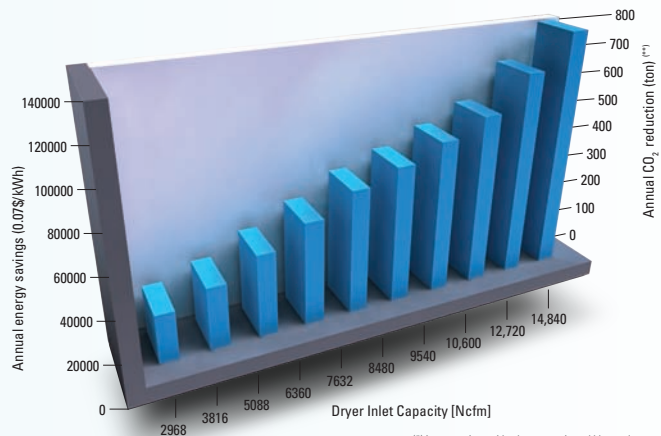
The XD (PDP -40°F) guarantees the required pressure dewpoint at all conditions and delivers dry compressed air, without any dewpoint peaks or temperature peaks. Without compromises on reliability or power consumption, the XD ensures stable superior quality for your application.

- XD-G ZP
- XD-G P
- Blower re-activated type
- Heated purge type

## CLASS ZERO AIR QUALITY(\*) AT THE LOWEST COST IN THE MARKET

The Atlas Copco XD -100°F is the first heat of compression dryer that can guarantee class zero compressed air quality. The XD -100°F reduces the energy consumption up to 50% in comparison with the actual -100°F dryers in the market. The patented design reduces the load of the desiccant to an absolute minimum. The regeneration occurs in two different steps guaranteeing the outmost regeneration condition of the bottom and the top layer, resulting in excellent performance and an extension of the desiccant lifetime. Purge losses are extremely reduced. By design, the XD saves you energy and money, while you benefit from outstanding guaranteed performance.

Savings by using XD PDP -100°F



(\*) In comparison with a heat re-activated blower dryer

(\*\*) Assumption: 1 MWh = 430 kg CO<sub>2</sub>

CLASS	PRESSURE DEWPOINT °F
0	As specified by the equipment user or supplier and more stringent than class 1 <sup>(*)</sup>
1	≤ -100
2	≤ -40
3	≤ -4
4	≤ +37
5	≤ +45
6	≤ +50

(\*) ISO 8573-1 Pressure dewpoint quality.



XD -100°F design



# Peace of mind



Our Aftermarket product portfolio is designed to add maximum value for our customers by ensuring the optimum availability and reliability of their compressed air equipment with the lowest possible operating costs. We deliver this complete service guarantee through our extensive Aftermarket organization, maintaining our position as the leader in compressed air.

ACTIVITY	PRODUCT*
Genuine parts	Atlas Copco Service kits & oils
Extended warranties	AIRXtend
Service contracts	ServicePlan
System audits	AIRScan™
Remote monitoring	AIRConnect™
Energy saving	AIROptimizer™
Product improvements	Upgrade programs

\* More information is available from your local Atlas Copco customer center.

# Complete scope suiting all needs

Numerous features are included as standard. Some applications may also need or benefit from one of the factory installed options.



## STANDARD FOR ALL XD DRYERS

- All water and air connections flanged
- Oversized vessels for low pressure drop
- High performance desiccant with extended lifetime
- Full vessel size stainless steel strainer
- Electronic drains with alarm on coolers
- Electronic drains on vessels with alarm (in combination with drain of the coolers acting as double drain system)
- Complete cooling water manifold
- High performance stainless coolers with low pressure drop
- All air piping galvanized
- Water piping internally and externally coated
- Cooler shells coated with resistant coating
- Full stainless steel high performance double offset design process valves
- Non-contact inductive limit switches on all valves with alarm
- Safety valves
- Pressure vessel design 160 psi(g)
- Coated check valves
- Forklift slots and lifting eyes
- Inspection and filling holes on vessels
- Advanced Elektronikon controller and safeguard
- CAN-connection

## ADDITIONAL STANDARD FEATURES FOR THE G VERSION

- Integrated stainless steel heaters
- Advanced heating controls

## Options

COOLING MODE	SPLIT-FLOW	PURGE	ZERO PURGE	-70°C/-100°F
Pressure vessel design 13 bar	•	•	•	•
Prepared for heavy duty	•	•	•	•
Insulation of the vessels	•	•	•	Std
Electronic dewpoint control with alarm	•	•	•	Std
Second pressure dewpoint read-out	•	•	•	•
ANSI flanges for air and water connections	•	•	•	•
Matching sonic nozzle	•	•	•	•
High resolution Elektronikon display MkIV	•	•	•	•
MODBUS interface	•	•	•	•
PROFIBUS interface	•	•	•	•
ETHERNET/IP interface	•	•	•	•

# Technical specifications

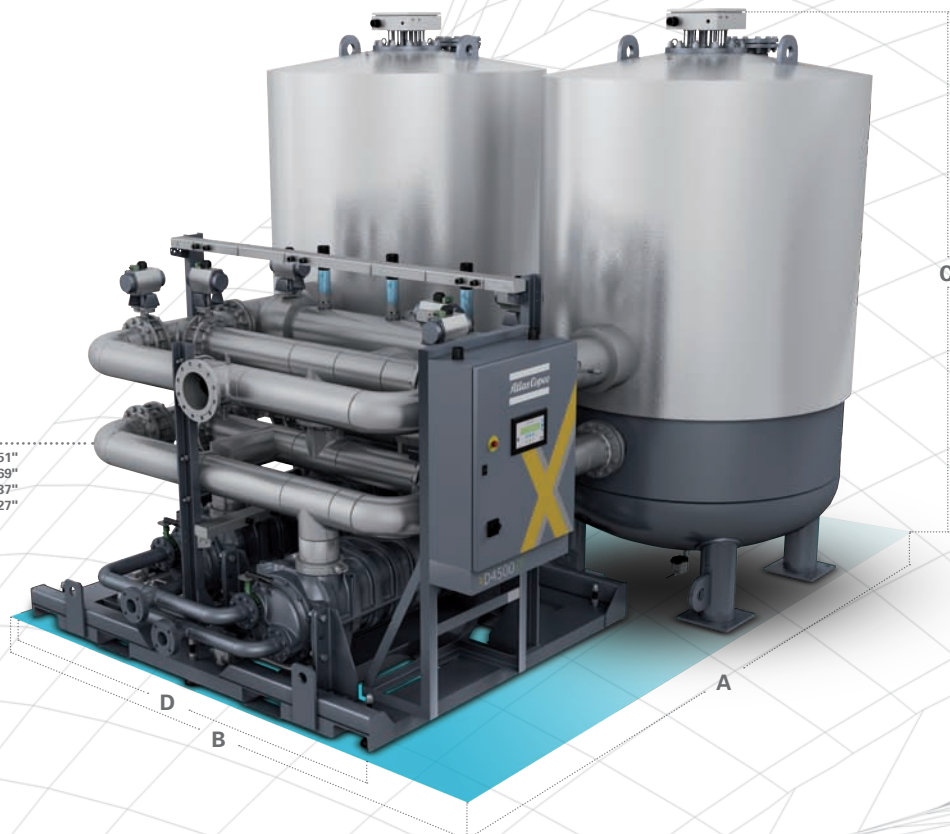
XD S/G	Free Air Delivery (1)	Width		Length		Height		Skid width	Air connections	Water connection
	l/s / cfm	mm/inch		mm/inch		mm/inch		mm/inch		
		XD Purge	XD -70°C	Without insulation	With insulation	XD S-version	XD G-version			
		A		B		C		D		
XD 1400	1400/2966	2732/108"	2990/118"	3026/119"	3126/123"	3306/130"	3451/136"	2654/104"	DN 150 / 6"	DN 50 / 2"
XD 1800	1800/3814	2832/111"	3070/121"	3126/123"	3226/127"	3340/131"	3485/137"	2654/104"	DN 150 / 6"	DN 50 / 2"
XD 2400	2400/5085	3200/126"	4151/163"	3326/131"	3426/135"	3374/133"	3492/137"	2664/105"	DN 150 / 6"	DN 80 / 3"
XD 3000	3000/6357	3410/134"	4248/167"	4000/157"	4100/161"	3417/135"	3562/140"	3163/125"	DN 200 / 8"	DN 80 / 3"
XD 3600	3600/7628	3645/144"	3963/156"	4100/161"	4200/165"	3444/136"	3563/140"	3236/127"	DN 200 / 8"	DN 80 / 3"
XD 4000	4000/8476	3745/147"	4058/160"	4200/165"	4300/169"	3448/136"	3590/141"	3236/127"	DN 200 / 8"	DN 80 / 3"
XD 4500	4500/9535	3845/151"	4163/164"	4300/169"	4400/173"	3470/137"	3615/142"	3236/127"	DN 200 / 8"	DN 80 / 3"
XD 5000	5000/10594	4181/165"	4659/183"	5016/197"	5116/201"	3760/148"	3909/154"	3896/153"	DN 250 / 10"	DN 100 / 4"
XD 6000	6000/12713	4381/172"	4859/191"	5212/202"	5312/209"	3755/148"	3911/154"	3896/153"	DN 250 / 10"	DN 100 / 4"
XD 7000	7000/14832	4480/176"	4959/195"	5312/209"	5412/213"	3783/149"	3936/155"	3896/153"	DN 250 / 10"	DN 100 / 4"

<sup>(1)</sup> FAD at reference conditions:  
 Ambient air temperature: 95°F  
 Ambient relative humidity: 60%  
 Compressed air effective inlet pressure: 100 psi(g)  
 Compressed air inlet temperature: 248°F  
 Inlet relative humidity of compressed air: 10%  
 Cooling water temperature: 80°F

The above dimensions are only an indication. Before calculating the space needed for installation, please always refer to the official dimension drawings.

### XD 4500

A: 3845 mm, 151"  
 B: 4300 mm, 169"  
 C: 3470 mm, 137"  
 D: 3236 mm, 127"





What sets Atlas Copco apart? Our belief that, to excel, we must provide the best possible know-how and technology in ways that our customers value. Whether we're fully supporting existing products or advancing technology through innovation, we constantly focus on customer needs.

The Atlas Copco way of doing business grows from ongoing interaction, long-term relationships, and a commitment to understanding each customer's process and objectives. As a result, every compressed air solution we create helps a customer operate with greater efficiency, economy, and productivity.

Satisfying customer needs effectively has made Atlas Copco the number one compressor manufacturer in the world. We will continue to attract new business through our unwavering conviction to creating products and ideas that help our customers succeed.



Danger: Compressed air should never be supplied as breathing air unless air is properly purified for breathing. Atlas Copco assumes no responsibility or liability related to the purchaser's/user's breathing air system.

The information contained herein is general in nature and is not intended for specific construction, installation or application purposes



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