

Atlas Copco

High-pressure oil-free air compressors

ZD 800-4000 & ZD 1200-4100 VSD / 25-40 bar



Sustainable Productivity

Atlas Copco

ZD: an alliance of talents

A high-quality air supply is a critical resource in high-pressure applications such as PET blowing or aeronautics. Completely developed in-house, Atlas Copco's ZD high-pressure air compressor is a unique combination of oil-free screw and piston

technologies. It can be installed close to the point of use, improves the overall quality of your process and saves costs on every level, making it the most advanced compressor in its field.



A SOLUTION YOU CAN RELY ON

Stopping your production lines is very costly and troublesome. Therefore, you need your process to be a continuous and stable flow. Through the combination of two tested and proven technologies, the ZD brings you superior technical quality that ensures the continuity of your processes and drastically reduces the risk of downtime.

Thanks to our worldwide service network, we can offer you our highly qualified backup to keep your production running at the lowest possible operating costs. Our aftermarket product portfolio is designed to add maximum value by ensuring the optimum availability and reliability of your compressed air equipment. Choose from a wide range of Atlas Copco after sales products and services that will have your ZD performing at its best for years to come.



TRUE ENERGY-SAVING FLEXIBILITY

You may have a fluctuating air demand, but you don't want it to have an impact on your costs. The ZD with VSD (Variable Speed Drive) provides the right answer. With VSD technology you obtain energy savings that will greatly downsize your electricity bill. By automatically tuning the compressor's capacity to the precise air demand, only a minimum amount of energy is required. The resulting energy savings benefit you as well as the environment, safeguarding a healthy future for the generations to come.



NO COMPROMISES!

You can't afford to compromise on clean, oil-free air for your critical processes. Atlas Copco, a pioneer in oil-free air compression technologies, is known for its range of compressors designed specially for applications that require oil-free air. We are also the world's first manufacturer

to receive certification for a new standard of air purity: ISO 8573-1 CLASS 0. CLASS 0 compressors feed your processes with pure air that safeguards your production processes and blow molding machines and protects your hard-won reputation.



A reliable production of quality air

The ZD compressor offers you the best of two industry standards. While the world-renowned ZR screw compressor delivers quality dry air at medium pressure, the D-booster efficiently brings the air to 40 bar. Designed as a complete, integrated package from one single supplier, the ZD is a true plug-and-run solution.



Watercooled
ZR 160 VSD-FF

ISO 8573-1 CLASS 0

Atlas Copco sets a new industry standard



When it comes to clean, oil-free compressed air for your critical processes, you can't afford to compromise. Atlas Copco, a pioneer in oil-free air screw technology, is known for its range of compressors designed especially for applications that require oil-free air. Now Atlas Copco has achieved a new milestone: setting the standard for air purity as the first manufacturer to be certified ISO 8573-1 CLASS 0.

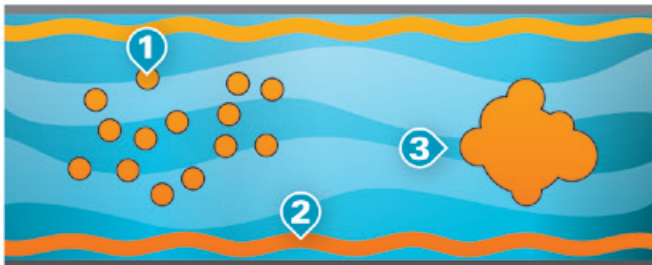
Atlas Copco's ZD compressor is TÜV-certified as "oil-free" (ISO 8573 CLASS 0).

WHY A NEW CLASS?

Industries such as pharmaceuticals, food and beverages, electronics and textiles must exclude any risk of contamination. Otherwise severe consequences could follow: spoiled or unsafe products, production downtime and damage to both brand and reputation. To address the needs of critical applications where air purity is essential, the ISO 8573-1 compressed air standard was revised in 2001. Along with a more comprehensive measuring methodology, a new and more stringent class was added to the five existing purity classes: ISO 8573-1 CLASS 0.

CLASS	Concentration total oil (aerosol, liquid, vapor) mg/m ³
0	As specified by the equipment user or supplier and more stringent than class 1
1	< 0.01
2	< 0.1
3	< 1
4	< 5

THE MOST STRINGENT AIR PURITY TESTING AVAILABLE



- 1 Aerosols**
Minute droplets of oil suspended in the air stream
- 2 Wall flow**
Oil in liquid form, which creeps along the pipe wall
- 3 Vapors or oil mist**
Vaporized oil in a cloud form

Most manufacturers prefer "partial flow" testing, which targets only the center of the air flow. The Atlas Copco ZD range of oil-free high-pressure compressors was tested using the more stringent "full flow" method. This examines the entire air flow to measure aerosols, vapors and wall flow. Even with such rigorous testing, no traces of oil were found in the output air stream.



Move up to a risk-free standard.
Visit www.classzero.com.

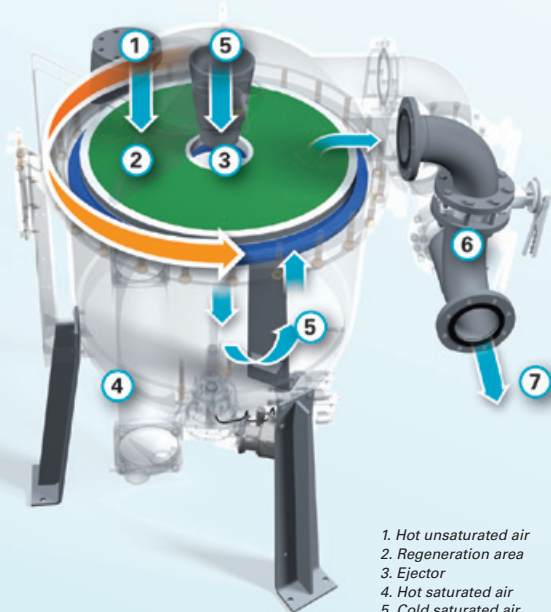
A safe supply of dry air

Moisture in the compressed air can damage your compressed air system and contaminate your end product. The resulting maintenance costs can far exceed air treatment costs. The ZD comes with an integrated adsorption dryer at the second stage outlet. As a result, the D-booster receives nothing but perfectly

dry air, which safeguards the compression in the two high-pressure stages, ensuring higher reliability and lower maintenance costs. It also preserves the end product and increases the component life-time of the blow molding machine.

THE MD DRYING PRINCIPLE

The silicagel powder on the dryer's glass fiber-based paper drum removes all moisture from the compressed air. No air is wasted as part of the process. Additionally, the MD drying process requires no external energy, which results in large energy savings over time.

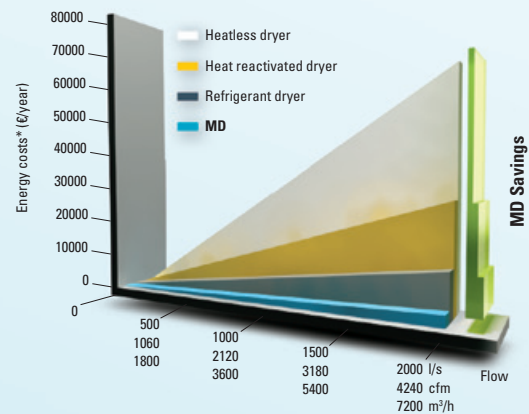


1. Hot unsaturated air
2. Regeneration area
3. Ejector
4. Hot saturated air
5. Cold saturated air
6. Flanged connections
7. Cold dry air outlet

SUBSTANTIAL SAVINGS

- No energy is lost on the drying process.
- As there is no risk of moisture, a longer lifetime of the piston rings and valves in the high pressure stages is ensured, resulting in very substantial savings in maintenance.

Savings when selecting the right drying method



* Assumptions: 1 kWh = 0.05 € - 8000 h/year



A CORRECT DEW POINT: YOUR PROCESS IS PROTECTED

- The pressure dew point at the booster outlet is + 3°C. As a standard, the dew point is controlled at the booster interstage.
- The dew point at the booster outlet is always correct. As the dryer is integrated at the 2nd compression stage, the drying process is not influenced by atmospheric temperature and outlet pressure variations. This results in a number of benefits:
 - **It protects your end product:** there is no risk of droplets being mixed into the bottle material during the blow molding process, which could cause immediate product deterioration, bottle scrapping and production stops.
 - **It saves on maintenance costs:** less wear of components thanks to a condensate-free air sent to the blow molding machine.

Ultimate flexibility

EASY TRANSPORTATION



- Forklift slots.
- All models can be containerized.

EASY INSTALLATION



- The ZD can be installed either in-line or parallel, allowing you to adapt it to your available floor space.
- Plug-and-play: all equipment is enclosed within the canopies.

RIGHT WHERE YOU NEED IT



- Can be installed on the work floor, close to the point of use.
- No need for a separate compressor room.
- Save on air pipes and the corresponding energy losses.
- Low noise levels: sound damping canopies and a concrete, anti-vibration base plate.

COST SAVINGS



- No specific civil engineering work required; only an industrial flat slab, able to support the weight of the machine.
- No need for anti-vibration blocks.

TOTAL CONTROL AND MONITORING: ELEKTRONIKON®



- One start/stop button for the ZD combination.
- Monitoring of the dryer.
- Interstage dew point indicator.
- System performance status (interactive service indications, alarms, shutdowns).
- Service indication history.
- Optional Modbus/Profibus interface.
- Ready for compressor room monitoring.



SIMPLE MAINTENANCE



- Canopy doors can be easily opened and/or removed.
- All maintenance operations can be performed at a comfortable height thanks to the ZD's horizontal design.
- Outstanding safety.
- Long service intervals (up to 8.000 hours).



ZD Xtend: a modular approach for additional savings

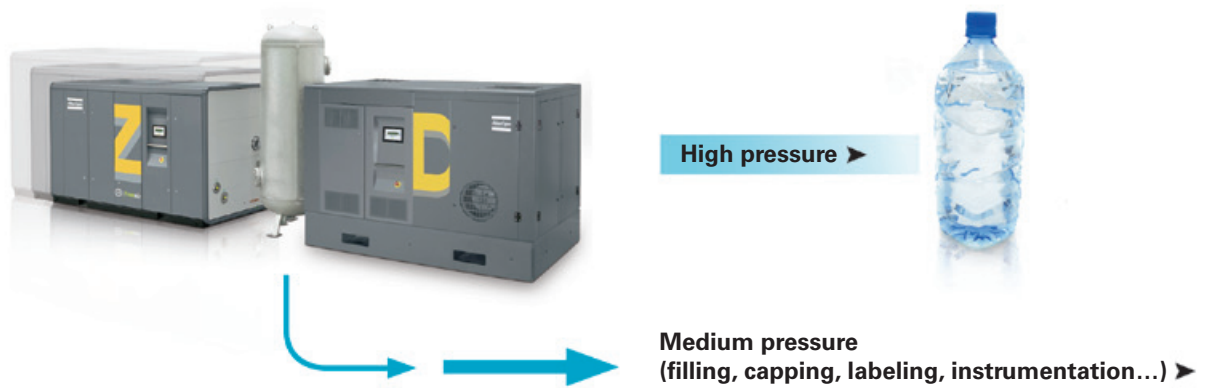
ZD Xtendplus and ZD XtendplusVSD

In a typical PET blowing operation, the molding machines form the production center piece, but they are surrounded by equally vital peripheral equipment such as cappers, labelers and instrumentation. They too need a reliable quality air supply.

ZD Xtendplus compressors come with a larger model screw compressor, ready to handle medium pressure in your

production line, in addition to feeding the 40 bar booster. This approach saves substantially over extra stand-alone compressors.

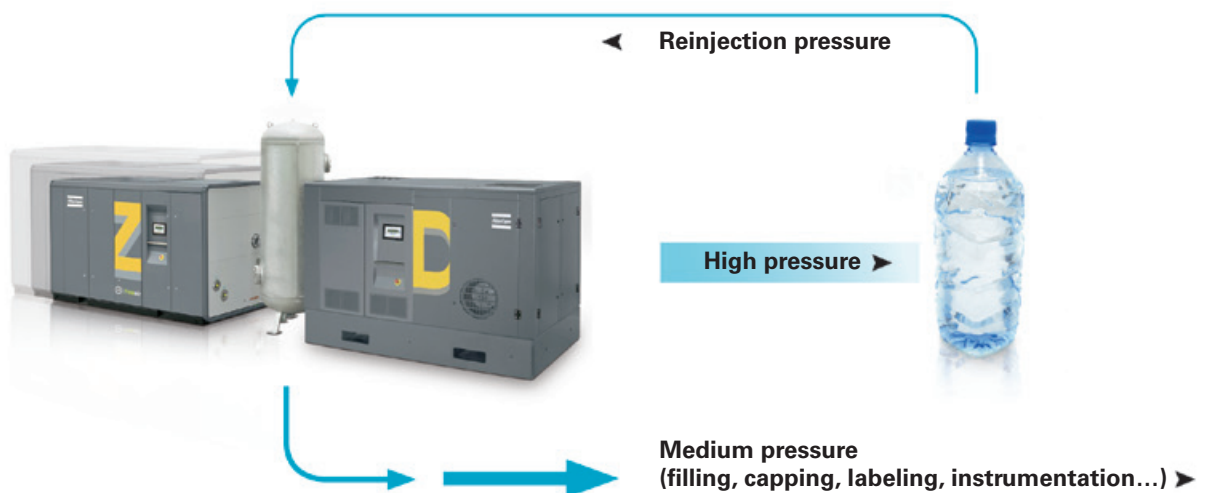
ZD Xtendplus VSD compressors are available in a variable speed drive version, for added flexibility and energy savings.



ZD Xtend RI plus and ZD Xtend RI plusVSD

Saving energy is the driving argument behind all investments. Many blow molding machines are now equipped with air reinjection systems. The recovered air is used for both pre-blow

and reinjection. ZD Xtend RI compressors, either in fixed speed or variable speed drive versions, are perfectly adapted to reinjection allowing you to save substantial amounts of energy.



Example of savings with reinjection

- 13 kW/h per 100 m³ re-injected at 10 bar with ZD VSD.
- 11 kW/h per 100 m³ re-injected at 10 bar with ZD Fixed Speed.

The Xtend range differs from the standard range with the insertion of a medium pressure vessel (10 bar) between the Z and D. This allows you to separately adapt the size of the Z and D depending on the flow you require.

Technical specifications

The below data are for a discharge pressure of 40 bar (e). For other pressures (25 to 45 bar), please consult your Atlas Copco representative.

DISCHARGE PRESSURE 40 BAR /580 PSIG	Available with		FAD*			Shaft input at ref. cond.	Pressure dew point at 40 bar > to	Sound pressure level***
	LOW VOLTAGE MOTOR	MEDIUM VOLTAGE MOTOR**	l/s	m ³ /h	cfm			
50 Hz								
ZD 800-50	•		220	792	466	143	3	73.7
ZD 1000-50	•		264	950	560	166	3	75.6
ZD 1200-50	•		334	1202	708	210	3	76.0
ZD 1400-50	•		401	1444	849	254	3	75.9
ZD 1600-50	•		445	1602	943	281	3	75.9
ZD 2100-50	•	•	627	2257	1329	384	3	81.2
ZD 2500-50	•	•	687	2473	1456	422	3	81.2
ZD 2750-50	•	•	779	2804	1651	488	3	82.2
ZD 3050-50	•	•	844	3038	1788	512	3	81.2
ZD 3350-50	•	•	937	3373	1986	571	3	81.2
ZD 3750-50	•	•	1074	3866	2276	678	3	83.1
ZD 4000-50	•	•	1114	4010	2360	712	3	84.0
60 Hz								
ZD 800-60	•		235	846	498	153	3	73.9
ZD 1000-60	•		287	1033	608	182	3	75.7
ZD 1200-60	•		317	1141	672	200	3	76.6
ZD 1400-60	•		398	1433	843	253	3	77.3
ZD 1600-60	•		457	1645	968	288	3	75.9
ZD 1900-60	•	•	547	1969	1159	389	3	80.7
ZD 2300-60	•	•	639	2300	1354	489	3	82.2
ZD 2500-60	•	•	725	2610	1536	441	3	81.7
ZD 3100-60	•	•	857	3085	1816	520	3	81.7
ZD 3500-60	•	•	951	3424	2016	585	3	83.8
ZD 4000-60	•	•	1141	4108	2418	722	3	84.0
VSD****								
ZD 1200 VSD	•		146/320	529/1152	311/678	94/208	3	77.3
ZD 1400 VSD	•		139/382	500/1375	294/809	94/255	3	77.3
ZD 2300 VSD	•		308/625	1109/2250	652/1324	193/397	3	83.9
ZD 2800 VSD	•		308/738	1109/2657	652/1564	193/481	3	83.9
ZD 3500 VSD	•		440/978	1584/3521	932/2072	270/607	3	83.9
ZD 4100 VSD	•		440/1099	1584/3957	932/2329	270/699	3	83.9

ZD MODELS	Overall dimensions (machines side by side)		
	A	B	C
50 Hz	mm	mm	mm
ZD 800-50	3460	4390	2185
ZD 1000-50	3900	4590	2130
ZD 1200-50	3900	4590	2130
ZD 1400-50	4826	5003	2083
ZD 1600-50	4826	5003	2083
ZD 2100-50	4886	5345	2134
ZD 2500-50	4886	5345	2134
ZD 2750-50	4886	5345	2134
ZD 3050-50	5980	5688	2400
ZD 3350-50	5980	5688	2400
ZD 3750-50	6843	5885	2578
ZD 4000-50	6843	5885	2578
60 Hz			
ZD 800-60	3460	4390	2185
ZD 1000-60	3900	4590	2130
ZD 1200-60	3900	4590	2130
ZD 1400-60	3905	4920	2083
ZD 1600-60	4826	5003	2083
ZD 1900-60	4886	5345	2134
ZD 2300-60	4886	5345	2134
ZD 2500-60	4886	5345	2134
ZD 3100-60	5980	5688	2400
ZD 3500-60	5980	5688	2400
ZD 4000-60	6843	5885	2578
VSD****			
ZD 1200 VSD****	3900	4590	2130
ZD 1400 VSD	3905	4920	2083
ZD 2300 VSD	4886	5345	2134
ZD 2800 VSD	4886	5345	2134
ZD 3500 VSD	6843	5885	2578
ZD 4100 VSD	6843	5885	2083

* At reference conditions and according to ISO 1217
 ** Medium voltage motors (3 KV, 3.3 KV, 6 KV, 6.6 KV) for Japan only
 *** a-weighted sound pressure level LpA, sound power level LwA, uncertainty + 3dB, reference 20 µ Pa, according to ISO 3746 (for low voltage motors)
 **** At minimum/maximum speeds
 ***** Please consult Atlas Copco

Reference conditions:

- Inlet pressure: 1 bar(a)
- Relative air humidity: 0%
- Air inlet temperature: 20°C
- Cooling water inlet temperature: 20°C
- Nominal effective working pressure: 40 bar

ZD plus and ZD RI ranges offer numerous combinations. Please contact your local Atlas Copco Customer Centre at www.atlascopco.com for a customized selection.

