Atlas Copco Air Compressors

ZR/ZT 15-45
ZR/ZT 37 & 50 VSD

oil-free rotary tooth compressor range

OIL-FREE...
TROUBLE-FREE

Atlas Copco

Atlas Copco rotary tooth compressors, providing you with economical, high quality oil free compressed air.

As a result of over 100 years of attention to individual customers requirements and over 40 years of experience with Oil Free compressor technology, Atlas Copco is able to offer an unrivalled range of Screw, Tooth, Scroll, Centrifugal and Piston air compression technologies best suited to your specific application requirements.

The Oil Free rotary tooth ZT/ZR range of air compressors gives you all of this experience and knowledge in a class leading package. Something that you would expect from a company that has such history of providing high quality, cost effective solutions to our customer's requirements.

High quality oil free compressed air is a prerequisite for the continuity and quality of many manufacturing processes. It is our belief that the only way to ensure consistent Oil Free air is to prevent oil from entering the compression process in the first place, anything else is a compromise.

Meeting your demand through unrivalled knowledge and experience of your application.

The Application Engineer

Every application can benefit from Oil Free air by ensuring higher product consistency, lower operating costs, lower maintenance costs and a healthier working environment.

ZT/ZR air compressors, designed to meet the needs of people like you.

The Maintenance Engineer

Oil in compressed air will attack downstream equipment, causing increased maintenance requirements and increased plant downtime.

- **Operator and service friendly**
- **Low maintenance requirements**

The Financial Manager

Low cost oil lubricated compressors may look attractive, but when considering the total operating costs compared to Oil Free compressors, the extra investment in a ZT/ZR will easily pay for itself.

- **Easy and low cost installation**
- **Low energy consumption**

The Safety and Environment Manager

Breathing oil fumes is definitely not a good idea and oil contaminates condensate can damage the environment. Why do it the hard way, when you can do it the smart way with ZT/ZR oil free compressors.

- **No condensate management problems**
- **Silenced package**

The Quality Manager

Do not accept the possibility of product contamination, and reduced product quality. Only Oil Free compressors can offer a 100% Guarantee of Oil Free Air.

- **No product spoilage**
- **Consistent performance over the compressor lifetime**

The General Manager

If you require maximum reliability and energy efficiency to improve your total operating costs, the ZT/ZR provides you with the optimum compressed air generation solution.

- **Proven reliability**
- **The most cost effective solution**

A reliable quality air package

ZT/ZR 15-45 compressors are designed as fully integrated and compact silenced packages with drive motor, coolers, moisture drains and filtration along with a controller to ensure optimum efficiency and reliability. The Full Feature versions include the integration of a choice of drying technologies to ensure compliance with your air quality requirements and make the best use of your valuable floor space.

The Integrated frequency converter of the ZT /ZR VSD series will vary the speed of the drive motor to exactly match the changes in your compressed air demand, thus using the minimum amount of energy and more than justifying the additional investment.

The integrated concept, the converter-motor-compressor combination offers the advantages of:

- ensured electromagnetic compatibility
- full regulation between 30 and 100 % of maximum capacity
- up to 25 % energy savings

In addition, Variable Speed Drive offers:

- process stability
- lower and constant air net pressure
- low starting torque
- low starting currents
- constant, high power factor throughout speed range.

You benefit from the right ZT/ZR compressor package. 100 % oil-free compressed air

Efficient filtration of the intake air

Air filter specs:
SAE fine 99.5 %
SAE coarse 99.9 %

Total supervision and monitoring

Advanced Elektronikon® control and monitoring system, designed for integration into (remote) process control systems.

High efficiency motor

An IP55 induction motor, flange-mounted for perfect alignment.

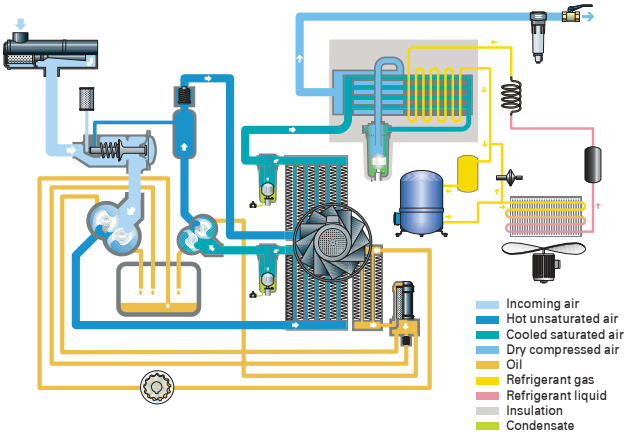
Quiet operation

No separate compressor room required. A sound insulated canopy allows for installation in most working environments.

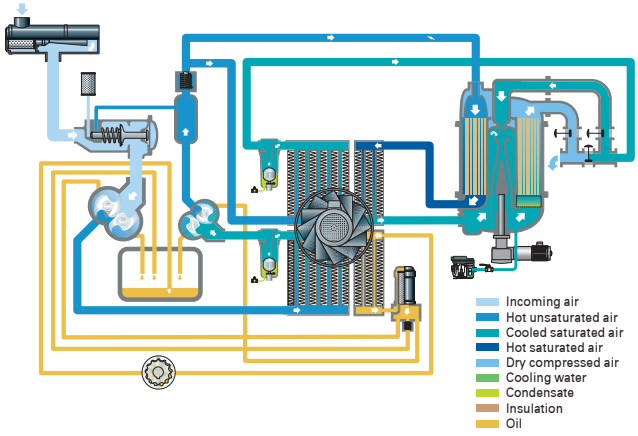
Two-stage compression efficiency

Lower energy consumption compared to single stage compression system.

Air/oil flow air-cooled ZT/ID



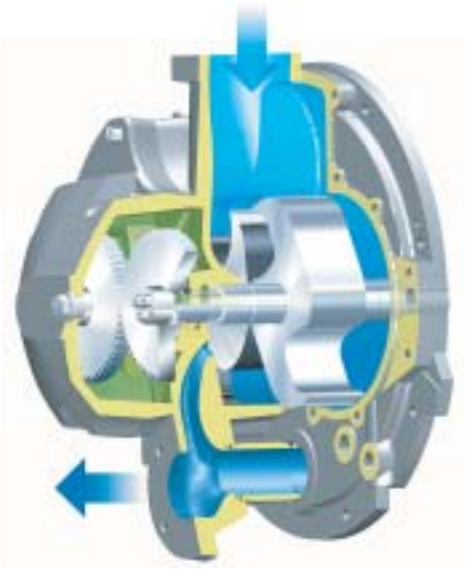
Air/oil flow air-cooled ZT/IMD



Proven highly efficient compression technology.

100 % oil-free air

- designed and manufactured by Atlas Copco
- proven, Oil-Free rotary tooth compression
- fully synchronised rotor assembly
- efficient shaft sealing
- no residual oil in the air



Rotors
Stainless steel symmetrical rotors ensure perfect dynamic balancing and minimum bearing load to ensure long life

Axial in- and outlet port
Straight rotor design together with opposing axial in- and outlet port avoid axial load on element components, increasing element lifetime.

Air-cooled design
Hollow cast teeth allow efficient heat dissapation, avoiding the need for a complex cooling water system, ensuring greater reliability.

Seals
Two independent floating oil and air seals separated by a neutral buffer area, safeguards the compression chamber from oil penetration.

Two-stage compression efficiency

Lower energy consumption compared to single stage compression systems as no venting of the pressure vessel is required, resulting in the minimum power consumption of the unloaded state being reached rapidly.

Double tooth element

- Increased free air delivery
- Low specific energy consumption
- Symmetrical and dynamically balanced design
- Consistent performance over lifetime

Variable Speed Drive, caring for energy

With both air and water-cooled, 37 and 50kW versions available, the ZT/ZR VSD compressor offers you a wide range of energy saving opportunities.

Lowest possible running cost

- air supply = air demand
- with a varying air demand pattern, motor speed regulation is the most efficient compressor control method
- energy savings at partial load

Constant pressure

- process stability improvement

Low starting currents

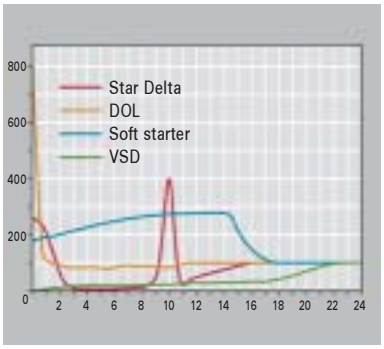
- lower investments in electrical systems
- no peak current penalties
- smooth starting

No speed windows

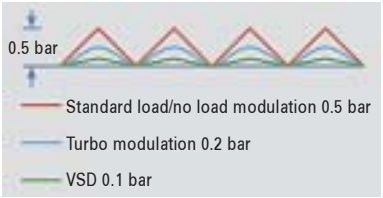
- compressor can be regulated steplessly within the speed range

Drive motor and VSD, one brand

- Highest possible component synergy
- Simplified service
- Worldwide service support



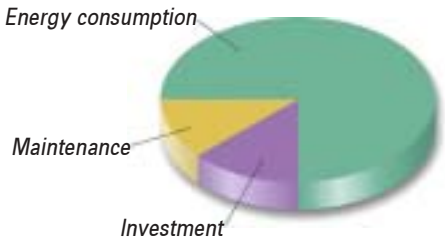
No current peaks
Compressor starts are even smoother than with so called soft starters. This greatly simplifies the electrical installation. No current peaks. No risk of penalties from the utility company.



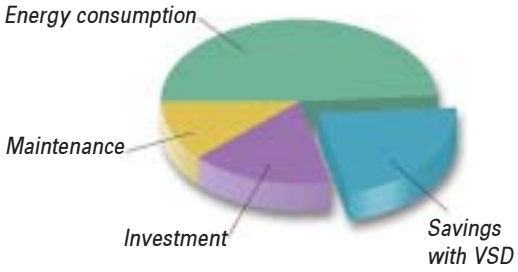
Constant pressure
The output pressure is virtually constant over a wide capacity range (narrow pressure band within 0.1 bar). This optimises energy consumption and ensures high process stability when the air demand fluctuates.

Total compressor life cycle cost

Cost structure of a fixed speed compressor



Cost structure of a Z VSD compressor



Elektronikon® : A superior electronic control, monitoring and communication system

Atlas Copco's patented Elektronikon is an advanced, microprocessor based, real time operating system with an ergonomic alphanumeric user interface.

Reliability

- Protects the compressor pro-actively by means of service and warning indications
- Shuts down the compressor in the event of a fault

Energy efficiency

- Precise pressure control for optimal efficiency
- As standard the control mode DSS is programmed, eliminating unloaded power consumption to the highest extent, resulting in energy savings up to 10 %

User friendliness

- Can be programmed in 2 languages out of a selection of 23 languages
- Setting of operating parameters (password protected)
  - Working pressure
  - Warning levels
  - Service levels
  - Week timer
- Historical and actual data read-out via the easy-to-read display
  - Working pressure, operating temperatures , number of motor starts, operating hours, service information
  - Status data during the 5 last shutdowns and emergency stops

Service friendliness

- Automatic indication when service is required, minimizing downtime and simplifying maintenance planning

Digital remote control and monitoring

- Possibility to start/stop-load/unload the compressor from a remote area
- Remote indication of automatic operation, general warning and shutdown

Communication

- CAN connection (standard)
- ModBUS/ProfiBUS interface (option)
- E-box interface to world wide web (option)

Compressor room control and monitoring

Multiple compressor installations can benefit from a centralised control system, which coordinates the operation of the individual compressors and ancillaries. From simple sequencing to complete compressor room monitoring, Atlas Copco can offer it all - using the latest state of the art communication technology.

Heights in energy saving with Full Feature compressors

Integrated refrigerant dryer

Integrated adsorption dryer

To ensure that we can meet your exacting requirements when it comes to compressed air quality, you are able to choose from either refrigerant or adsorption drying technology.

For a quality end product and reliable production process, Atlas Copco offers the unique range of MD adsorption dryers, specially designed to work with proven oil-free air Z-compressors.
An environmentally friendly and cost effective dryer:

- no Freon or CFC used
- use only 0.06 kW of additional power
- no loss of compressed air
- complete dryer corrosion protection
- water and air-cooled versions
- fully automatic operation
- continuous dryer regeneration using heat of compression
- low dewpoint: -20°C to -40°C

The single pressure vessel is divided in two sectors, one for drying (75 %) and one for regeneration of the desiccant material(25 %). A fibre glass honey-comb drum impregnated with silicagel rotates through these sectors.

Optimise your installation.

Options

- Anit-condensation heaters
- ModBUS/profiBUS interface
- ANSI flanges
- IMD adsorption dryer
- ID refrigerant dryer
- WorkPlace Air System
- High ambient versions
- Drive motor thermistors
- Anchor pads
- Energy recovery (only ZR units)

Some applications may need or may benefit from additional options and more refined control and air treatment systems. To meet these needs, Atlas Copco has developed options and easily integrated compatible equipment providing the lowest cost compressed air.

WorkPlace Air System™

Should you require supremely low noise levels from the compressor, then the low noise WorkPlace Air System™ option ensures that you can place the compressor near the working environment.

Energy recovery

All water-cooled versions offer you the potential to recover some 85 % of the heat of compression through the optional water-to-water energy recovery unit.

High ambient versions (HAV)

Ensures that the compressor performs even in the toughest environment of up to 50 °C.

Simple, low cost maintenance

The simple modular construction and service friendly design of the Z range of compressors ensures that in both frequency and time, maintenance interventions are kept to a minimum.

- **low level of consumable parts**
- **direct access to all service points**
- **single point greasing on all units of 30kw and above**
- **greased for life motors on all units below 30kW**
- **service warning function available via the Elektronikon® controller**

Effective service access combined with extended service intervals reduces maintenance downtime and increases compressor availability.

Aftermarket commitment means that Atlas Copco is best placed to provide the levels of after-sales care that you require.

Global capability with local presence means that we can respond rapidly to any situation anywhere in the world.

Service competence ensures that our highly trained engineers are able to offer the best possible support and assistance in operating your equipment with the most modern diagnostic tools available.

World class logistics ensures that we can deliver our range of guaranteed quality spare parts in a timely manner.

Technical data ZT/ZR 15-45 and ZT/ZR 37 and 50 VSD compressors

50 and 60 Hz

Compressor type	Max. working pressure		Capacity FAD[1] min-max			Installed Motor power		Noise level[2] dB(A)		Weight without dryer[3]	Integrated dryer available	
	bar(e)	psig	l/s	m³/min	cfm	kW	hp	Pack	Work-Place	kg	ID	IMD
Air cooled only												
ZT 15	7.5	109	37.7	2.3	80	15	20	69	65	804	YES	NO
	8.6	125	34.5	2.1	73							
	10	145	30.1	1.8	64							
ZT 18	7.5	109	48.7	2.9	103	18	25	71	67	824	YES	YES
	8.6	125	45.8	2.7	97							
	10	145	37.4	2.2	79							
ZT 22	7.5	109	59.1	3.5	125	22	30	73	69	830	YES	YES
	8.6	125	53.7	3.2	114							
	10	145	44.9	2.7	95							
Air- (ZT) and water- (ZR) cooled								Noise level for ZR[4]				
ZR/ZT 30	7.5	109	78.6	4.7	167	30	40	66	63	1239	YES	YES
	8.6	125	73.9	4.4	157							
ZR/ZT 37	7.5	109	96.6	5.8	205	37	50	68	65	1285	YES	YES
	8.6	125	92.3	5.5	196							
ZR/ZT 45	7.5	109	113.8	6.8	241	45	60	70	67	1330	YES	YES
	8.6	125	108.8	6.5	231							
ZR/ZT 37VSD	8.6	125	43-96.8	2.6-5.9	91-205	37	50	68	65	1430	YES	YES
ZR/ZT 50VSD	8.6	125	43-127.4	2.6-7.6	91-270	50	67	70	67			

(1) Unit performance measured according to ISO 1217, Ed 3, Annex C-1996
Reference conditions:
- absolute inlet pressure 1 bar (14.5 psi)
- intake air temperature 20°C (68°F)

At the following working pressures:
- 7 bar for working condition for max. pressure 7.5 bar
- 8 bar for working condition for max. pressure 8.6 bar

(2) Noise level measured according to Pneurop/Cagi PN8NTC2, tolerance: 3 dB(A).

(3) Integrated dryers will increase the weight

(4) For ZT air-cooled units : +3 dB(A)

Dimensions (mm)			
	Length	Width	Height
Z 15-22	1620	983	1600
Z 30-45	1910	983	1748
Z 37-50 VSD	2320	983	1748

What sets Atlas Copco apart as a company is our conviction that we can only excel in what we do if we provide the best possible expertise and technology to really help our customers produce, grow and succeed.

There is a unique way of achieving that - we simply call it the Atlas Copco way. It builds on **interaction**, on long-term relationships and involvement in the customers' process, needs and objectives. It means having the flexibility to adapt to the diverse demands of the people we cater for.

It's the **commitment** to our customers' business that drives our effort towards increasing their productivity through better solutions. It starts with fully supporting existing products and continuously doing things better. But it goes much further, creating advances in technology through **innovation**. Not for the sake of technology, but for the sake of our customers' bottom line and peace-of-mind.

That is how Atlas Copco will strive to remain the first choice, to succeed in attracting new business and to maintain our position as the industry leader.

ISO 9001
From design to production and delivery of compressors, Atlas Copco adheres to the ISO 9001 management system.

ISO 14001
Atlas Copco's Environmental Management System forms an integral part of each business process.

Never use compressed air as breathing air without prior purification in accordance with local legislation and standards.

Atlas Copco

www.atlascopco.com

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