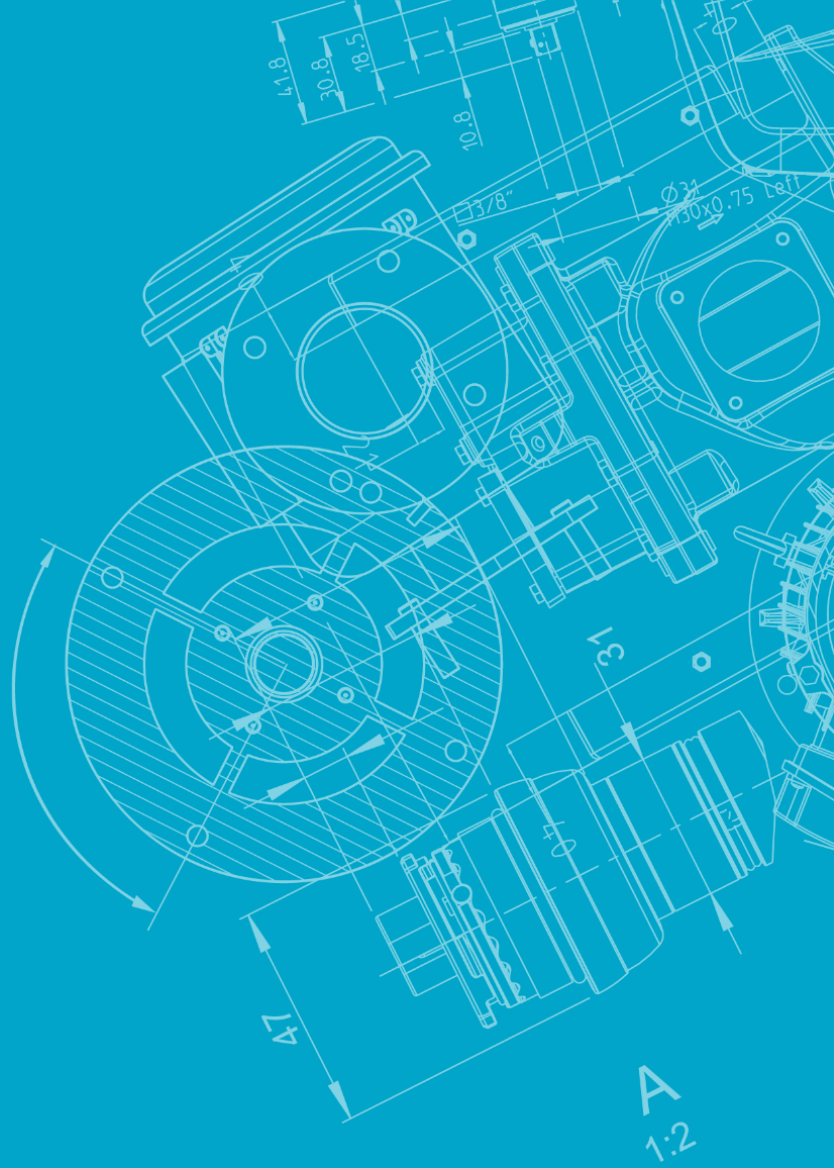


Atlas Copco

# Oil-free rotary tooth compressor

ZT 30-50 VSD+ (FF)





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# Reliable and oil-free to protect your products

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Atlas Copco ZT 30-50 VSD+ tooth compressors are designed for operations needing a non-stop supply of the highest quality compressed air. In industries ranging from pharmaceutical manufacturing and packaging to food & beverage, electronics, and automotive paint spraying, they are renowned for the peace of mind that comes with reliable production and zero risk of oil contamination. And with energy-efficient performance and low maintenance costs, they are a dependable way to safeguard profits as well as end products.





### High-quality air

100% oil-free air to safeguard your production



### Efficiency

State-of-the-art technologies to save time and costs



### Complete solution

Plug & Play package for simplified installation and ownership



### Reliability & expertise

Optimized components and easy maintenance



### Superb operator experience

- 70 dBA (low noise levels)
- Compact design



# Engineered to enhance your profits

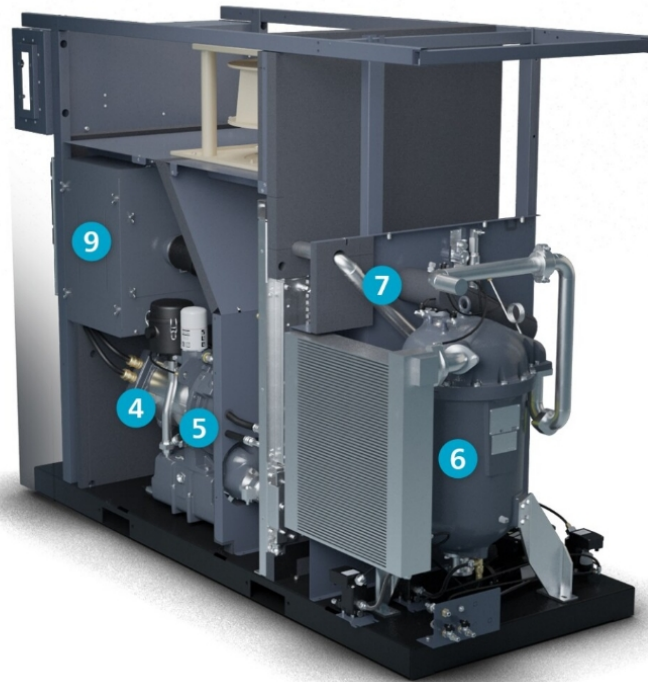
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To ensure the success of your business, you need to guarantee consistent quality while minimizing your overheads. A ZT 30-50 VSD+ compressor keeps you on track by delivering a reliable supply of clean, dry air with the lowest possible energy consumption for your operation. To cut running costs even further, every component is optimized for long life and easy servicing.



# ZT 30-50 VSD+ FF iMD

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## 1 Advanced Elektronik® monitoring system

- Touch screen operating system with numerous control and monitoring features.
- Embedded control algorithms enhance efficiency and reliability.

## 2 Soundproof canopy

- Sound insulation allows for installation in most working environments.
- No need for a separate compressor room.

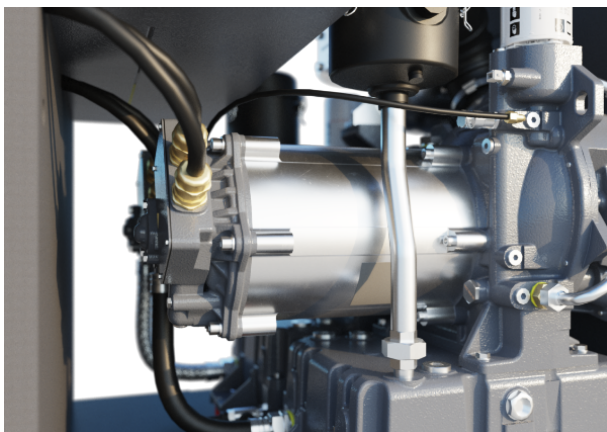
## 3 NEOS Next frequency converters

- In-house designed NEOS Next frequency converters ensure stable operation up to 50°C/122°F.
- IP54 grade protection for reliability even in harsh conditions.
- NEOS Next contains the main frequency drive for the drive motor plus an auxiliary drive for the cooling fan and dryer.
- Two NEOS Next frequency converters are combined with two IE5 ultra-premium efficient permanent magnet motors to optimize load distribution at every running condition.
- ZT 30-50 VSD+ compressors can range between 28 and 100% of their maximum capacity (turn down 72%), ensuring stable net pressures and maximum energy savings.



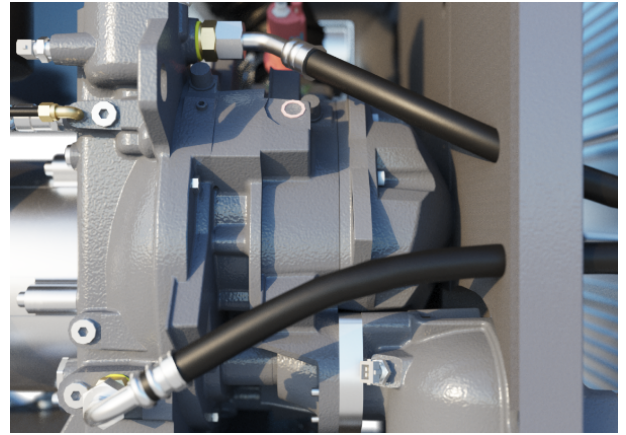
## 4 Mechanical drive system

- Two direct coupled permanent magnet drive motors for the low- and high-pressure elements, each with its own frequency converter.
- Oil-cooled motors with IP66 grade protection grade and proven performance in the field.
- Optimized intercooler pressure for the complete speed range for premium reliability and efficiency.



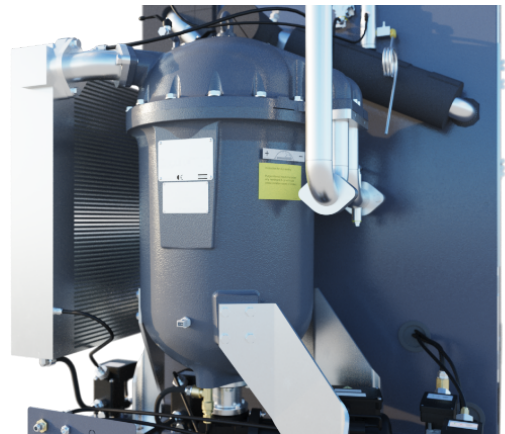
## 5 Oil-free tooth element

- Proven reliability and durability.
- Most efficient element in this power range of oil-free compressors.



## 6 Integrated dryer

- Reduces energy consumption of the integrated air treatment in light load conditions.
- Improved water separation.
- More stable Pressure Dew Point (PDP).



## 7 Reliable cooling

- Air-cooled oil coolers, intercooler, and aftercooler.
- Frequency-controlled fan optimizes cooling for all running conditions.
- Oil cooling shields permanent magnet motors from the environment and makes them more robust.



## **8 Plug & play package**

- Complete solution for easy installation and maintenance.
- No unnecessary interlinking of extra components.
- Reduced risk of downtime. SD+ is designed for easy installation and maintenance. No unnecessary interlinking of extra components, so no extra risk for downtime.

## **9 Compact design**

- Designed to have the smallest possible footprint.
- The Pack version without integrated dryer is the most compact of all.
- The Full Feature version with integrated ID refrigerant dryer and IMD rotary drum dryer saves considerable space and installation work compared to similar freestanding dryers.

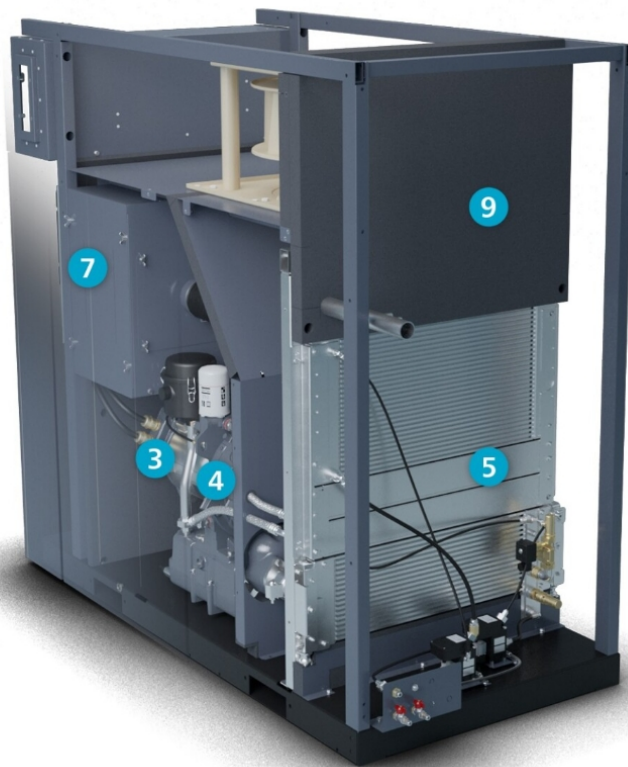
## **10 Low maintenance**

- Components strategically placed for ease of access.
- Oil-lubricated motor bearings do not require re-greasing.



# ZT 30-50 VSD+

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## 1 Soundproof canopy

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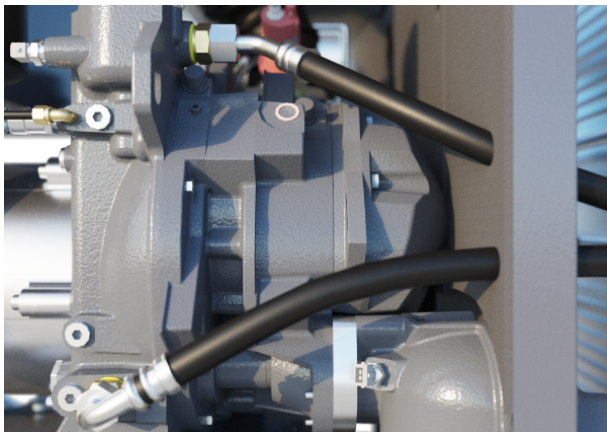


## 3 Permanent magnet motor

A proven design with a direct coupled permanent magnet drive motor for low- and high-pressure element, each with their own frequency converter. Oil cooled permanent magnet motors with IP66 protection grade that have stood the test of time in other product ranges in real field conditions. Optimization of intercooler pressure for the complete speed range. That is premium reliability combined with premium efficiency.

## 4 Oil-free tooth element

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- Most efficient element in this power range of oil-free compressors.



## 5 Reliable cooling

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# Superior air quality with zero contamination risk

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Atlas Copco has pioneered oil-free air technology for over 60 years. Through continuous research and development, we have become the benchmark for air purity and were the first manufacturer to be awarded ISO 8573-1 Class 0 certification. Today, we offer the largest range of oil-free air compressors and blowers in the industry.

What is the contamination risk?

- Filter failure
- Oil-carry over



## Clean, dry and 100% oil-free

Untreated compressed air contains moisture and may contain dirt particles. As well as damaging your air system, any contamination can have serious implications for your product quality and your reputation in the market. The resulting costs to your business far exceed the cost of effective air treatment. We therefore provide a complete range of air treatment solutions to safeguard your investments, equipment, production processes and end products.

## Food safety approved

Atlas Copco is one of the few compressor manufacturers to have its oil-free compressors and related dryers and filters certified by Lloyds Register Quality Assurance for ISO 22000, the food safety management system.

## Enhanced durability and productivity

High-quality air reduces the risk of corrosion, prolonging the life span of production equipment. A ZT 30-50 VSD+ package produces clean, dry air that enhances your system's reliability, avoiding costly downtime and production delays.

# Building energy savings into your process

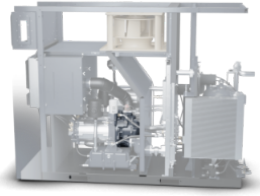
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Did you know that compressed air generation can amount to over **40%** of a plant's total electricity bill? And that energy consumption can account for over **80%** of a compressor's lifecycle cost? For businesses serious about increasing their profits, energy consumption is an obvious target. It was therefore one of the leading design priorities for our ZT 30-50 VSD+ compressors.



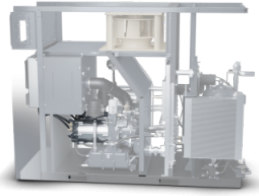
## Energy-saving components

Our engineers took every opportunity to reduce energy consumption in these machines. The patented elements are designed in-house for maximum efficiency. A superior coating on the active surfaces of the stainless steel rotors contributes to the most efficient oil-free tooth technology in this capacity range. A unique Z seal design further reduces running costs and guarantees 100% certified oil-free air for your application.



### Element

- In-house designed.
- Maximum efficiency of the working area.
- 40% increased lifetime.
- Unique Z seal design.
- Atlas Copco superior rotor coating for high efficiency and durability.



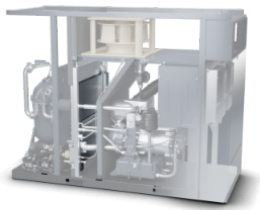
### Motor

- IP66 oil-cooled Permanent Magnet Motor with oil-lubricated bearings.
- Class-leading efficiency (IE5 - 97%) and rock-solid reliability.
- Full regulation between 15 to 100% of the maximum capacity ensuring energy savings at lower compressor air demand.



### Neos Next

- Exceptional piece of engineering, developed in-house.
- With an IP54-rated protection from dust and dirt.
- Operates dependably in hot conditions : up to 50°C /60°C by de-rating.
- Entire electrical cubicle in one compact unit.



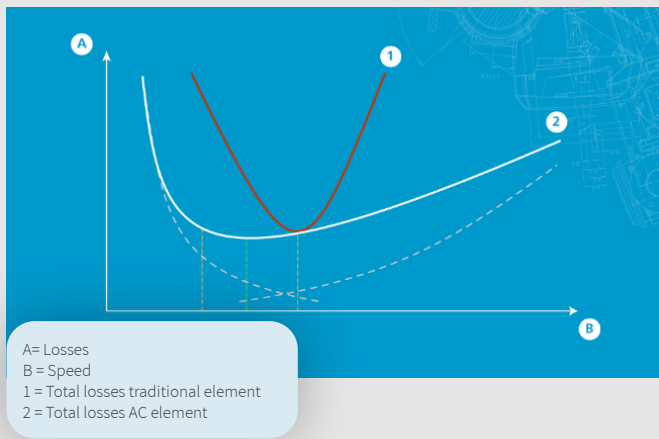
### VSD cooling fans

The completely redesigned cooling air flow supported by a VSD cooling fan ensures maximum energy savings at lower RPMs.



### Plug & play

- Integrated rotary drum dryer option (iMD) for moisture sensitive applications.
- The Z VSD+ iD integrates a refrigerant dryer inside the compressor canopy.

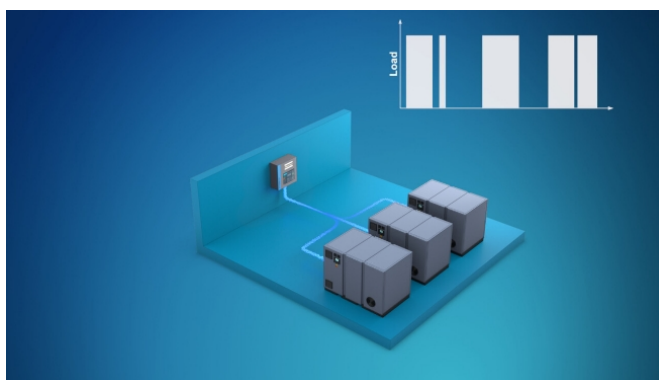


## VSD+ with dual NEOS drives

Atlas Copco pioneered VSD technology in the compressed air industry to offer major energy savings while protecting the environment for future generations. Today, we offer the widest range of integrated VSD compressors on the market.

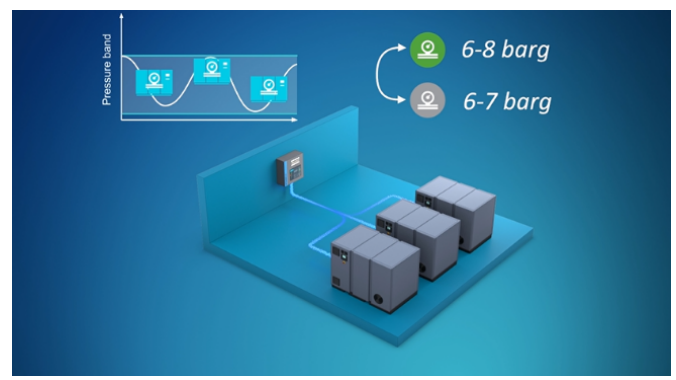
VSD technology automatically adjusts the motor speed to air demand, reducing energy consumption by up to 35%. For the ZT 30-50 VSD+ range, we added a specially designed NEOS inverter to constantly optimize the motor speed, and our own Permanent Magnet Motor for class-leading efficiency.

Featuring dual NEOS drives, the ZT 30-50 VSD+ range has the widest operating range on the market. The units can operate from 28 to 100% load without wasting energy from unloaded operation, resulting in huge energy savings during periods of low to medium air demand. The dual NEOS drive system also keeps the compressor working at optimal efficiency – at any pressure – consuming less energy than a standard fixed speed machine or a VSD machine with a fixed gear ratio.



## Optimized air flow

The ZT VSD+ brings cool, dense air into the package for optimal compression efficiency. Carefully designed coolers and strategically positioned piping and components minimize pressure drop in the package, while zero-loss drains ensure that no compressed air is wasted.



## Advanced control algorithms

Advanced algorithms control your equipment to save energy when demand is low. For example, timer functions can stop your machines at night and during the weekend if no compressed air is needed. Alternatively, a dual pressure band can be implemented with lower pressure settings for these periods.

# Smart AIR solutions

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With the ZT 30-50 VSD+ compressor range, Atlas Copco provides a total solution for superior performance and transparent costs. The fully integrated, ready-to-use package includes the internal piping, coolers, motor, lubrication, and control system. The Full Feature version even integrates an ID refrigerant or IMD adsorption dryer for impeccable results. Installation is fault-free, commissioning time is low, and no external instrument air is required. You simply plug and run.



# Solid, stable, and built to last

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From robust, time-proven components to the most effective cooling technologies, ZT 30-50 VSD+ compressors are packed with innovations that keep your process running smoothly and continuously day after day, year after year. Along with first-class reliability to ensure uninterrupted production, we are committed to excellent service with strong local presence. Our expert teams are always on hand to answer questions, discuss solutions and take care of your servicing and maintenance needs.





## Complete solutions and Total Responsibility

Atlas Copco is much more than a compressor manufacturer. We provide complete compressed air solutions that take as much work as possible out of our customers' hands, leaving them free to focus on their core business. This includes assistance with equipment selection, purchasing, installation, adaptations, optimization, auditing, maintenance, spare parts, service plans and access to our profound and wide-ranging expertise.



## Full Feature

Our **Full Feature** concept is the ultimate solution for simplified installation, with the compressor, dryer and all the options you need built into one package. We take care of all the mechanical and electrical connections, saving you time, money, and floor space.



Pack concept



Full Feature concept

## Oil-free air compressors for clean air

For the past sixty years, Atlas Copco has been pioneering the development of oil-free air technology, resulting in a range of oil-free air compressors designed specifically for applications that can make no compromise when it comes to clean, 100% oil-free air.

By maintaining and strengthening its world-leading position through continuous research and development, Atlas Copco was able to achieve a new milestone in setting the standard for air purity: it was the first manufacturer to be awarded ISO 8573-1, ed3. 2012, Class 0, for oil content.





### SMARTLINK for expert monitoring

Knowing the status of your compressed air equipment at all times is the key to efficiency and availability. SMARTLINK provides customized reports on your compressor room's energy performance as well as early warnings enabling timely component replacement. This results in more uptime and prevents production loss.

### Total Responsibility Plan

Our **Total Responsibility Plan** is a comprehensive service plan that keeps your equipment running optimally in all conditions. It covers preventive maintenance, breakdown risk reduction, quick resolution of any performance issues and, if necessary, complete overhauls.



# Options for every application

The standard ZT 30-50 VSD+ package can be customized with a range of optional features to tailor its performance for different production environments.

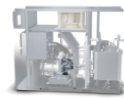
Anchor pads	Integrated refrigerant dryer (ID)
ANSI flanges	Integrated MD dryer (iMD) for moisture sensitive applications
High ambient variant for warm regions (50°C ambient temperature)	Dryer bypass
Flanged inlet	Silicone-free rotor (for MD) for deeper dewpoints
Main power isolator switch	Anti condensation heaters
IT variant (IEC variants only)	MD heater for deeper dewpoints
Test certificate	Fast Acting Fuse



iMD <sup>1</sup>



MD heater <sup>2</sup>



Silicon-free rotor <sup>3</sup>



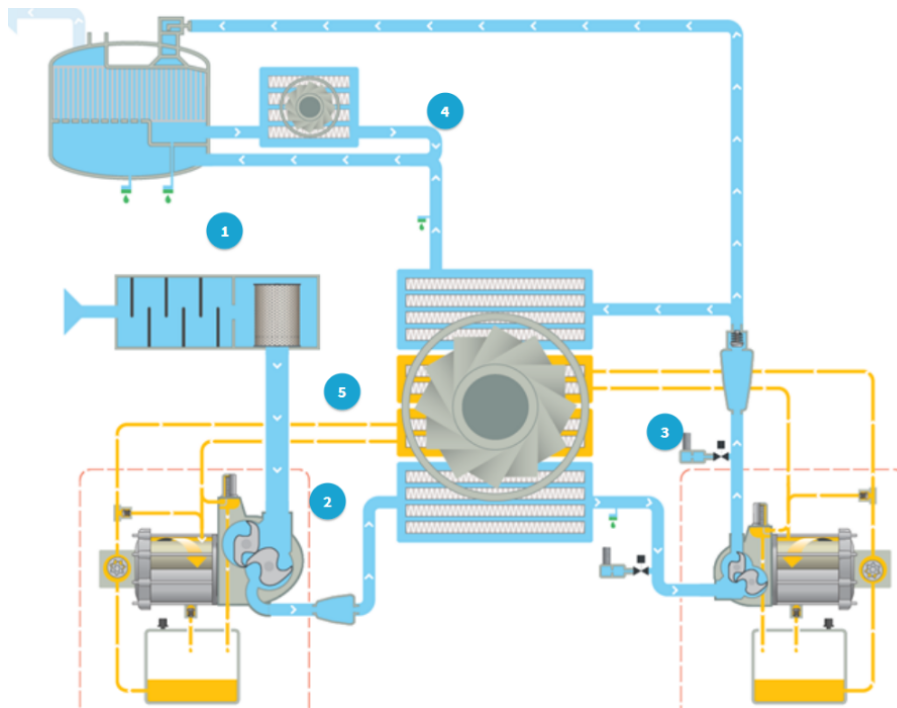
High ambient variant <sup>4</sup>



Further customisation <sup>5</sup>

Please note that the availability of the option depends on the chosen configuration.

# Oil and air flows: your step-by-step guide



Legend:

1. Inlet & filtration
2. First compression & cooling
3. Second compression & cooling
4. Integrated dryer
5. Oil flow

## Inlet & filtration

The air (represented by the light blue flow) is drawn into the compressor through the inlet filter, where it is cleaned. Then it passes through the throttle valve with its integrated blow off valve which takes care of the load unload regulation. The air then continues to the compression stage.

## First compression & cooling

The air pressure is raised to an intermediate pressure, after which the air is cooled down in the intercooler. Next it passes through a moisture separation system before entering the high pressure stage.

## Second compression & cooling

In the high pressure stage, the pressure is brought to the final pressure. The air at the outlet of the high pressure stage passes via the pulsation damper with integrated check valve to the aftercooler. Here it is cooled down and moisture is separated and evacuated. The compressed air leaves the compressor through the outlet connection flange.

## Integrated dryer

The cooled wet compressed air is mixed with 40% of the cooled regeneration air and enters the dryer. The dry compressed air with guaranteed dew point is now ready for use in your application.

## Oil flow

The oil path within the compressor is represented by the yellow flow. The oil pump sucks oil from the oil sump and pumps it through the oil cooler and the high efficiency filter. This delivers cool, clean oil to the bearings, the gears, and the compressor's element jackets. Note that oil never comes into contact with the air. This ensures completely oil-free air for your process.

# Specifications

## Specifications ZT 30-50 VSD (Metric)

TYPE	Working pressure		Free Air Delivery		Power rating	Noise level
		bar(e)	l/s	m <sup>3</sup> /min	kW	dB(A)
ZT 30 VSD+ – 8.6	Minimum	4	40.4 – 95.5	2.42 – 5.73	30	66
	Effective	7	39.9 – 93.6	2.36 – 5.62		
	Maximum	8.6	37.9 – 74.8	2.28 – 4.49		
ZT 37 VSD+ – 8.6	Minimum	4	40.4 – 112.6	2.42 – 6.75	37	69
	Effective	7	39.9 – 110.1	2.36 – 6.61		
	Maximum	8.6	37.9 – 95.6	2.28 – 5.74		
ZT 45 VSD+ – 8.6	Minimum	4	40.4 – 135.8	2.42 – 8.15	45	68
	Effective	7	39.3 – 132.3	2.36 – 7.94		
	Maximum	8.6	37.9 – 118.2	2.28 – 7.09		
ZT 50 VSD+ – 8.6	Minimum	4	40.4 – 153.7	2.42 – 9.22	50	70
	Effective	7	39.3 – 147.0	2.36 – 8.82		
	Maximum	8.6	47.2 – 144.5	2.83 – 8.67		

## Specifications ZT 30-50 VSD (Imperial)

TYPE	Working pressure		Free Air Delivery		Power rating	Noise level
		psig	l/s	cfm	Hp	dB(A)
ZT 30 VSD+ – 8.6	Minimum	58	40.4 – 95.5	85.5 – 202.3	40	66
	Effective	102	39.9 – 93.6	83.2 – 198.3		
	Maximum	125	37.9 – 74.8	80.3 – 158.4		
ZT 37 VSD+ – 8.6	Minimum	58	40.4 – 112.6	85.5 – 238.5	50	69
	Effective	102	39.9 – 110.1	83.2 – 223.4		
	Maximum	125	37.9 – 95.6	80.3 – 202.6		
ZT 45 VSD+ – 8.6	Minimum	58	40.4 – 135.8	85.5 – 287.7	60	68
	Effective	102	39.3 – 132.3	83.2 – 280.2		
	Maximum	125	37.9 – 118.2	80.3 – 250.5		
ZT 50 VSD+ – 8.6	Minimum	58	40.4 – 153.7	85.5 – 325.6	67	70
	Effective	102	39.3 – 147.0	83.2 – 311.5		
	Maximum	125	47.2 – 144.5	100.0 – 306.1		

## Weight ZT 30-50 VSD (Metric)

TYPE	Weight (kg)		
	Pack	Full Feature (iMD)	Full feature (iD)
ZT 30 VSD+	1350	1610	1504
ZT 37 VSD+			
ZT 45 VSD+	1373	1646	1531
ZT 50 VSD+			

### Weight ZT 30-50 VSD (Imperial)

TYPE	Weight (lbs)		
	Pack	Full Feature (iMD)	Full feature (iD)
ZT 30 VSD+	2976	3549	3316
ZT 37 VSD+			
ZT 45 VSD+	3027	3629	3375
ZT 50 VSD+			

### Dimensions ZT 30-50 VSD (Metric)

TYPE	Length	Width	Height
ZT 30-50 VSD+	2005	967	1889
ZT 30-50 VSD+ (FF)	2440		

### Dimensions ZT 30-50 VSD (Imperial)

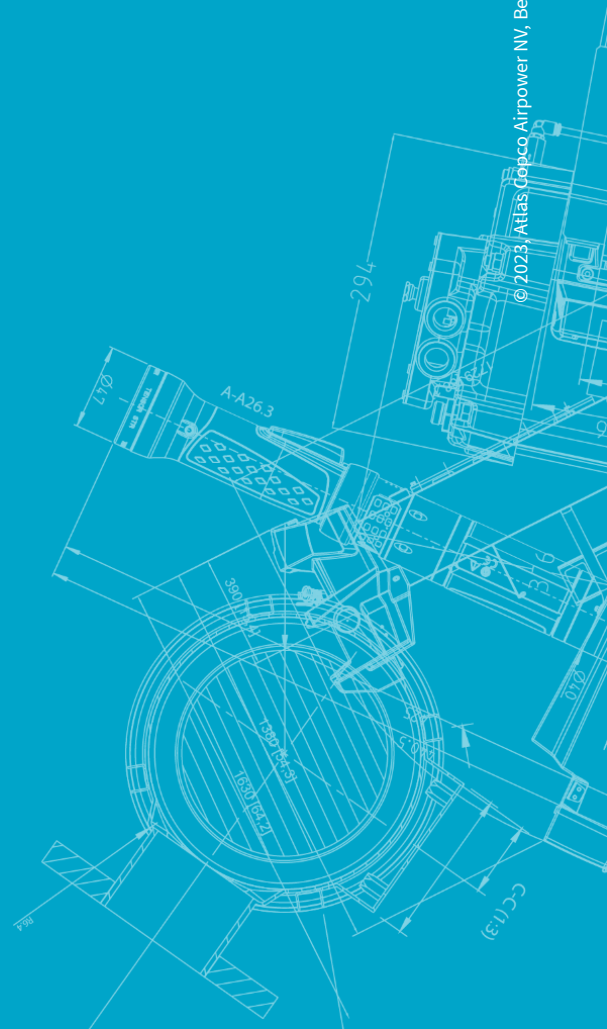
TYPE	Length	Width	Height
ZT 30-50 VSD+	79	38	74
ZT 30-50 VSD+ (FF)	88		

Data may vary for other operating modes, versions and conditions. Consult Atlas Copco for details.

Data and specifications are subject to change without prior notice.



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