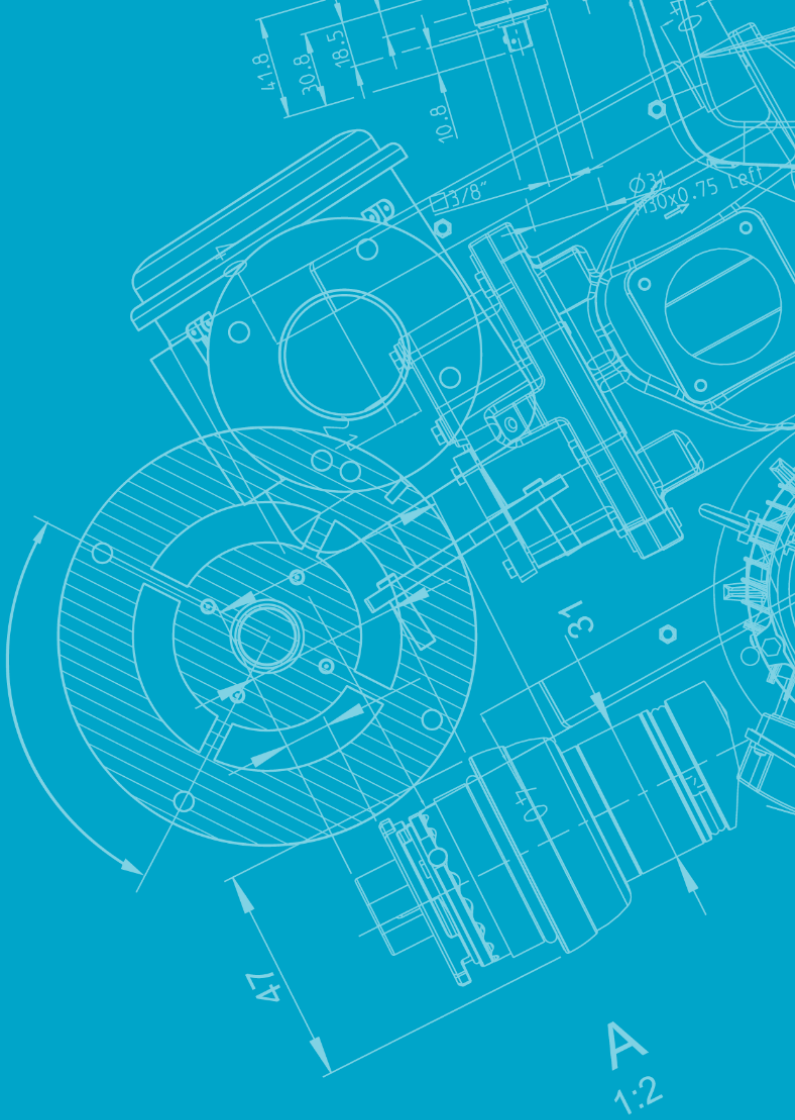


# Oil-free rotary screw compressors.

ZR/ZT 75-160 VSD+




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# Setting the standard in energy efficiency, safety and reliability

The shortest route to superior productivity is to minimize operational cost while maintaining an uninterrupted supply of the right quality of air. The Atlas Copco Z compressor series is focused on effectively saving energy, ensuring product safety – only oil-free machines exclude contamination risks for 100% – and guaranteeing the utmost reliability around the clock. And not just today, but day after day, year after year, with minimal maintenance cost, few service interventions and long overhaul intervals.



## 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

- Low noise levels
- Compact design



# Air Quality

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.

## Things to avoid in compressed air



Oil [1]



Dust [2]



Water [3]

[1] Oil particles entering the compressed air system can create product contamination and damage your end products. With our oil-free products and filtration solutions we can deliver Class-0 air for industries like Food & beverage, Medical & health care, Textiles, Chemical,…

[2] Dust in your compressed air creates extra friction, which leads to extra wear & tear in e.g. pneumatics. Our wide range of filtration solutions can remove all levels of dust in your system.

[3] Water in compressed air creates corrosion, rust and can damage your end product. We have Twin, Desiccant and Rotary drum dryers to remove any level of water in your air.



**Which Air Quality do you require?**

CLASS 0 = As specified by the equipment user or supplier and more stringent than class 1:
*CLASS 1 = < 0.01*
*CLASS 2 = < 0.0*
*CLASS 3 = < 1*
*CLASS 4 = < 5*

Current ISO 8573-1 (2010) classes (the five main classes and the associated maximum
concentration in total oil content). Concentration total oil (aerosol, liquid, vapor) mg/m$^3$. Contact your local Atlas Copco representative to decide the right air quality for your application needs.

## Our air treatment portfolio



Refrigerant dryer [1]



Dessicant dryer [2]



Rotary Drum Dryer [3]



Filters [4]

[1] Refrigerant dryers are the most common and consist of an air-to-air heat exchanger and an air to- Freon heat exchanger. They are used to avoid free water and corrosion in the system. A relative humidity of below 50% is enough to achieve this. Refrigerant dryers are available in a water-& aircooled variants.

[2] Adsorption dryers are used when the compressed air application requires a pressure dew point below 0°C. In most cases, the dryers consist of two pressure vessels next to each other. Both vessels are filled with desiccant. When one vessel is removing moisture, the other is regenerating and vice versa.

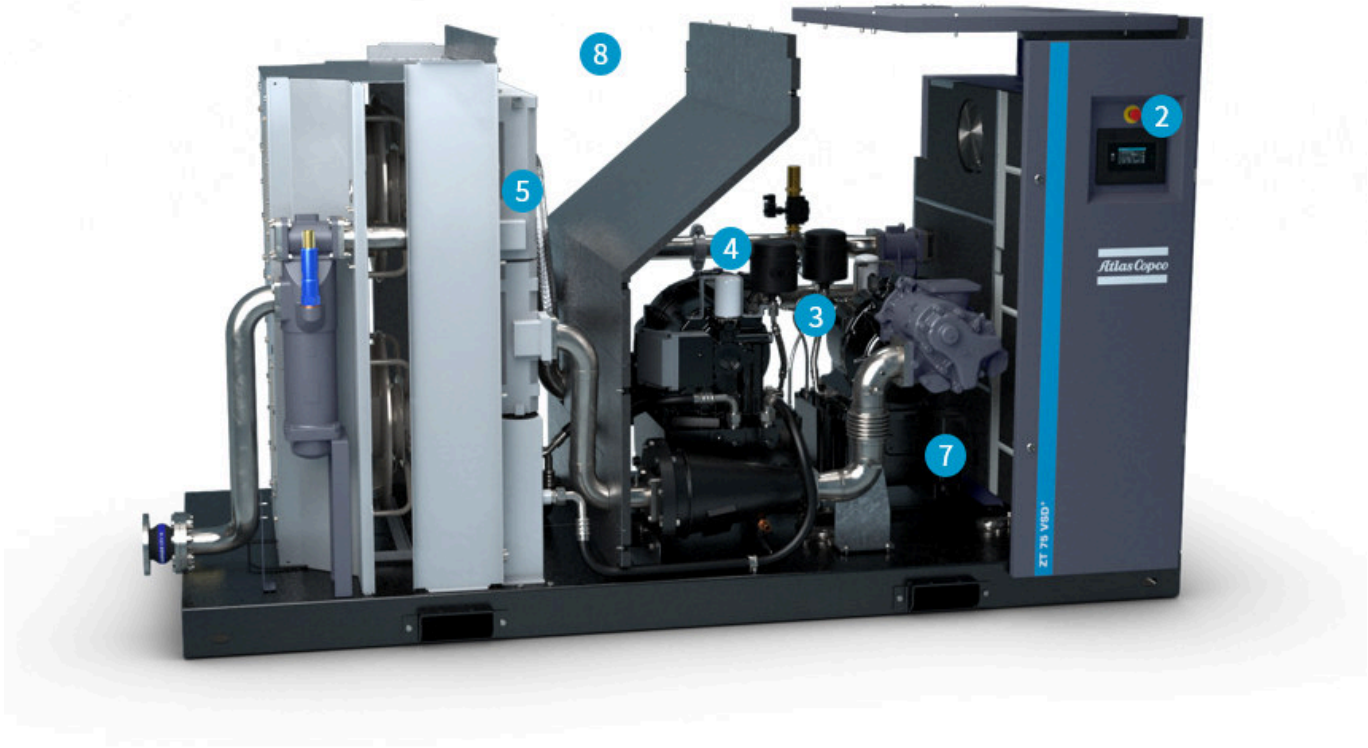
[3] Another variant is the rotary drum adsorption dryer. It exists of one vessel with a drum. This drum is a honeycomb structure on which the adsorption material is impregnated. ¾ of the drum is used to dry the compressed air, while the other quarter is used for regeneration. The regeneration is done with hot compressed air.

[4] We offer a wide selection of filtration solutions for compressed air with different filter types and grades to remove any dust or oil from your compressed air system.

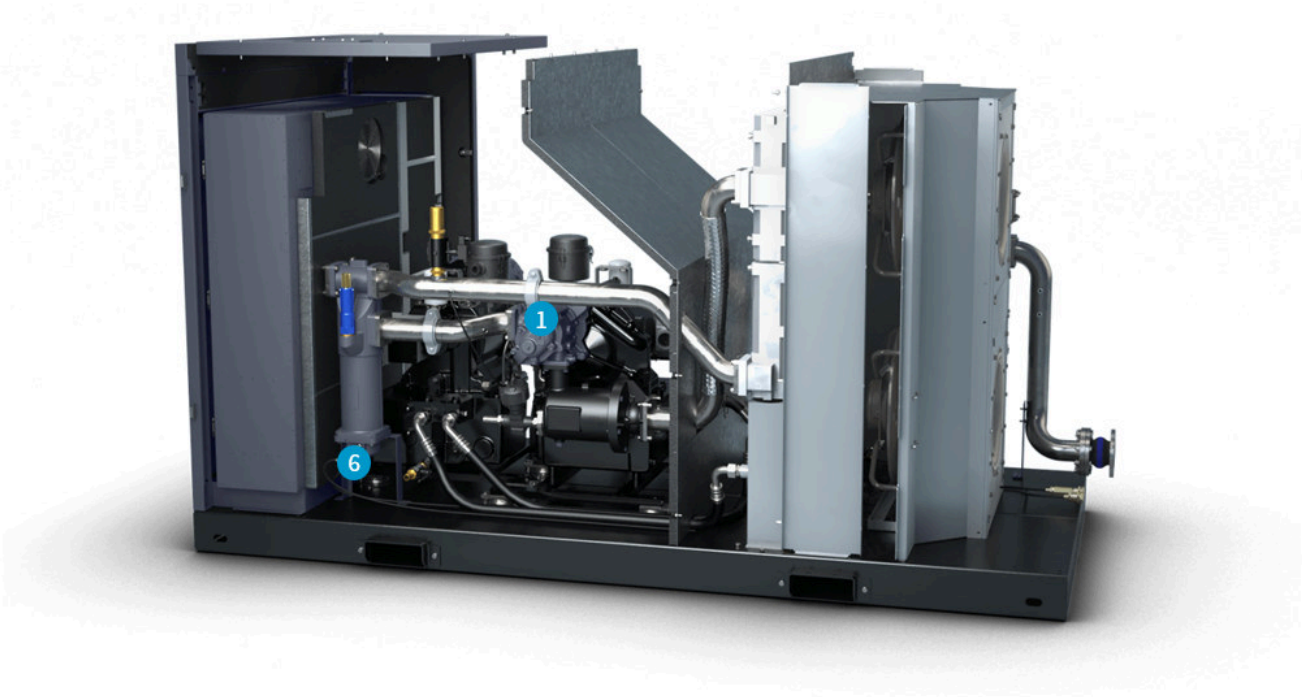


# ZT 75-160 VSD+

**ZT 75-160 VSD+**




**ZT 75 VSD+**



## 1 Reliable element

• Next generation world class compression element.
• Atlas Copco superior rotor coating for high durability.
• Thermal efficiency reduces the expansion leading to reduces wear and increased reliability.
• More compact, improved rotor profiles and cooling jackets for maximum durability.

## 2 Advanced touch screen monitoring system

• User-friendly Elektronikon® Touch, with enhanced connectivity potential.
• Included warning indications, maintenance scheduling and online visualization of the machine's condition for increased reliabiltiy.

## 3 Highly reliable motor

• IP66 Permanent Magnet water cooled motor with oil lubricated bearings.
• Rock-solid reliability prevents dust and water entering the motor.

## 4 Easy access

• Easy access to all components to minimize maintenance times.
• Hinged doors for easy routine maintenance e.g. cleaning.
• Saves valuable and often expensive floor space in a facility.
• Highest ratio flow/footprint on the market.

## 5 Reliable cooling

● Stress-free connections
● Compact integrated design resulting in low pressure drop
● High efficiency radial fans and Aluminium brazed heat exchanger lead to low cooler approach temperatures

## 6 Zero loss drains

• Clearance of all water & contamination
• Increasing both product & system reliability.

## 7 Grouped service items

• Minimal service time because service parts are grouped together for ease of access.
• All components are designed for serviceability and long lasting lifetime.

## 8 Soundproof design

• Silenced canopy ensures optimal working conditions for everyone in the immediate environment.
• Optimized internal ducting and integrated pulsation damper to reduce the noise level.
• High quality coated canopy to prevent rust.

## 9 Reliable control – NEOS drive

• Atlas Copco NEOS inverter designed to work in the harsh conditions of the compressor house.
• Modular design allows replacement of individual components, reducing maintenance cost.
• Cubicle designed to keep the inverter cool extending the lifetime & increase operational efficiency.

## 10 Integrated dryer

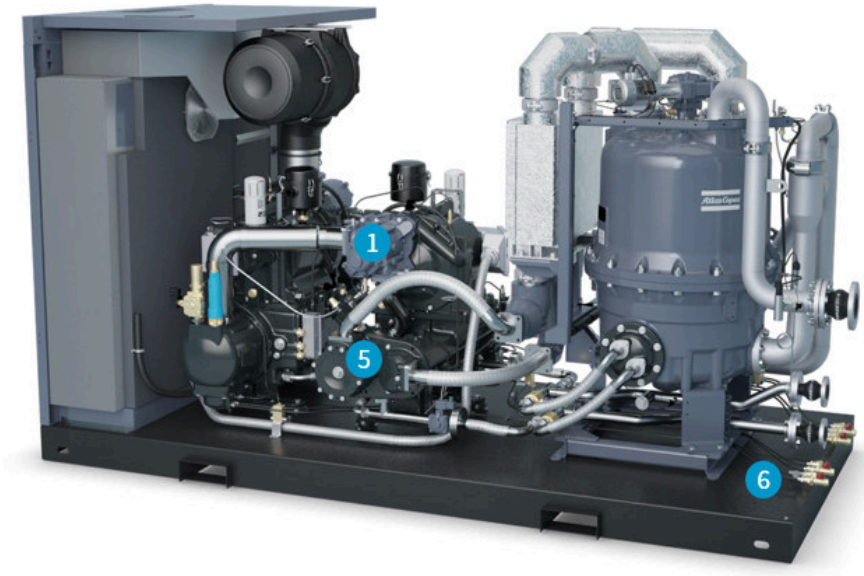
Having an integrated dryer helps for easier installation, less pressure drop because of more efficient connections. On top of that it also saves a lot of space in your compressor room.

# ZR 75-160 VSD+ iMDG

**ZR 75-160 VSD+ IMDG**




**ZR 75-160 VSD+ IMDG**



## 1 High performance elements

- Next generation world class compression element.
- Atlas Copco superior rotor coating for high durability.
- Thermal efficiency reduces the expansion leading to reduced wear and increased reliability.
- More compact, improved rotor profiles and cooling jackets for maximum durability.

## 2 Advanced touch screen monitoring system

- User-friendly Elektronikon® Touch, with enhanced connectivity potential.
- Included warning indications, maintenance scheduling and online visualization of the machine's condition for increased reliability.

## 3 Efficient motor

- Permanent Magnet water cooled motor with oil lubricated bearings.
- Rock-solid reliability prevents dust and water entering the motor.

## 4 NEOS drive

- Atlas Copco NEOS inverter is designed to work in the harsh conditions of the compressor house.
- Modular design allows replacement of individual components, reducing maintenance cost.
- The cubicle keeps the inverter cool extending the lifetime & increasing operational efficiency.

## 5 Reliable cooling

- Cooler with highly efficient water separator for higher reliability.
- Stainless steel enlarged surface coolers to ensure top performance over a long lifetime.
- Pipes with star profile form bi-anodised aluminium for preventing corrosion
- Easily removable for quick, cost-efficient maintenance.

## 6 Zero loss drains

- Clearance of all water & contamination.
- Increasing both product & system reliability.

## 7 Easy access

- Easy access to all components to minimize maintenance times.
- Hinged doors for easy routine maintenance eg. cleaning.
- Saves valuable and often expensive floor space in a facility.
- Highest ratio flow/footprint on the market.

## 8 Soundproof design

- Silenced canopy ensures optimal working conditions for everyone in the immediate environment.
- Optimized internal ducting and integrated pulsation damper to reduce the noise level.
- High quality coated canopy to prevent dust.

## 9 Grouped service items

- Minimal service time because service parts are grouped together for ease of access.
- All components are designed for serviceability and long lasting lifetime.

## 10 Integrated dryer

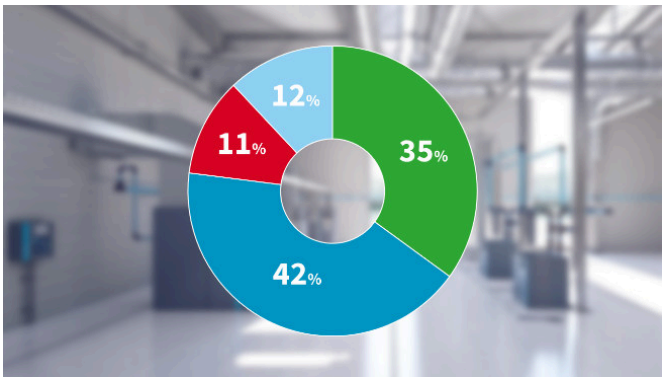
- Having an integrated dryer helps for easier installation, less pressure drop because of more efficient connections
- On top of that it also saves a lot of space in your compressor room.

# Efficiency

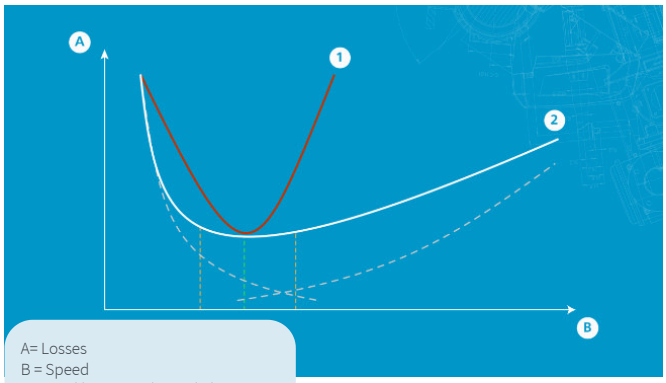
Did you know that compressed air generation can amount to over **40%** of a plant's total electricity bill? And that energy consumption can account for over **80%** of a compressor's lifecycle cost? For businesses serious about increasing their profits, energy consumption is an obvious target. It was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

## Designed for efficiency

Over 80% of a compressor's lifecycle cost is taken up by the energy it consumes. Moreover, the generation of compressed air can account for more than 40% of a plant's total electricity bill. The ZR 75-160 VSD+ is not only designed for reliability, but also for efficiency. Our unique and patented elements are designed in-house for maximum efficiency. The superior rotor coating, compact rotor profiles and cooling jackets guarantee maximum compression efficiency. The unique Z seal design guarantees efficient and 100% certified oil-free air for your application.




35% = VSD Savings
42% = Energy cost
12% = Installation cost
11% = Maintenance




A= Losses
B = Speed
1 = Total losses traditional element
2 = Total losses AC element

## 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 75-160 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 75-160 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 in the machine

The ZR 75-160 VSD+ brings cool dense air into the package for optimal compression efficiency. The piping and components are strategically placed to minimize the pressure drop in the package, leading to optimal efficiency. The coolers have been
carefully designed to keep the pressure drop at a bare minimum. Our zero loss drains account for zero waste of compressed air, making the ZR 75-160 VSD+ the most efficient machine on the market.




## Elektronikon Mk5 Touch

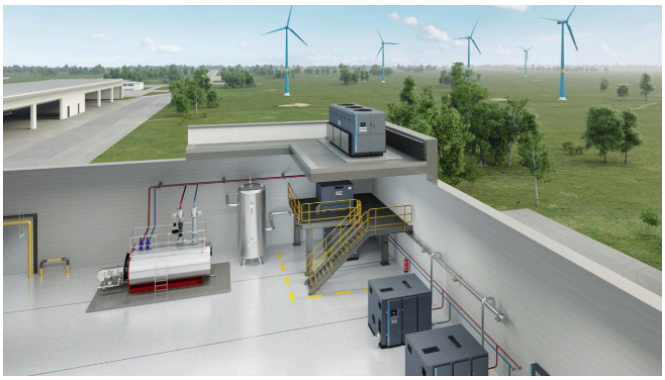
Our Elektronikon Mk5 touch unit controller is designed with Atlas Copco energy efficient algorithms to maximize flow and minimize power consumption. It controls both the compressor and the integrated converter, ensuring maximum machine safety within parameters.

Most production processes create fluctuating levels of demand which can create energy waste in low use periods. Using the Elektronikon® unit controller, you can switch between two different setpoints to optimize energy use and reduce costs at low use times.

## Energy Recovery

You can turn your compressor into an energy source. Air compressors equipped with Energy Recovery can help you achieve your goals in becoming carbon neutral. Compressed air is one of the most important utilities for the industry. It is also one of the largest consumers of energy. Up to 94% of the electrical energy is converted into compression heat. Without energy recovery, this heat is lost into the atmosphere via the cooling system and radiation.

You can use hot water recovered from the compressed air system for sanitary purposes and space heating. But it is particularly suitable for process applications. Using the hot water as boiler pre-feed or directly in processes requiring 70 to 90°C can save you costly energy sources such as natural gas and heating oil.






## SMARTLINK

**Monitor your compressed air installation with SMARTLINK**
Knowing the status of your compressed air equipment at all times is the surest way to achieve optimal efficiency and maximum availability.

**Go for energy efficiency**
Customized reports on the energy efficiency of your compressor room.

**Increase uptime**
All components are replaced on time, ensuring maximum uptime.

**Save money**
Early warnings avoid breakdowns and production loss.

# smart AIR solutions

A compressor is only one component in the bigger picture of a smart AIR solution. Only a complete compressed air system is an energy-efficient solution. We designed a range of class-leading compressed air products, fully optimized to work better together. A smart AIR solution is the most efficient and reliable combination of a compressor with our air and gas equipment. This solution can include dryers, filters, controllers, energy recovery systems, nitrogen or oxygen generators, air receivers, coolers or boosters specified to your needs.




1
2
3
4
5
6

## 1 Compressors

Often people buy the same size compressor, but to optimize the system it's better to make a combination of different size compressors, technologies and controls.

## 2 Central controller

Having a central controller reduces the average pressure band. It also reduces the operating pressure of your machines.
• By reducing the pressure by 1 bar (or 14.5 psi), your energy usage lowers by 7%.
• By reducing the pressure by 1 bar (or 14.5 psi) decreases air leakages by 13%.
Multiple embedded functions in the Optimizer 4.0 in which pressure, capacity and speed can be regulated.

## 3 Integrated dryers

Our full feature concept offers an integrated dryer in the compressor. This has additional benefits, reducing installation cost, time and complexity, having dryers controlled together with the compressors, reducing connecting pipes, hence the chance of leakages and extra pressure drops. Another key benefit is the space savings that a full feature machine brings.

## 4 Air receiver

A correctly sized air receiver brings both energy efficiency and system reliability. It allows a narrow pressure band and limits the un-& offload cycles to reduce stress on element bearings and other internal components.

## 5 Air treatment portfolio

Atlas Copco has a wide air treatment portfolio that matches your needs. Our portfolio ranges from removing water, oil and dust from your compressed air to generating Oxygen and Nitrogen on site.

## 6 AIRnet

AIRnet is a piping solution that guarantees operational excellence for compressed air, vacuum, nitrogen and other inert gas applications. Available in aluminium and stainless steel. AIRnet Aluminium is the most effective solution for your air or gas network. Its fast and easy installation gets your operations up and running in record time. AIRnet is leak-proof and corrosion-free. Its pipes and fittings come with a 10-year warranty.

# Engineered solutions

With the ZR, Atlas Copco provides an all-in-one standard package incorporating the latest technology in a built-to-last design. To further optimize your ZR's performance or to simply tailor it to your specific production environment, optional features are available.



## Engineered Solutions

Atlas Copco recognizes the need to combine our serially produced compressors and dryers with the specifications and standards applied by major companies for equipment purchases. Strategically located departments within the Atlas Copco Group take care of the design and manufacturing of customized equipment to operate at extreme temperatures, often in remote locations.

## Innovative technology & engineering

All equipment is covered by our manufacturer warranty. The reliability, longevity and performance of our equipment will not be compromised. A global aftermarket operation employing 3600 field service engineers in 160 countries ensures reliable maintenance by Atlas Copco as part of a local service operation.

Each project is unique and by entering into partnership with our customers, we can appreciate the challenge at hand, ask the relevant questions and design the best engineered solution for all your needs.



# Services

Properly caring for your air compressor helps you lower your operating costs and minimizes the risk for unplanned breakdowns or production stops. Atlas Copco offers energy efficiency checks, service, repairs, spare parts and maintenance plans for all air compressors. Entrust your servicing to our expert professionals and ensure your business continues to run efficiently. Our plans cover repairs, preventative maintenance, spare parts, and more.



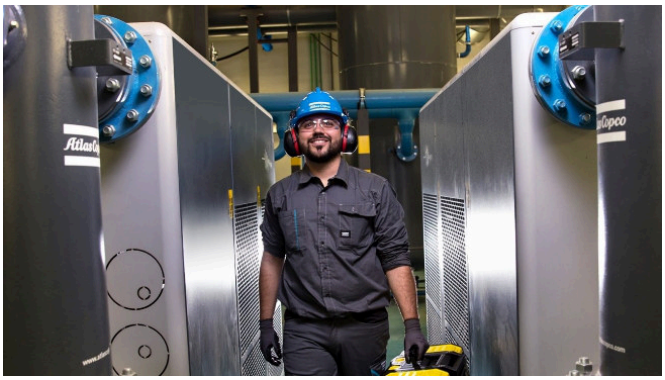


## Total solutions provider

Whether you're looking to buy equipment or for installation of equipment, adaptation of installations, auditing your installation, delivery spare parts, performing maintenance, have your installation covered under any level of service plan or further optimize your installation, Atlas Copco is your one stop shop for all of it. Without the risk of ending up between two discussing suppliers about responsibility, without you having to worry about planning all the different activities. Atlas Copco can take care of it all, so that you can focus on your core business.

## Total Responsibility Plan

What does it take to keep your equipment running in the most optimal conditions? As compressed air experts we know. All that knowledge, we have put into a comprehensive service plan called Total Responsibility. As the name suggests, Total Responsibility takes care of it all, from preventative maintenance, covering the risk of breakdowns and solving the problem if a breakdown occurs up to performing complete overhauls if and when needed.





## Installation

With our Full Feature concept, you buy simplified installation: not only the compressor, but also dryer and many of the options can be built into one package. This not only saves you valuable floor space, it drastically simplifies installation, saving time and money for contractors to execute work for connecting different components mechanically and electrically.

## AIRScan

As an energy conscious buyer, you have bought the most energy efficient equipment in the market. But in time, how sure are you that your equipment is still running in the most optimal and energy efficient conditions? If that is the case, it is time to ask Atlas Copco to audit your installation.

Atlas Copco has a world-wide network of trained employees to do measurements, analyze the results and propose improvements. What sets Atlas Copco apart from most of their competitors, is that we have put our knowledge and experience as compressed air specialists in the development of a simulation software called AIRchitect.

Thanks to this software, the recommendations we make from an AIRScan audit are not just ball park figures, they are realistic simulations of how your installation will perform after improvement. These tangible savings you will get as energy savings, money saved, and CO2 emissions decreased.

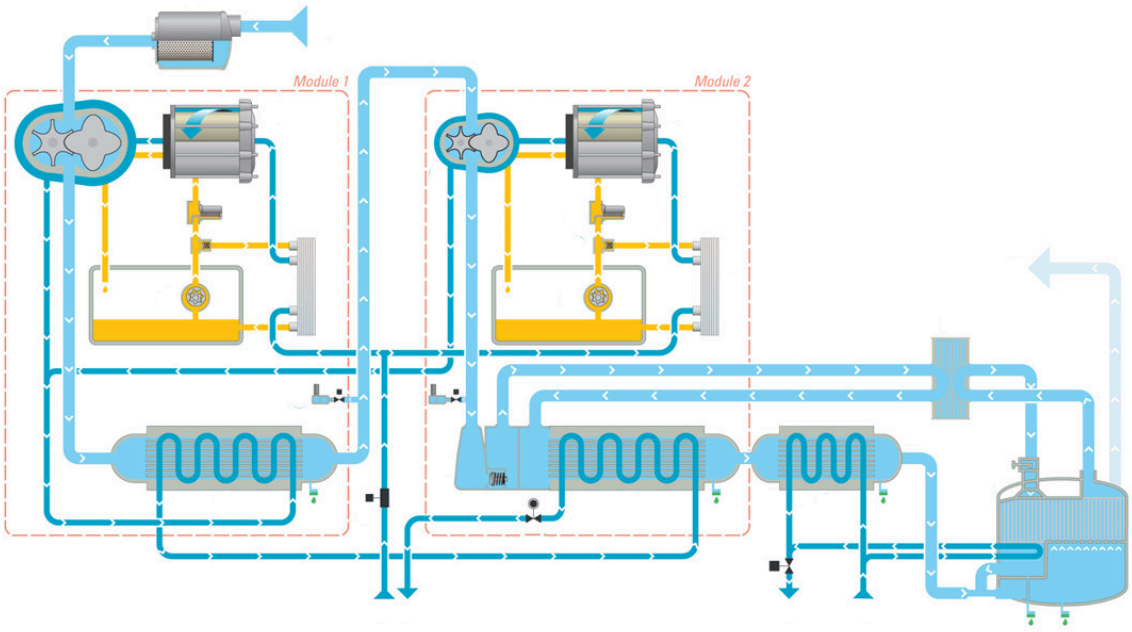


# Flowchart

Process flow, oil flow and cooling flow – step by step.



## ZR 75-160 VSD+ FF



# ZR 75-160 VSD+ ER iMDG

## 1 Filtration & compression

The air is drawn into the compressor through the inlet filter where the air is cleaned. It then continues to the first compression stage where the air is compressed to an intermediate pressure.

## 2 Cooling & second compression

After the first compression, the air is cooled down in the intercooler. Once the air is cooled down, it passes through a moisture separation system before entering the highpressure stage. In the high-pressure stage, the pressure is brought to its final pressure.

## 3 Exchanging heat & cooling

The hot wet compressed air at the outlet of the highpressure stage goes through the pulsation damper with integrated check valve to the heat exchanger. Here it
transfers the heat to the integrated dryer used further in the process.
The air continues to the aftercooler where it's cooled down and the moisture get's separated and drained.

## 4 Integrated dryer

The cooled wet compressed air is now 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.

## 5 Heat exchanger

40% of the dry air goes into the heat exchanger, where it picks up the heat from the incoming hot wet compressed air. This dry and hot regeneration air enters the
regeneration section of the drum, which passes through the regeneration cooler where it is cooled down and moisture is separated and drained. Afterwards it is mixed with the incoming cooled wet compressed air.

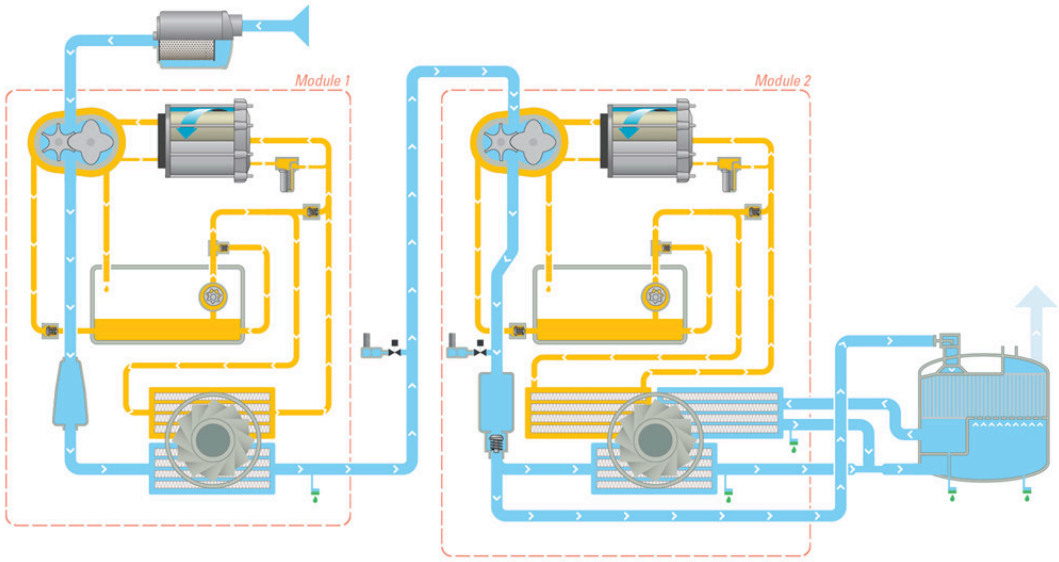
## 6 Oil

The yellow lines represent the oil flow of the compressor. Oil is pumped from the reservoir through a high efficiency filter to provide clean, cooled oil to the gears for lubrication. Afterwards the oil flows back into the reservoir. There also is a bypass valve that allows the oil to flow to the oil cooler, so the optimal temperature is guaranteed, increasing efficiency and durability of our components.

## 7 Water

The dark blue lines represent the water flow. Cooling water is brought into the cycle and splits towards the both modules and the dryer.
First of all, the cooling water is directed to the integrated dryer to cool the air.
Secondly, the water is goes to both the inter- and aftercooler to reduce the temperature of the compressed air.
Lastly, the water splits to the oil coolers to reduce the temperature of the oil. It then passes through the jackets of the motor and elements to guarantee an optimal temperature. The water continues back to the cooler and
is directed further to the water outlet.

## ZT 75-160 VSD+ FF



# Technical Specifications Pack

### ZR 75-160 VSD+ Pack 10.4 Bar

| TYPE | Working pressure (1) | | | Free Air Delivery FAD (2) | | | Installed motor power | Noise level (3) | PACK | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | bar(e) | psig | l/s | $m^3$/min | cfm | kW / HP | dB(A) | kg | lb |
| ZR 75 VSD+ – 10.4 | Minimum | 4 | 58 | 78.2 – 242.5 | 4.7 – 14.6 | 165.6 – 513.9 | 75 / 100 | 66 | 2500 | 5512 |
| | Effective | 7 | 101 | 78.8 – 230 | 4.7 – 13.8 | 167 – 487.3 | 76 / 100 | | | |
| | | 9 | 130 | 78.6 – 203.8 | 4.7 – 12.2 | 166.5 – 431.8 | 77 / 100 | | | |
| | Maximum | 10.4 | 150 | 77.6 – 184.9 | 4.7 – 11.1 | 164.3 – 391.7 | 78 / 100 | | | |
| ZR 90 VSD+ – 10.4 | Minimum | 4 | 58 | 78.2 – 298.3 | 4.7 – 17.9 | 165.6 – 632 | 90 / 120 | | | |
| | Effective | 7 | 101 | 78.8 – 284 | 4.7 – 17 | 167 – 601.7 | 91 / 120 | | | |
| | | 9 | 130 | 78.6 – 253.9 | 4.7 – 15.2 | 166.5 – 538 | 92 / 120 | | | |
| | Maximum | 10.4 | 150 | 77.6 – 232.2 | 4.7 – 13.9 | 164.3 – 492.1 | 93 / 120 | | | |
| ZR 110 VSD+ – 10.4 | Minimum | 4 | 58 | 78.2 – 345.2 | 4.7 – 20.7 | 165.6 – 731.5 | 110 / 150 | 68 | | |
| | Effective | 7 | 101 | 78.8 – 330.3 | 4.7 – 19.8 | 167 – 699.9 | 111 / 150 | | | |
| | | 9 | 130 | 78.6 – 299 | 4.7 – 17.9 | 166.5 – 633.6 | 112 / 150 | | | |
| | Maximum | 10.4 | 150 | 77.6 – 276.5 | 4.7 – 16.6 | 164.3 – 585.8 | 113 / 150 | | | |
| ZR 132 VSD+ – 10.4 | Minimum | 4 | 58 | 78.2 – 399.3 | 4.7 – 24 | 165.6 – 846.1 | 132 / 175 | 69 | | |
| | Effective | 7 | 101 | 78.8 – 384 | 4.7 – 23 | 167 – 813.7 | 133 / 175 | | | |
| | | 9 | 130 | 78.6 – 352 | 4.7 – 21.1 | 166.5 – 745.9 | 134 / 175 | | | |
| | Maximum | 10.4 | 150 | 77.6 – 329.2 | 4.7 – 19.8 | 164.3 – 697.5 | 135 / 175 | | | |
| ZR 145 VSD+ – 10.4 | Minimum | 4 | 58 | 78.2 – 430.6 | 4.7 – 25.8 | 165.6 – 912.3 | 145 / 200 | 70 | | |
| | Effective | 7 | 101 | 78.8 – 415.2 | 4.7 – 24.9 | 167 – 879.7 | 146 / 200 | | | |
| | | 9 | 130 | 78.6 – 383.2 | 4.7 – 23 | 166.5 – 811.9 | 147 / 200 | | | |
| | | 10.4 | 150 | 77.6 – 360.5 | 4.7 – 21.6 | 164.3 – 763.9 | 148 / 200 | | | |
| ZR 160 VSD+ – 10.4 | Minimum | 4 | 58 | 78.2 – 451.5 | 4.7 – 27.1 | 165.6 – 956.7 | 160 / 215 | | | |
| | Effective | 7 | 101 | 78.8 – 452.1 | | 167 – 958 | 161 / 215 | | | |
| | | 9 | 130 | 78.6 – 419.4 | 4.7 – 25.2 | 166.5 – 888.6 | 162 / 215 | | | |
| | Maximum | 10.4 | 150 | 77.6 – 396.1 | 4.7 – 23.8 | 164.3 – 839.3 | 163 / 215 | | | |

### ZT 75-160 VSD+ Pack 10.4 Bar

| TYPE | Working pressure (1) | | | Free Air Delivery FAD (2) | | | Installed motor power | Noise level (3) | PACK | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | bar(e) | psig | l/s | $m^3$/min | cfm | kW / HP | dB(A) | kg | lb |
| ZT 75 VSD+ – 10.4 | Minimum | 4 | 58 | 79 – 241 | 4.8 – 14.4 | 168 – 510 | 75 / 100 | 68 | 3135 | 6912 |
| | Effective | 7 | 101 | 79 – 227 | 4.7 – 13.6 | 167 – 482 | | | | |
| | | 9 | 130 | 78 – 200 | 4.7 – 12 | 164 – 424 | | | | |
| | Maximum | 10.4 | 150 | 76 – 180 | 4.6 – 10.8 | 161 – 382 | | | | |
| ZT 90 VSD+ – 10.4 | Minimum | 4 | 58 | 79 – 292 | 4.8 – 17.5 | 168 – 618 | 90 / 120 | 72 | | |
| | Effective | 7 | 101 | 79 – 277 | 4.7 – 16.6 | 167 – 587 | | | | |
| | | 9 | 130 | 78 – 246 | 4.7 – 14.8 | 164 – 521 | | | | |
| | Maximum | 10.4 | 150 | 76 – 223 | 4.6 – 13.4 | 161 – 473 | | | | |
| ZT 110 VSD+ – 10.4 | Minimum | 4 | 58 | 79 – 339 | 4.8 – 20.3 | 168 – 718 | 110 / 150 | | | |
| | Effective | 7 | 101 | 79 – 323 | 4.7 – 19.4 | 167 – 685 | | | | |
| | | 9 | 130 | 78 – 292 | 4.7 – 17.5 | 164 – 618 | | | | |
| | Maximum | 10.4 | 150 | 76 – 269 | 4.6 – 16.2 | 161 – 570 | | | | |

| TYPE | Working pressure (1) | | | Free Air Delivery FAD (2) | | | Installed motor power | Noise level (3) | PACK | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | bar(e) | psig | l/s | $m^3$/min | cfm | kW / HP | dB(A) | kg | lb |
| ZT 132 VSD+ – 10.4 | Minimum | 4 | 58 | 79 – 393 | 4.8 – 23.6 | 168 – 833 | 132 / 175 | 73 | | |
| | Effective | 7 | 101 | 79 – 377 | 4.7 – 22.6 | 167 – 800 | | | | |
| | | 9 | 130 | 78 – 345 | 4.7 – 20.7 | 164 – 732 | | | | |
| | Maximum | 10.4 | 150 | 76 – 322 | 4.6 – 19.3 | 161 – 682 | | | | |
| ZT 145 VSD+ – 10.4 | Minimum | 4 | 58 | 79 – 425 | 4.8 – 25.5 | 168 – 900 | 145 / 200 | 74 | | |
| | Effective | 7 | 101 | 79 – 409 | 4.7 – 24.5 | 167 – 867 | | | | |
| | | 9 | 130 | 78 – 377 | 4.7 – 22.6 | 164 – 798 | | | | |
| | | 10.4 | 150 | 76 – 353 | 4.6 – 21.2 | 161 – 749 | | | | |
| ZT 160 VSD+ – 10.4 | Minimum | 4 | 58 | 79 – 436 | 4.8 – 26.2 | 168 – 925 | 160 / 215 | | | |
| | Effective | 7 | 101 | | 4.7 – 26.2 | 167 – 925 | | | | |
| | | 9 | 130 | 78 – 410 | 4.7 – 24.6 | 164 – 869 | | | | |
| | Maximum | 10.4 | 150 | 76 – 391 | 4.6 – 23.5 | 161 – 829 | | | | |

# Technical Specs 13 bar

ZR 75-160 VSD+ Tech Specs 13 bar

| TYPE | Working pressure (1) | | | Free Air Delivery FAD (2) | | | Installed motor power | Noise level (3) | PACK | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | bar(e) | psig | l/s | $m^3$/min | cfm | kW / HP | dB(A) | kg | lb |
| ZR 75 VSD+ – 13 | Minimum | 9 | 131 | 78.5 – 185.6 | 4.71 – 11.14 | 166.3 – 393.3 | 75 / 100 | 67 | 2500 | 5512 |
| | Effective | 10.4 | 150 | 77.2 – 184.5 | 4.63 – 11.07 | 163.6 – 391 | 76 / 100 | | | |
| | Maximum | 13 | 189 | 75.6 – 148.6 | 4.54 – 8.92 | 160.2 – 314.8 | 77 / 100 | | | |
| ZR 90 VSD+ – 13 | Minimum | 9 | 131 | 78.5 – 232.7 | 4.71 – 13.96 | 166.3 – 493 | 90 / 120 | 68 | | |
| | Effective | 10.4 | 150 | 77.2 – 231.7 | 4.63 – 13.9 | 163.6 – 490.9 | | | | |
| | Maximum | 13 | 189 | 75.6 – 190 | 4.54 – 11.4 | 160.2 – 402.5 | | | | |
| ZR 110 VSD+ – 13 | Minimum | 9 | 131 | 78.5 – 276.6 | 4.71 – 16.59 | 166.3 – 586 | 110 / 150 | | | |
| | Effective | 10.4 | 150 | 77.2 – 275.7 | 4.63 – 16.54 | 163.6 – 584.2 | | | | |
| | Maximum | 13 | 189 | 75.6 – 232.2 | 4.54 – 13.93 | 160.2 – 492 | | | | |
| ZR 132 VSD+ – 13 | Minimum | 9 | 131 | 78.5 – 329 | 4.71 – 19.74 | 166.3 – 697.2 | 132 / 175 | 69 | | |
| | Effective | 10.4 | 150 | 77.2 – 328.4 | 4.63 – 19.7 | 163.6 – 695.8 | | | | |
| | Maximum | 13 | 189 | 75.6 – 284.7 | 4.54 – 17.08 | 160.2 – 603.2 | | | | |
| ZR 145 VSD+ – 13 | Minimum | 9 | 131 | 78.5 – 360.2 | 4.71 – 21.61 | 166.3 – 763.2 | 145 / 200 | 72 | | |
| | Effective | 10.4 | 150 | 77.2 – 359.6 | 4.63 – 21.58 | 163.6 – 762 | | | | |
| | Maximum | 13 | 189 | 75.6 – 316.8 | 4.54 – 19.01 | 160.2 – 671.3 | | | | |
| ZR 160 VSD+ – 13 | Minimum | 9 | 131 | 78.5 – 395.9 | 4.71 – 23.75 | 166.3 – 838.8 | 160 / 215 | | | |
| | Effective | 10.4 | 150 | 77.2 – 395.5 | 4.63 – 23.73 | 163.6 – 837.9 | | | | |
| | Maximum | 13 | 189 | 75.6 – 356.8 | 4.54 – 21.41 | 160.2 – 755.9 | | | | |

(2) Unit performance measured according to ISO 1217, Annex E, Edition 4 (2009) Reference conditions: – Relative humidity 0% – Absolute inlet pressure 1 bar (14.5 psi) – Intake air temperature 200C (680F) Free Air Delivery (FAD) is measured at effective working pressure.

(3) A-weighted emission sound pressure level at the work station (LpWSAd). Measured according to ISO 2151: 2008 using ISO 9614-2 (sound intensity scanning method). The added correction faction (+1- 3dB(A)) is the total uncertainty value (KpAd) conform with the test code.



Temperature control [1]



Performance optimization [2]

[1] – Special coating and seals designed to handle higher temperatures. – Oil cooler re-designed to handle higher oil temperatures.
[2] – Gear sets specifically selected for 13 bar outlet pressure. – Optimized interstage pressure through High pressure stage speed control





# Tech Specs iMD

### ZR 75-160 VSD+ iMD

| TYPE | Working pressure (1) | | | Free Air Delivery FAD (2) | | | Installed motor power | Noise level (3) | PACK | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | bar(e) | psig | l/s | $m^3$/min | cfm | kW / HP | dB(A) | kg | lb |
| ZR 75 VSD+ – 10.4 | Minimum | 6 | 58 | 79 – 243 | 4.7 -14.6 | 167 – 514 | 75 / 100 | 66 | 3360 | 7400 |
| | Effective | 7 | 101 | 79 – 230 | 4.7 – 13.8 | 167 – 487 | | | | |
| | | 9 | 130 | 79 – 204 | 4.7 – 12.2 | 167 – 432 | | | | |
| | | 10.4 | 150 | 78 – 185 | 4.7 – 11.1 | 164 – 392 | | | | |
| ZR 90 VSD+ – 10.4 | Minimum | 6 | 58 | 79 – 299 | 4.7 -17.9 | 167 – 633 | 90 / 120 | | | |
| | Effective | 7 | 101 | 79 – 284 | 4.7 – 17 | 167 – 602 | | | | |
| | | 9 | 130 | 79 – 254 | 4.7 – 15.2 | 167 – 538 | | | | |
| | Maximum | 10.4 | 150 | 78 – 232 | 4.7 – 13.9 | 164 – 492 | | | | |
| ZR 110 VSD+ – 10.4 | Minimum | 6 | 58 | 79 – 346 | 4.7 -20.7 | 167 – 732 | 110 / 150 | 68 | | |
| | Effective | 7 | 101 | 79 – 330 | 4.7 – 19.8 | 167 – 700 | | | | |
| | | 9 | 130 | 79 – 299 | 4.7 – 17.9 | 167 – 634 | | | | |
| | Maximum | 10.4 | 150 | 78 – 276 | 4.7 – 16.6 | 164 – 586 | | | | |
| ZR 132 VSD+ – 10.4 | Minimum | 6 | 58 | 79 – 400 | 4.7 -24 | 167 – 847 | 132 / 175 | 69 | | |
| | Effective | 7 | 101 | 79 – 384 | 4.7 – 23 | 167 – 814 | | | | |
| | | 9 | 130 | 79 – 352 | 4.7 – 21.1 | 167 – 746 | | | | |
| | Maximum | 10.4 | 150 | 78 – 329 | 4.7 – 19.8 | 164 – 698 | | | | |
| ZR 145 VSD+ – 10.4 | Minimum | 6 | 58 | 79 – 431 | 4.7 -25.9 | 167 – 914 | 145 / 200 | 70 | | |
| | Effective | 7 | 101 | 79 – 415 | 4.7 – 24.9 | 167 – 880 | | | | |
| | | 9 | 130 | 79 – 383 | 4.7 – 23 | 167 – 812 | | | | |
| | Maximum | 10.4 | 150 | 78 – 361 | 4.7 – 21.6 | 164 – 764 | | | | |
| ZR 160 VSD+ – 10.4 | Minimum | 6 | 58 | 79 – 448 | 4.7 -26.9 | 167 – 950 | 160 / 215 | | | |
| | Effective | 7 | 101 | | 4.7 – 26.9 | | | | | |
| | | 9 | 130 | 79 – 415 | 4.7 – 24.9 | 167 – 879 | | | | |
| | Maximum | 10.4 | 150 | 78 – 392 | 4.7 – 23.5 | 164 – 831 | | | | |

### ZT 75-160 VSD+ iMD

| TYPE | Working pressure (1) | | | Free Air Delivery FAD (2) | | | Installed motor power | Noise level (3) | PACK | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | bar(e) | psig | l/s | $m^3$/min | cfm | kW / HP | dB(A) | kg | lb |
| ZT 75 VSD+ – 10.4 | Minimum | 6 | 58 | 79 – 241 | 4.8 – 14.4 | 168 – 510 | 75 / 100 | 72 | =3135+655 | 8355 |
| | Effective | 7 | 101 | 79 – 227 | 4.7 – 13.6 | 167 – 482 | | | | |
| | | 9 | 130 | 78 – 200 | 4.7 – 12 | 164 – 424 | | | | |
| | | 10.4 | 150 | 76 – 180 | 4.6 – 10.8 | 161 – 382 | | | | |
| ZT 90 VSD+ – 10.4 | Minimum | 6 | 58 | 79 – 292 | 4.8 – 17.5 | 168 – 618 | 90 / 120 | 74 | | 8356 |
| | Effective | 7 | 101 | 79 – 277 | 4.7 – 16.6 | 167 – 587 | | | | |
| | | 9 | 130 | 78 – 246 | 4.7 – 14.8 | 164 – 521 | | | | |
| | Maximum | 10.4 | 150 | 76 – 223 | 4.6 – 13.4 | 161 – 473 | | | | |
| ZT 110 VSD+ – 10.4 | Minimum | 6 | 58 | 89 – 339 | 5.3 – 20.3 | 188 – 718 | 110 / 150 | 77 | | 8357 |
| | Effective | 7 | 101 | 88 – 323 | 5.3 – 19.4 | 187 – 685 | | | | |
| | | 9 | 130 | 87 – 292 | 5.2 – 17.5 | 184 – 618 | | | | |
| | Maximum | 10.4 | 150 | 85 – 269 | 5.1 – 16.2 | 181 – 570 | | | | |

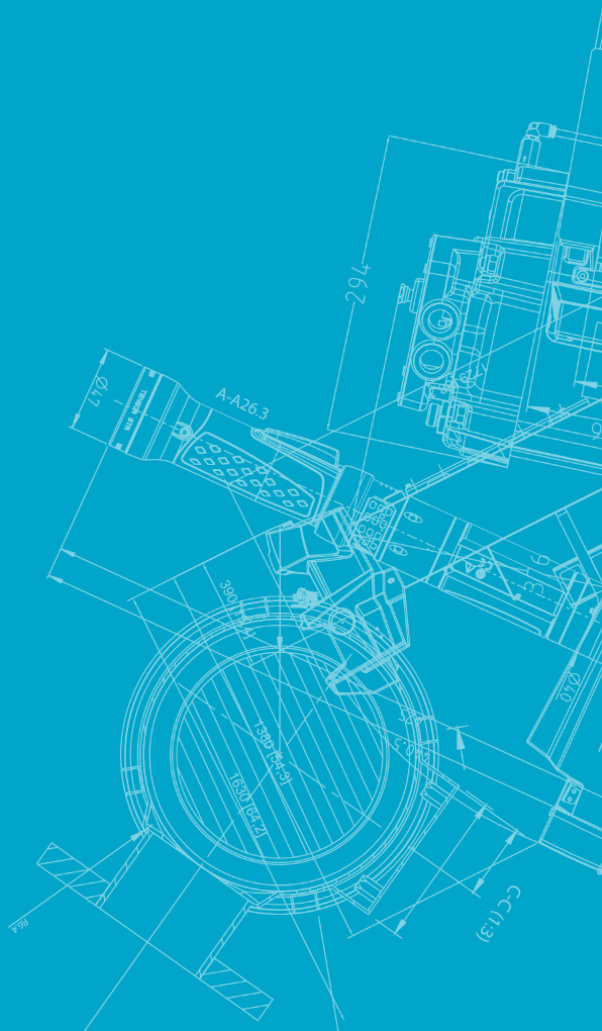
| TYPE | Working pressure (1) | | | Free Air Delivery FAD (2) | | | Installed motor power | Noise level (3) | PACK | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | bar(e) | psig | l/s | $m^3$/min | cfm | kW / HP | dB(A) | kg | lb |
| ZT 132 VSD+ – 10.4 | Minimum | 6 | 58 | 107 – 393 | 6.4 – 23.6 | 228 – 833 | 132 / 175 | | | 8358 |
| | Effective | 7 | 101 | 107 – 377 | 6.4 – 22.6 | 227 – 800 | | | | |
| | | 9 | 130 | 106 – 345 | 6.3 – 20.7 | 224 – 731 | | | | |
| | Maximum | 10.4 | 150 | 104 – 322 | 6.3 – 19.3 | 221 – 682 | | | | |
| ZT 145 VSD+ – 10.4 | Minimum | 6 | 58 | 118 – 425 | 7.1 – 25.5 | 251 – 900 | 145 / 200 | | | 8359 |
| | Effective | 7 | 101 | 118 – 409 | 7.1 – 24.5 | 250 – 867 | | | | |
| | | 9 | 130 | 117 – 377 | 7 – 22.6 | 247 – 798 | | | | |
| | Maximum | 10.4 | 150 | 115 – 353 | 6.9 – 21.2 | 244 – 749 | | | | |
| ZT 160 VSD+ – 10.4 | Minimum | 6 | 58 | 125 – 434 | 7.5 – 26 | 265 – 920 | 160 / 215 | | | 8360 |
| | Effective | 7 | 101 | | | 264 – 920 | | | | |
| | | 9 | 130 | 123 – 407 | 7.4 – 24.4 | 261 – 862 | | | | |
| | Maximum | 10.4 | 150 | 122 – 387 | 7.3 – 23.2 | 258 – 820 | | | | |

# Tech specs iMDG

**ZR 75-160 VSD+ iMDG**

| TYPE | Working pressure (1) | | | Free Air Delivery FAD (2) | | | Installed motor power | Noise level (3) | PACK | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | bar(e) | psig | l/s | $m^3$/min | cfm | kW / HP | dB(A) | kg | lb |
| ZR 75 VSD+ – 10.4 | Minimum | 6 | 58 | 79 – 243 | 4.7 – 14.6 | 167 – 514 | 75 / 100 | 66 | =2500+1220 | 8200 |
| | Effective | 7 | 101 | 79 – 230 | 4.7 – 13.8 | 167 – 487 | | | | |
| | | 9 | 130 | 79 – 204 | 4.7 – 12.2 | 167 – 432 | | | | |
| | | 10.4 | 150 | 78 – 185 | 4.7 – 11.1 | 164 – 392 | | | | |
| ZR 90 VSD+ – 10.4 | Minimum | 6 | 58 | 79 – 299 | 4.7 – 17.9 | 167 – 633 | 90 / 120 | | 3720 | |
| | Effective | 7 | 101 | 79 – 284 | 4.7 – 17 | 167 – 602 | | | | |
| | | 9 | 130 | 79 – 254 | 4.7 – 15.2 | 167 – 538 | | | | |
| | Maximum | 10.4 | 150 | 78 – 232 | 4.7 – 13.9 | 164 – 492 | | | | |
| ZR 110 VSD+ – 10.4 | Minimum | 6 | 58 | 79 – 346 | 4.7 – 20.7 | 167 – 732 | 110 / 150 | 68 | | |
| | Effective | 7 | 101 | 79 – 330 | 4.7 – 19.8 | 167 – 700 | | | | |
| | | 9 | 130 | 79 – 299 | 4.7 – 17.9 | 167 – 634 | | | | |
| | Maximum | 10.4 | 150 | 78 – 276 | 4.7 – 16.6 | 164 – 586 | | | | |
| ZR 132 VSD+ – 10.4 | Minimum | 6 | 58 | 79 – 400 | 4.7 – 24 | 167 – 847 | 132 / 175 | 69 | | |
| | Effective | 7 | 101 | 79 – 384 | 4.7 – 23 | 167 – 814 | | | | |
| | | 9 | 130 | 79 – 352 | 4.7 – 21.1 | 167 – 746 | | | | |
| | Maximum | 10.4 | 150 | 78 – 329 | 4.7 – 19.8 | 164 – 698 | | | | |
| ZR 145 VSD+ – 10.4 | Minimum | 6 | 58 | 79 – 431 | 4.7 – 25.9 | 167 – 914 | 145 / 200 | 70 | | |
| | Effective | 7 | 101 | 79 – 415 | 4.7 – 24.9 | 167 – 880 | | | | |
| | | 9 | 130 | 79 – 383 | 4.7 – 23 | 167 – 812 | | | | |
| | Maximum | 10.4 | 150 | 78 – 361 | 4.7 – 21.6 | 164 – 764 | | | | |
| ZR 160 VSD+ – 10.4 | Minimum | 6 | 58 | 79 – 448 | 4.7 – 26.9 | 167 – 950 | 160 / 215 | | | |
| | Effective | 7 | 101 | | | | | | | |
| | | 9 | 130 | 79 – 415 | 4.7 – 24.9 | 167 – 879 | | | | |
| | Maximum | 10.4 | 150 | 78 – 392 | 4.7 – 23.5 | 164 – 831 | | | | |

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