

GA 7-15 VSD+ Full Feature

ATLAS COPCO OIL INJECTED SCREW COMPRESSOR

General Description

The revolutionary new GA 7-15 VSD+ is packed with innovative features that increase its efficiency, cut its energy consumption, lower its noise levels, and reduce its operating costs. On top of that, it meets or even exceeds all currently applicable efficiency standards. With its innovative vertical design, Atlas Copco's GA 7-15 VSD+ brings a game-changing revolution in the compressor industry. It offers Variable Speed Drive+ as standard, a compact motor and footprint thanks to its in-house design and iPM (interior Permanent Magnet) technology. The GA 7-15 VSD+ **reduces energy consumption by 50%** on average, with uptimes assured even in the harshest operational conditions. The GA 7-15 VSD+ is the air compressor of the future, designed in-house by Atlas Copco. It will set a new standard for years to come, positioning Atlas Copco as a leader in the compressed air industry. As standard these units are designed to operate in 46°C/115°F ambient conditions and are available as Full Feature that includes an integrated dryer.



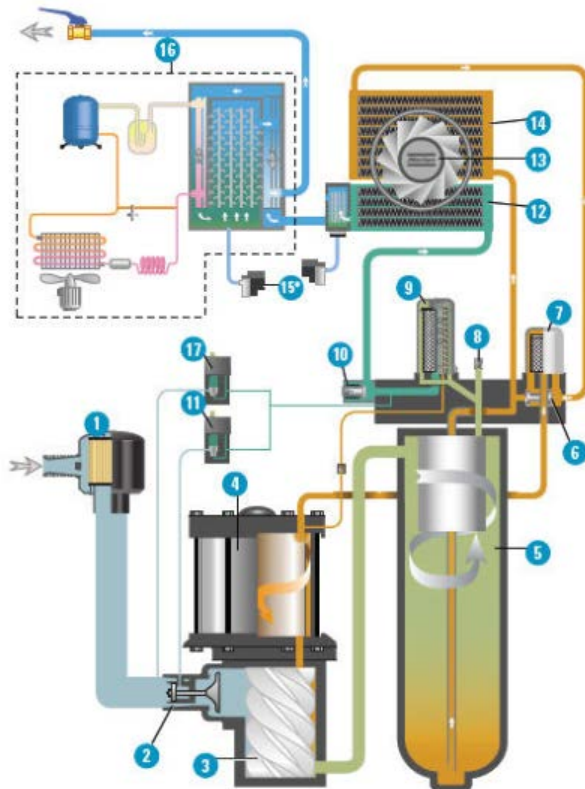
The GA 7-15 VSD+ air compressors are available in 7kW, 11kW and 15kW variants with flows ranging from 7.0 to 37.5 l/s (11.2 to 42.3 cfm).

These **Full Feature** compressors are constructed with the following major components:

- State of the art compression element
- The patented, oil cooled, IP66 (NEMA4X) motor exceeds all IEEE and NEMA Premium efficiency standards
- Elektronikon® graphic controller
- High efficiency aftercooler
- Innovative cooling fan
- Moisture separator
- Inlet air filter
- Integrated refrigerated air dryer using environmentally friendly R134a refrigerant.

Operating Principle

Air is drawn in through the air filter and the sentinel valve into the compression element. This compressed air is forced through the air/oil separator, past the minimum pressure valve and into the after-cooler through the water separator to the discharge. In the case of a Full Feature unit the air will then circulate through the refrigerated dryer and then to the discharge.



1. Inlet Filter
2. Sentinel Valve
3. Screw element
4. iPM
5. Air/oil separator
6. Thermostatic bypass valve
7. Oil filter
8. Safety valve
9. Oil separator
10. Minimum pressure valve
11. Solenoid valve
12. After cooler
13. Fan
14. Oil cooler
15. Electronic drain
16. Dryer
17. Condensate Prevention Cycle

The Interior Permanent Magnet Motor

This motor, with its extremely high efficiency exceeds the IE4 efficiency threshold. It is designed in-house in Belgium. It has a design making it very compact with an oil-cooling circuit making the need of cooling air flow obsolete. The oil will also lubricate the bearings, so, no (re)grease(ing) is needed. This motor is optimised for higher speeds, and has an IP rating of 66 (NEMA4X).



Direct Drive

The motor drives the male rotor of the element directly making gears or belts and shaft seal redundant. This allows a pressure tight drive train through which the oil flows from the motor to the element. Its vertical setup reduces the footprint by 60%, making it a very compact machine.



Oil Separator and Oil Filter

The high efficiency 2-step air-oil-separator system for reduced oil consumption ensures low maintenance costs and a good oil separation result in between 2 service intervals. The oil filter cleans the oil continuously from particles bigger than 25 micron with 99% efficiency in order to protect the lubrication quality and health of the rotating components.



Sentinel Valve

The new GA VSD+ houses a completely new system. Simple, yet brilliant. If air is taken in, the valve mechanically opens. If no air is needed, a solenoid detects the stop and sends a pulse of compressed air to the valve to close it again. No compressed air can escape through the air intake filter and **the complete system remains under pressure**. This means there are **no blow off losses**. No air escapes. No energy goes to waste. When the compressors starts again, the drive train is completely pressurized. The compressor is up and running in no time. Again, this saves energy.



ELEKTRONIKON®

Elektronikon® MK5 Graphic regulator and control panel



Elektronikon® Graphic with compressor visualization:

The next-generation Elektronikon® operating system offers a great variety of control and monitoring features that allow you to increase your compressor's efficiency and reliability thanks to the many embedded advanced control algorithms.

Graphical 3.5 inch high definition colour display with clear pictograms and self-explaining navigation. Standard Internet based compressor visualization using Ethernet

Elektronikon® graphic regulator module

The regulating system includes the Elektronikon® module to regulate, control and monitor compressor operation. All Elektronikon® graphic control modules display and monitor the following:

1. Compressor Status Indication
 - Voltage on
 - Automatic operation
 - Service timer
 - Compressor speed
2. Temperature, numerical readouts
 - Element outlet
 - Ambient air temperature on FF units
3. Pressure, numerical readouts
 - Delivery air
4. Compressor Control
 - Start / Stop
 - Reset / Test
5. Hour meters
 - Total running hours
 - Total loading hours (in different speed zones)
6. Timers
 - Programming compressor time-based start/stop commands
7. Service requirement indications
 - Air filter
8. Compressor safety - warning indications
 - High element outlet temperature.
 - Electronic drain operation
 - Sensor error
 - High dew point
 - Cooling water inlet temp (for water cooled versions)
 - Cooling water outlet temp (for water cooled versions)
 - Pressure drop over PD/DD filters (optionally)

9. Compressor safety - shutdown indications
 - High element outlet temperature.
 - Drive motor/fan motor overload
 - Emergency stop
10. Digital output relays for remote monitoring (voltage free)
 - Automatic operation / Manual operation
 - General warning
 - General shutdown

Features & Benefits

Energy Savings

- State of the Art compression element
 - Low energy consumption and high output of compressed air
- Variable Speed Drive Technology and iPM Motor
 - The use of this technology allows these compressors to match the exact air demands of your compressed air system. This eliminates wasted energy and saves you money.
- Integrated Dryer with Saver cycle technology
 - Reduces the energy consumption of the integrated air treatment in light load conditions. Water separation is improved. Pressure Dew Point (PDP) becomes more stable
- Fully Integrated & Compact design
 - Controller to ensure optimum efficiency and reliability. Ensures compliance with your air requirements and makes the best use of your valuable floor space.

Quite operation

- Sound insulated canopy
 - No separate compressor room required. Allows for installation in most working environments.

Highest reliability

- Hot-Cold Canopy Design
 - Segregating the heat producing components from the rest of the system provides an enclosed unit that is less susceptible to failure.
- IP66 (NEMA4X) Motor
 - The oil cooled motor virtually eliminates the chance for any contamination of the motor