

## GA 30+, GA 37, GA 45 Full Feature

### ATLAS COPCO OIL INJECTED SCREW COMPRESSOR

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#### General Description

The GA 30<sup>+</sup>-45 is a state-of-the-art air- or water-cooled, silenced, rotary compressor with extended monitoring capabilities. They offer a solid free air delivery in the industry, as well as a competitive specific energy requirement. The compressor package includes a direct driven, superior rotary screw compression element, driven by a high efficient, totally enclosed fan cooled motor, an integrated lubrication and cooling system and integrated oil/water separator built into a sound-insulated bodywork where noise levels are reduced. The silencing enclosure allows the possibility to have a workplace compressor next to the point of use, minimizing the installation costs and maximizing energy efficiency.



These compressors are equipped with the Atlas Copco Elektronikon® Graphic controller, to control and monitor the compressor in the most efficient and reliable way.

The GA 30<sup>+</sup>-45 Full Feature are additionally provided with an air dryer which removes moisture from the compressed air by cooling the air to near freezing point and automatically draining the condensate.



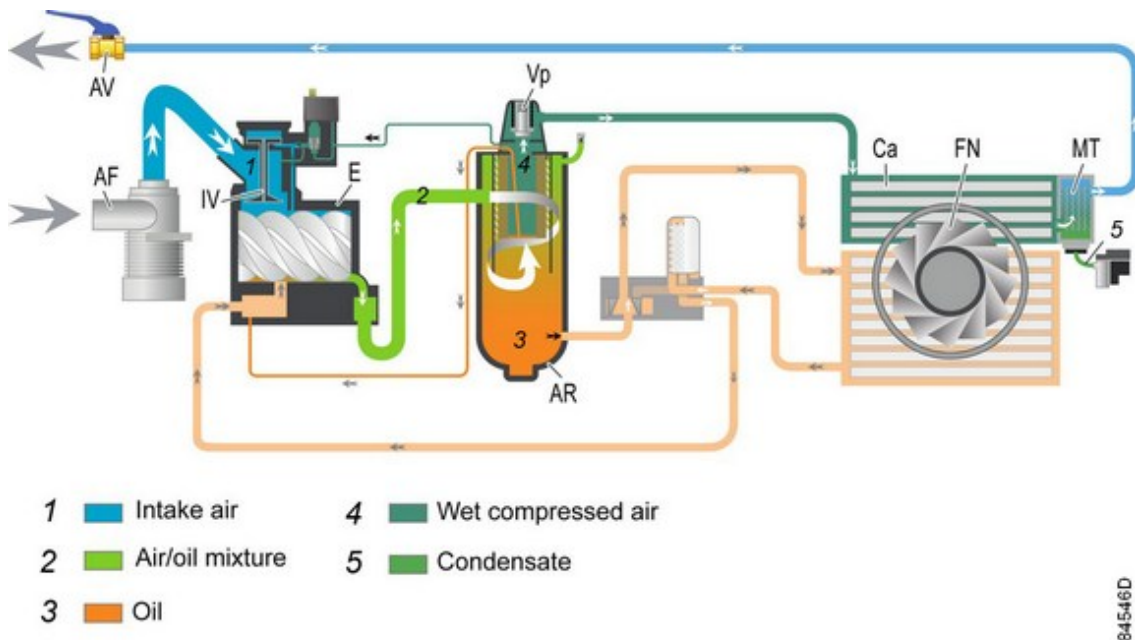
## Working principle

### The air system

Air drawn through inlet filter (AF) and open inlet valve (IV) of the unloader is compressed in compressor element (E). A mixture of compressed air and oil flows into the air receiver/oil separator tank (AR). The air is discharged through outlet valve (AV) via minimum pressure valve (Vp) and air cooler (Ca).

The air cooler is provided with a moisture trap (MT).

Under all circumstances, the minimum pressure valve (Vp) keeps the pressure in the separator tank (AR) above the minimum value that is required for lubrication of the compressor element. An integrated check valve prevents the compressed air downstream the minimum pressure valve from being vented to atmosphere during unloaded operation. When the compressor is stopped, inlet valve (IV) closes, preventing compressed air (and oil) to be vented into the air filter.

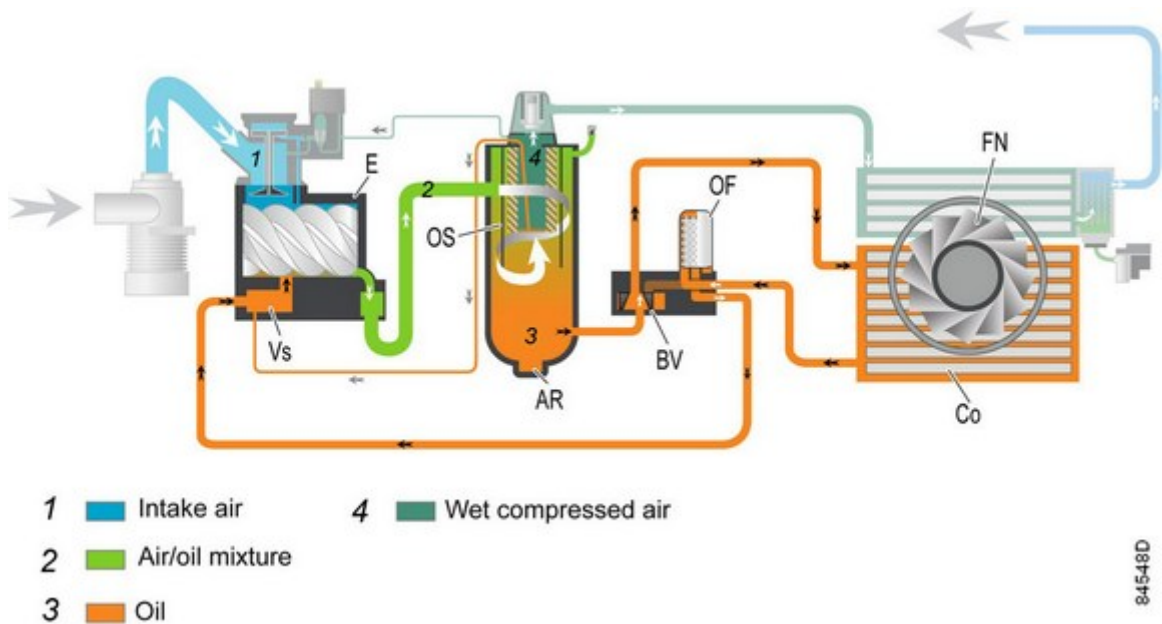


### The oil system

Air pressure in the separator tank forces the oil via oil filter (OF) to compressor element (E), where it acts as sealant, coolant, lubricant and corrosion inhibitive (during stand still periods). In air receiver/oil separator tank (AR), most of the oil is separated from the air/oil mixture by gravity and inertia. The remaining oil is separated by oil separator (OS). The oil collects in the lower part of air receiver/oil separator (AR).

The oil circuit is provided with a thermostatic bypass valve (BV). When the oil temperature is below its set point, the oil cooler is bypassed. Bypass valve (BV) starts opening the supply to cooler (Co) when the oil temperature has increased to the set point temperature. At approx. 15 °C (27 °F) above the set point temperature, all the oil flows through the oil cooler.

A tropical thermostatic valve (available as an option) offers a higher opening temperature, it helps avoiding condensate accumulation in the oil. This option is advised when the compressor operates in high humidity conditions.



### Control system

To control these compressors, they are as standard equipped with a control cubicle containing:

- Fan motor circuit breaker
- Motor Y/D starter with overload relay
- Transformers
- Plexiglas's screen protection (in case copper bars are exposed)
- Start-stop button and isolator switch
- Elektronikon® Graphic control, regulation, safety and indication panel
- All wiring
- Phase sequence relay
- Smartbox

### Scope of supply

#### Designed for extreme running conditions

The GA has been designed to operate continuously in the extreme running conditions. All rotating components are totally enclosed and protected against contamination to ensure long and reliable operation. The compressor cooling system is sized to run perfectly in ambient temperatures up to 46°C/115°F and high ambient versions up to 55°C/131°F.

#### Superior efficiency ensuring lowest operating costs

Designed to meet the highest levels of reliability, energy efficiency and air quality, the compressor package includes following main features:

### **Heavy-duty oil filtration system**

Assuring continuous uptime, the compressor is delivered with a 12-micron oil filtration system for extremely clean oil. This ensures maximum reliability, long service intervals and lifetime. Long lifetime of internal components. Long service intervals and easily accessible. Protecting the compressor element, bearings and gears in the harshest operating conditions.



### **State-of-the-art rotary screw element**

Patented, in-house designed oil injected rotary screw elements with the latest Atlas Copco asymmetric rotor profile designed for a solid free air delivery at a competitive power consumption. Extended lifetime. Precise oil injection for the highest performance at the lowest element temperatures and minimal losses. Designed for low wear and tear, thanks to the selection of high quality materials



### **Most efficient transmission and drive system**

All compressors are equipped with a Y/D starter, to lower transmission losses and smooth starting.

IE3 Efficiency class (50Hz)

NEMA PREMIUM Efficiency (60Hz).

Maintenance free, extreme duty gearbox drive resulting in lower drive end bearing temperature and longer bearing lifetime. Direct gear-driven high performing element eliminating coupling losses and maintenance. TEFC, IP55 Siemens motor enclosure. Class F insulation, B temperature rise



### **Heavy-duty air inlet filter**

To protect the compressor components from wear, even in the harshest environments, a heavy-duty air inlet filter is integrated in the package, ensuring. Long lifetime of internal components. Two steps of dust removal. Premium filtration of particles  $> 3\mu\text{m}$  with an efficiency of 99.9%. Long service intervals. Equipped with differential pressure service indicator as standard



## Protecting your production process

The integrated high efficient cooling system with air/oil separator ensures a low residual oil content in the, free of liquid condensate, compressed air. Separate oil- and after cooler, to optimize the cooling for both media, resulting in low air outlet temperatures and less oil carry-over. Electronic no-loss drain on GA 30+ with feedback control, installed as standard to remove condensate (no corrosion due to free condensate) effectively without wasting compressed air



## Minimized installation work

The compressor packages are completely pre-wired and assembled to minimize the installation work onsite. Easy ducting installation due to cool canopy concept (single cooling air outlet location).

Integrated refrigerant dryer (FF compressors), mechanically and electrically connected (no extra power supply required)



## Elektronikon® Graphic with compressor visualization:

The next-generation Elektronikon® operating system offers a wide 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.



Thanks to the built in clock function, also a timer based start/stop function and the dual pressure band functionality will increase the savings generated with the Elektronikon® Graphic controller.

The compressor controller comes with a graphical 3.5-inch high definition color display with clear pictograms and self-explaining navigation and has the possibility to switch between 32 different languages for operators ease of use.



## SMARTBOX for SMARTLINK\*: Data Monitoring Program

Remote monitoring system that helps you optimize your compressed air system and save energy and costs.

Provides a complete insight in your compressed air network.

Anticipates on potential problems by warning you up-front.



## **Features & Benefits**

### **Energy Savings**

Energy efficient and state of the Art compression element

- Low energy required per compressed air flow

Elektronikon® operating system

- Controller to ensure optimum efficiency, saver cycle, pressure regulation

### **Ease of installation**

Fully integrated & compact design that saves on installation cost

- Integrated Dryer and Filters
- Ensures compliance with your air requirements and makes the best use of your valuable floor space.
- Rigid base frame with forklift slots
- Allows for easy installation in most working environments.

### **Highest reliability**

Robust Air Filter

- Offers long lifetime and high reliability for long service intervals and low maintenance needs. Air filter is very easy to replace.

Optimum cooling module for environments up to 46 C/ 115 F

- Ultimate reliability in the most extreme operating conditions, guaranteeing extended lifetime

Efficient (IE3 or NEMA Premium) main drive motor.

- Totally enclosed fan cooled motor insures reliability. Efficiency ratings at or above premium regulations

Maintenance free, extreme duty gearbox drive

- Longer bearing lifetimes at lowest maintenance cost.

### **Quite operation**

Sound insulated canopy

- Low noise level
- No separate compressor room required. Allows for installation in most working environments