

GA30+ , GA37, GA45 FF

ATLAS COPCO OIL INJECTED SCREW COMPRESSOR

General Description

The GA 30+-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.

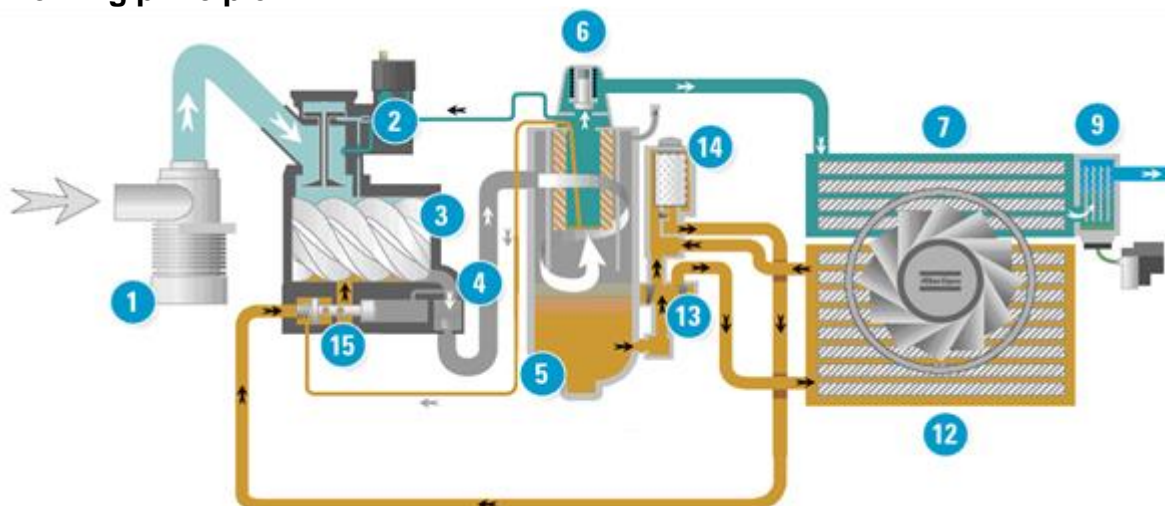


These compressors are equipped with the Atlas Copco Elektronikon® Swipe (GA) Touch (GA+)controller, to control and monitor the compressor in the most efficient and reliable way.

The GA30+-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

The air is drawn into the compressor through the inlet filter (1) and is compressed in the oil injected rotary screw compression element (3) via the air intake (load-unload) valve (2).

Lubrication fluid is injected into the air and the air / oil mixture passes through a non-return valve (4) to the oil separator element (5).

The air then passes through a minimum pressure valve (6) and is cooled by an air- or water cooled after cooler (7).

The condensed moisture is removed by an integrated low pressure drop moisture separator and electronic condensate drain (9) and the compressed air is released to the main piping.

The oil system

Lubrication fluid contained in the oil receiver (5) flows under differential pressure to a thermostatic bypass valve (13), air- or water cooled oil cooler (12), high efficiency oil filter (14) and oil stop valve (15) before being injected into the compression element (3) where it cools, seals and lubricates the compression process.

The high efficiency oil filter (14) provides superior filtration compared to conventional filters resulting in cleaner lubricant. The thermostatic bypass valve (13) ensures that the compressor quickly reaches optimum operating temperature on start-up and maintains temperature during periods of low load by allowing cold lubricant to bypass the oil cooler.

A low noise radial cooling fan (for air cooled compressors) provides cooling air to the oil cooler (12) and after cooler (7), ensuring satisfactory running temperatures as well as ventilating the compressor enclosure.

Control system

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

- Fan motor overload relay(s)
- Motor Y/D starter with overload relay
- Transformers
- Plexiglass screen protection (in case copper bars are exposed)
- Start-stop button and isolator switch
- Elektronikon® Touch (GA+) Swipe (GA) control, regulation, safety and indication panel
- All wiring

Component Descriptions

Designed for extreme running conditions

The GA has been designed to operate continuously in the most 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



Forced cooling of electrical cubicle

All cubicles are equipped with an electrical cubicle fan, including a filter, ensures the optimal working temperature. Extra filtration eliminates environment dust in the electrical cabinet, to increase the components lifetime. Extra cooling of the cubicle keeps the temperature low, having the electrical components working in optimal temperatures



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 an 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)

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 AtlasCopco 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



Inlet Pre-filter

The units are equipped with Special design pre-filter which protects the critical components From the dust for Indian Working Conditions



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

Water Separator no-loss drain 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 inlet/outlet location).

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



Elektronikon® MK5 Touch regulator and control panel (GA+)

- Improved user-friendliness: 4.3-inch high-definition color display with clear pictograms and service indicator.
- Internet-based compressor visualization using a simple Ethernet connection.
- Increased reliability: new, user-friendly, multilingual user interface and durable touch screen.



Key features:

- Automatic restart after voltage failure.
- Built-in SMARTLINK online monitoring.
- Dual pressure set point.
- More flexibility: four different week schedules that can be programmed for a period of 10 consecutive weeks.
- On-screen Delayed Second Stop function and VSD savings indication.
- Graphical service plan indication.
- Remote control and connectivity functions.
- Software upgrade available to control up to 6 compressors by installing the optional integrated compressor controller.

Elektronikon® Swipe for GA

The Atlas Copco Elektronikon® compressor control and monitoring system uses advanced algorithms for maximum reliability.

Improved ease of use: intuitive navigation with clear pictograms and extra 4th LED indicator for service.

- Visualization through web browser using a simple Ethernet connection.
- Easy to upgrade.
- Automatic restart after voltage failure.
- Delayed Second Stop function.
- Dual pressure set point.
- Built-in SMARTLINK online monitoring.
- Option to upgrade to the advanced Elektronikon® Touch controller.



SMARTLINK CONNECTIVITY BUILT-IN

SMARTLINK

SMARTLINK brings real-time monitoring of your compressor's operational parameters to your computer or mobile device:

- Performance data and insights identify opportunities for optimization.
- Service timeline.
- Maintenance and service alerts.
- Online resource center with manuals, documentation and technical information.



Standard scope of supply

- Structural base frame with integrated forklift slots
- Sound enclosure for indoor use, even at point of use
- Heavy duty air inlet filter, with differential pressure indicator
- Air inlet pre-filter
- Air intake valve for load/unload control
- High efficient **IE3**, TEFC (IP55) main drive motor
- A maintenance free, eXtreme duty gearbox drive
- State-of-the-art, single stage oil injected rotary screw compressor element
- Integrated oil circuit with heavy duty oil filters
- Integrated Air Dryer
- Elektronikon® control and monitoring system with built-in **SmartLink**
- All alarm and safety devices connected to the controller
- All piping connections located at convenient locations
- Pre-wired control panel with integrated Y/D starter
- Smartbox hardware with Antenna
- After cooler with integrated water separator for 100% condensate removal
- Oil and after-cooler, with radial fan rotating at low speed
- Air/oil separator with 3 step separation process for low residual oil content (< 2 ppm) in the compressed air
- Integrated safety valve on air/oil separator
- Roto-Xtend Duty Synthetic oil
- Remote monitoring and connectivity

Features & Benefits

Optimum cooling module for environments up to 46°C

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

High efficient (IE3) main drive motor (TEFC) driving the most efficient compressor element

Excellent efficiency for the lowest energy consumption. Resistant to the harshest atmospheric contaminants

A maintenance free, eXtreme duty gearbox drive

Low drive maintenance cost
Lower drive end bearing temperatures resulting in longer bearing lifetimes

Meticulous selection of parts,
no need for special tools,
optimal lubricating fluid

Lowest maintenance costs,
easy serviceability
long service intervals

Packaged, silencing enclosure,
with all inter-connecting piping
and wiring

Easy and quick installation, commissioning and start
up,
Minimal installation costs.
Low noise level

Rigid base frame with
integrated forklift slots

Saving transports costs;
facilitating movement by the use of a forklift truck.

Intelligent control system
communicating in your personal language

The user-friendly, intuitive navigation system will
contribute to a low training costs
of your operating people
Tighter pressure control minimises energy consumption

Integrated Dryer and Filters

Ensures compliance with your air requirements and
makes the best use of your valuable floor space.

Sound Insulated Canopy

Low noise levels
Allows for installation in most working environments