

# Screw Compressors

**ESD 315 - 500, ESG 315 - 450**

**315 - 500kW - Fixed Speed**



**Rely on GD to provide the perfect fit**

**GD**  
GARDNER DENVER™

# Built for continuous use in demanding applications

The ESD/ESG series compressors are designed for continuous operation and applications that require absolute performance and reliability.

Continuous 24-hour use and absolute uptime are critical factors in heavy industry applications.

- In Finland alone, Gardner Denver supplies the compressed air for paper mills that produce millions of tons of paper and board annually.
- Following the example set by the Finnish paper industry, many paper mills and process plants in Europe and in other areas use the Gardner Denver ESD series compressors
- Many European ski resorts have chosen Gardner Denver's proven reliability in harsh conditions
- The ESD compressors are a key part of processes worldwide in automotive and safety glass manufacturing, bottle manufacturing, steelmills etc.
- Oil and gas industries in the Middle East relies on the dependable Gardner Denver ESD compressors.



**"FOR USE IN APPLICATIONS THAT REQUIRE ABSOLUTE  
RELIABILITY AND PERFORMANCE EFFICIENCY."**



# The preferred choice for optimum performance

The Gardner Denver ESD/ESG 315-500 series is specially designed for capacities ranging from 51.3 to 73.6 m<sup>3</sup>/min and pressures from 8 to 13 bar. Low pressure (3 bar) units are available as well. This series is built to meet the demands for continuous 24-hour use and absolute uptime required in critical industrial processes.

## Clear benefits

- Heavy-duty construction
- Clean air and efficient oil separation

## Low energy consumption

Gardner Denver strives to maintain high performance levels while minimising energy usage through:

- Large air ends
- Premium-efficiency electric motors
- Accurate and reliable Digipilot control system
- Versatile heat recovery

## Low noise construction

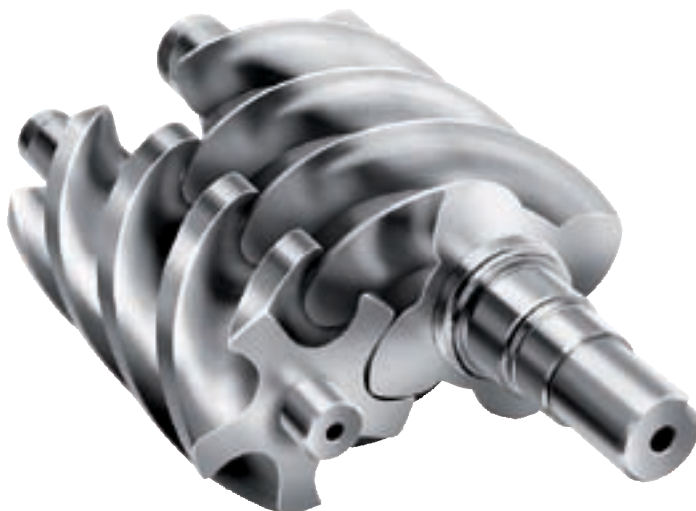
Compressor noise is reduced through low rotation speed, an effectively muffled air cooling fan and sophisticated design.

## Simple maintenance

The ESD/ESG series is easy to service. Large double doors provide easy access to all service points. All maintenance can be completed from the front of the compressor.

## Easy installation

The compact and powerful ESD/ESG series is easy to install on level surfaces and does not require extra foundations or supports.



# Designed for maximum efficiency and reliability

## Heavy-duty construction

Gardner Denver uses advanced technology to carefully construct industrial compressors to withstand the most demanding industrial applications.

- Each screw element is carefully tested during manufacturing
- Each unit is test run simulating real life conditions
- Electric motors and other components meet the highest European and other standards

## Compact design

Gardner Denver's ESD and ESG series compressors are designed to save space. The 315-500 kW compressors are available either with the standard enclosure.

## Efficient oil separation, cleaner air

For years Gardner Denver has set the standards in clean air and oil separation efficiency. Its innovative oil separation system is based on a multi-stage process of thorough cyclone separation followed by oil removal inseparation elements. Superior separation efficiencies with residual oil content as low as 2 mg/m<sup>3</sup>.

## Gardner Denver screw element

The ESD/ESG series features a large screw element that improves efficiency, maximises reliability, saves energy and reduces wear and tear by operating at low running speed.

## Reliable and energy efficient

The ESD series models are direct driven, without gearing, available for applications with specific capacities and pressures, where even minimal energy losses caused by gearbox or belt transmissions want to be avoided. The ESG models feature a gearbox trans-mission to cover wider pressure and capacity ranges.

## High-quality electric motors

Gardner Denver uses the highest quality electric motors available, to ensure high quality and premium efficiency.

## Advanced compressor control – The advantages of DigiPilot control

The DigiPilot compressor control ensures accurate and reliable control. DigiPilots sophisticated micro processor controller facilitates efficient operation and pressure control through its simple user-interface and interactive instrument panel. Warning lights indicate when the air inlet filters, oil separation elements or cooling system require service operations. On the oil filter there is a separate visual indicator. These enable proactive service planning.

- Full load/off load control with automatic start & stop
- Possibility for step less throttle control from 0 to 100%
- Easy to adapt into a multi-compressor system
- Multi-lingual user interface



Gardner Denver's advanced DigiPilot user interface

# Versatile heat recovery – the green advantage

## Versatile heat recovery

Gardner Denver utilises heat recovery systems to maximise efficiency by recovering energy generated during compressed air production.

- As much as 90% of all energy used can be recovered and utilised
- Thermostatic control maintains desired temperature in the compressor
- Heat exchangers are available in different materials for difficult conditions
- Cooling water circuit can be designed specifically to customers needs

Gardner Denver offers a wide range of heat recovery systems to meet your application needs:

## EWNA

Gardner Denver's standard water cooling system

- An after cooler and oil cooler connected in series as a standard
- Water cooling for all models up to 500 kW

## EANA

Standard air-cooled compressor with separate air module

- All ducts required for efficient heat recovery and utilisation are easy to arrange
- Flexible air module placement, 1m from the compressor or further with an additional pump
- Air cooling up to 315 kW

## The PRE system

- Designed for water-cooled compressors
- Cooling water is initially directed through the after-cooler and then it absorbs thermal energy from a large oil/water heat exchanger
- Typical water inlet temperature: 15-35°C
- Typical water outlet temperature: 65-75°C

## The DIR system

- Ideal for closed systems with inlet water temperatures up to +50°C
- Separate water-cooling supply is required for the after-cooler

**“MAXIMISE EFFICIENCY BY RECOVERING ENERGY GENERATED DURING COMPRESSED AIR PRODUCTION.”**

## The +W system

- Heat recovery system for air-cooled compressors
- Transfers the heat produced in compression into water
- Maximum outlet temperature: +75°C (std. 70°C)





# Focused on service and reliability

GD Aftermarket is a dedicated business with the focus of delivering service and parts to maintain Gardner Denver equipment at peak efficiency.

Industry figures estimate that compressed air systems can waste up to 30% of the compressed air through leaks, poor control or lack of maintenance.

In addition, compressor efficiency may degrade with age; therefore, implementing a compressed air maintenance program is essential to ensure a high level of performance over the years.

Through our global network of authorised distributors, Gardner Denver provides world class maintenance and service support with a team of highly trained and skilled compressor service technicians. From emergency call outs to scheduled preventative maintenance and remote monitoring of compressed air operating parameters, we can tailor a compressed air service package to meet the needs of any application – ensuring our customers have the best possible support around the clock, seven days a week.

## Genuine GD Parts – The perfect fit for maximum performance and best efficiency.

The vast experience and knowledge of GD's highly qualified air specialists, coupled with the use of genuine GD parts and quality consumables that are guaranteed to perform, ensures the best possible efficiency from your GD air system.

The long term reliability and efficiency of your compressed air system depends upon using only genuine GD parts and consumables. With GD service partners providing a fast and reliable service, optimum efficiency of your compressed air system is ensured for years to come.

Quality Service Management from Gardner Denver to protect your air station:

- Genuine GD parts and service kits
- Premium GD filters and separators
- High Efficiency GD AEON Lubricants
- Air Audits

GD quality service management maximises compressor efficiencies and equipment longevity.

**GD - The Smart Solution**



**“GD DISTRIBUTORS PROVIDE WORLD CLASS MAINTENANCE AND SERVICE SUPPORT WITH A TEAM OF HIGHLY TRAINED AND SKILLED COMPRESSOR SERVICE TECHNICIANS”**

# Technical Data

## ESD 315-500, ESG 315-450

Gardner Denver model	Maximum pressure	Capacity at nominal pressure*	Nominal power	Net weight	Noise Level**
	bar	m <sup>3</sup> /min	kW	kg	
ESG 315	8	51.3	315	4800	82
	10	44.8			82
ESD 315	13	35.4	315	4400	80
ESG 355	8	56.8	355	5000	84
	10	51.2			84
	13	44.8			84
ESG 400	8	63.3	400	5200	84
	10	56.9			84
	13	47.0			84
ESD 450	7.5	73.6	450	5100	92
ESG 450	10	62.9	450	5200	84
	13	53.0			84
ESD 500	9	73.5	500	5200	92

\* Data measured and stated in accordance with ISO1217, Ed. 4, Annex C at the following conditions and the following working pressures are used:  
 7.5/8 bar models at 7 bar, 9 bar models at 8 bar, 10 bar models at 9 bar and 13 bar models at 12 bar.  
 Air Intake Pressure 1 bar a  
 Air Intake Temperature 20°C  
 Humidity 0% (Dry)

\*\* Measured in free field conditions in accordance with ISO2151, tolerance +/-3dB



\*ESD 315 \*\* Others

### Standard Equipment

- Novox enclosure
- Water cooled
- Air inlet filter
- Fully automatic capacity control: full load, off-load, idle run and start/stop
- DigiPilot microprocessor controller: interactive instrument panel with multi-language information system
- Y/D starter
- Main switch
- TEFC electric motors: IP55, F-class insulation, thermistor protection
- Modulating control with the inlet valve
- Stop/start buttons
- Emergency stop

- Safety devices for:
  - High motor temperature
  - Fan motor overload
  - High compressor temperature
  - High compressor pressure
- Alarms for:
  - Oil filter
  - Oil change
  - Inlet filter
  - Oil separator element
- Week clock
- Remote control
- RS-485 communication line
- Automatic re-start after power failure
- Control for oil separator – pressure difference
- Running condition indicators:
  - Pressure
  - Temperature
  - Hour meter: total running hours, full load

- Safety valve
- Fan motor and cooling fan (air cooled models)
- Sound absorbing enclosure
- After-cooler
- Water trap
- Automatic timer-controlled water drain
- Large and efficient air end

### Optional Extras

- Additional inlet silencers
- Low pressure models (down to 3 bar)
- Vacuum pump models
- Special voltages

### Auxiliary Equipment

- GD Connect 12 multi-compressor – controller for several compressors
- Air dryers
- Compressed air after treatment line



# Whatever Your Request – GD Has The Smart Solution !

The **GD rotary screw compressor** range from 2.2 – 500 kW, are designed to meet the highest requirements which the modern work environment and machine operators place on them. As a result, the GD compressors are extremely energy efficient, quiet and reliable. These compressors continue to further strengthen Gardner Denver's success story – variable and fixed speed compressor technologies available.



The OIL FREE **GD EnviroAire** range from 15 – 110 kW provides high quality and energy efficient compressed air for use in a wide range of applications. The totally oil-free design eliminates the issue of contaminated air, reducing the risk and associated cost of product spoilage and rework, particularly for those customers operating in sterile environments – variable and fixed speed compressor technologies available.



A modern production system and process demand increasing levels of air quality. Our complete **Air Treatment Range** ensures the highest product quality and efficient operation.

#### Our Product range's consisting of:

- Refrigerant Dryers.
- Desiccant Dryers.
- Condensate Management.
- Oil / Water Separation Systems.



Compressors systems are typically comprised of multiple compressors delivering air to a common header. The combined capacity of these machines is generally greater than the maximum site demand. To ensure the system is operated to the highest levels of efficiency, the **GD Connect air management system** is essential.

- The modern **GD Connect 12** air management system can intelligently control up to 12 fixed speed or variable speed compressors.
- The simple **GD Connect 4** air system is the ideal control solution for smaller compressed air stations, and will intelligently control up to 4 fixed speed compressors.



For additional information please contact Gardner Denver or your local representative.



## **Gardner Denver**

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