



ESN 160 - 250
Screw Compressors

160 - 250 kW - 50 Hz





The heavyweight winner

The preferred choice for optimum performance

The ESN 160-250 kW compressor series combines Gardner Denver's design philosophy, advanced DigiPilot controller and innovative package layout with efficient and reliable compressor performance. As all Gardner Denver's compressors, the ESN 160-250 series has rapidly become a popular choice for a wide range of demanding industrial applications. The compressor carries all Gardner Denver features and benefits associated with reliable and easy use and operation, and high efficiency. The ESN 160-250 series is specifically built to meet the demands of continuous 24/7 operating demands and absolute uptime. The ESN 160-250 covers capacities ranging from 29.0 to 43.4 m³/min at normal operating pressures from 7 to 13 bar. We offer low pressure models down to 3 bar.

Benefits that weigh

- Heavy duty construction for highest reliability
- Efficient oil separation for clean air
- All new layout for easy access and fast service
- Compact size to minimize the installation cost

Low energy consumption

Gardner Denver strives to maintain high performance levels in the ESN series while minimizing energy usage through:

- A new generation ENDURO[®] air end with high efficiency and maximum endurance
- Premium efficiency electric motors
- An accurate, sophisticated and versatile DigiPilot control system
- Versatile heat recovery options

Low noise construction

Sophisticated package layout and large and slow turning air end reduce the compressor noise level compared to conventional designs. The unit's standard enclosure provides a max noise level of only 79 dB(A), that in the 160 kW's model and even in the extreme conditions.

Fast maintenance

The ESN 160-250 compressors are the easiest to service in the industry. The unit's revolutionary air end design enables an all-new package layout. This, together with large access doors with no special tool requirement, makes service fast minimizing downtime.

Easy installation

The ESN 160-250 saves you money from the very beginning – starting with transportation to your site. The unit is transportable on normal trucks and also fits inside a container – no need for special freight arrangements or expensive crating. The unit's compact size allows you to move it through standard industrial double doors. Its small footprint minimizes the floor plan usage allowing you to maximize the production space. The ESN 160-250 compressors require no special foundation. Ducting is easy to arrange.

Advanced DigiPilot user interface

- Real time operation monitoring
- Accurate and easy-to-use settings
- Informative service timers
- Flexible/multiple capability for external communication, monitoring and control



Designed for maximum efficiency and reliability

Heavy-duty construction

The ESN 160-250 compressors are designed using advanced technology to meet the highest quality standards that customers are accustomed to expect from Gardner Denver. The ESN 160-250 compressor series is an efficient and versatile solution even for the most demanding industrial applications.

- Each ENDURO® screw compressor element is carefully tested for performance and quality
- Each ESN 160-250 compressor is rigorously tested in simulated real life conditions
- All components meet the applicable international standards and requirements

Efficient oil separation – clean air

For years Gardner Denver has set the standards in oil separation efficiency for clean air. The innovative oil separation system of the ESN 160-250, developed by Gardner Denver, is based on a multi-stage process of highly efficient cyclone separation followed by oil separator elements. The system offers superior separation efficiency with residual oil content as low as 2 mg/m³ in aerosol.

- The multi-element system is less prone to premature failures
- In-to-out-flow results in lower air flow velocity for final separation
- It offers higher surface area for better separation
- Compact size single elements are easy to handle and service

ENDURO® screw compressor element

The ESN 160-250 features a new and revolutionary screw element: an ENDURO® air end that improves efficiency,

maximizes reliability, saves energy and reduces wear and tear by operating at ideal RPMs with minimum losses. The unit's all-new air end layout with suction and discharge ports on the top side makes the compressor package easy to service with open access interior. The new ENDURO® air end is available as a direct or gear driven version, depending on the pressure and power required. In addition to generally improved performance, an extra 0.5-3 % benefit in performance is gained by placing the gear in the discharge end of the air end.

ADVANCED COMPRESSOR CONTROL

The advantages of DigiPilot control

DigiPilot compressor control ensures accurate and reliable control. DigiPilot's sophisticated microprocessor 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
- Remote control option
- Easy to adapt into a multi-compressor system
- Multi-lingual user interface



The advantages of versatile heat recovery

Versatile heat recovery

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

- More than 90% of all energy used can be recovered and utilized
- Thermostatic control maintains desired temperature in the compressor
- Heat exchangers are available in different materials for harsh conditions
- Cooling water circuit can be designed to meet specific customer needs

Gardner Denver offers a wide range of heat recovery systems for your applications:

EANA

Standard air-cooled compressor with a combined air/after/oil cooler

- All ducts required for efficient heat recovery and utilization are easy to arrange
- Cooling air outlet directed upwards

EWNA

Gardner Denver's standard water-cooling system

- After cooler and oil cooler connected in series as standard
- Coolers: indissoluble plate heat exchangers, acid proof steel with copper seams. Good self-cleaning ability.

The PRE system

- Designed for water-cooled compressors
- Cooling water is initially directed through the after-cooler and then 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

The +W system

- Heat recovery system for air-cooled compressors
- Transforms the heat produced during compression into water
- Maximum outlet temperature: +75°C (std. 70°C)
- Also ideal for future installation





Built for 24/7 use in demanding applications

Gardner Denver designed the ESN 160-250 series compressors for continuous operation and for applications that require absolute reliability and performance efficiency.

Gardner Denver's ESN compressors are being used in a wide range of industries:

- In North and Central Europe, and other regions, leading papermakers use Gardner Denver

compressors to supply compressed air for their critical processes, enabling them to produce millions of tons of paper and board annually.

- Many ski resorts from Europe to Australia have chosen our compressors due to their proven reliability in harsh conditions.
- Gardner Denver ESN compressors are also used by the glass and steel industries, assembly plants and for other demanding applications.



Technical data

Gardner Denver model	Maximum pressure		Maximum capacity*		Motor power 50 Hz		Net weight	Output flange
	bar	psig	m ³ /min	cfm	kW	Hp		
ESN 160	7.5	110	29.00	1024	160	215	4100	DN 100
	8.5	125	27.20	961				
	10	145	24.90	879				
	13	190	21.10	745				
ESN 200	7.5	110	36.10	1275	200	270	4300	DN 125
	8.5	125	33.50	1183				
	10	145	30.90	1091				
	13	190	27.23	962				
ESN 250	7.5	110	43.40	1550	250	335	4900	DN 125
	8.5	125	39.50	1395				
	10	145	38.70	1367				
	13	190	34.00	1201				

* Capacity measured in accordance with ISO 1217, Annex C using the following working pressures: 7,5 bar models at 7 bar, 8,5 bar models at 8 bar, 10 bar models at 9 bar and 13 bar models at 12 bar.



Standard Equipment

- Air inlet filters
- Fully automatic capacity control: full load, unload, start/stop
- DigiPilot microprocessor controller: interactive instrument panel with multilanguage information system
- Y/D starter
- Main switch
- TEFC electric motors: IP55, F-class insulation, thermistor protection
- Multi-stage oil separation vessel
- Air-cooled, radiator type, combined air after and oil coolers
- Emergency stop

- Safety devices for:
 - Main motor overload
 - Fan motors overload
 - High compressor temperature
 - High compressor pressure
 - High network air temperature
 - High network pressure
- Alarms for:
 - Oil change
 - Inlet filters
 - Oil separator elements
- Hour meter:
 - Loaded hours
 - Unload hours
- Week clock

- Real time faulty log
- Availability for pressure schedule
- Remote control
- RS-485 communication line
- Readiness for external controllers
- Automatic re-start after power failure
- Running condition indicators:
 - Pressure
 - Temperature
 - Load/unload/standby/off
- Pressure relief valve
- Sound absorbing enclosure
- Water separator
- Automatic water drain
- ENDURO® air end

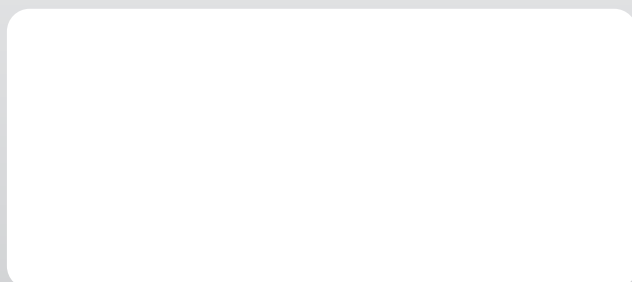
Optional Extras

- Water-cooled units
- Heat recovery systems
- Low pressure models (down to 3 bar)
- Special voltages
- Inlet valve modulating control

Auxiliary Equipment

- MultiPilot multi-compressor controller for several compressors
- Air dryers
- Compressed air after treatment line

For additional information please contact your local representative or



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