SCREW COMPRESSORS
ALMiG: Compressor Systems
Made in Germany

Piston compressors
Screw compressors
Turbo compressors
Scroll compressors
Special installations
Controllers
Compressed air treatment
Services

QUALITY AND INNOVATIONS MADE IN GERMANY.

Decades of experience and excellent performance
ALMiG is one of the leading compressed air technology system providers and has decades of experience delivering premium products in the compressed air sector. Companies all around the world trust in our customer-focused solutions, our quality, innovation and flexibility. Our advanced compressor technologies combine excellence with the quietest possible running performance, optimal energy efficiency and particularly careful conservation of resources.

Ongoing development and comprehensive industry knowledge
Constant research and development form the essential foundation for the efficiency of every system manufactured by ALMiG. Only these constant enhancements and improvements enable us to react quickly and flexibly to individual customer wishes. This attitude is complemented by a comprehensive understanding of the sector; we understand the challenges that our customers are faced with and the requirements that arise as a consequence. ALMiG offers effective solutions for a wide range of applications – from small craft workshops to medium-sized companies to big industry.

Complete service and maximum availability
The highest quality technological solutions deserve an equally high level of service. The ALMiG service provisions offer our customers a complete service programme: from providing comprehensive advice to ensuring availability, improving cost-effectiveness and developing energy-saving potential. As an expert partner, ALMiG offers its customers advice and support on all issues. Our goal is to contribute to your economic success with our service offerings.

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Piston compressors
Screw compressors
Turbo compressors
Scroll compressors
Special installations
Controllers
Compressed air treatment
Services
From 4 kW to 355 kW

**SCREW COMPRESSORS**

- Maximum reliability in continuous operation
- Minimise your operating costs with energy-efficient compressors
- ALMIG probably has the most comprehensive range of screw compressors on the market
- The right drive concept for any application

### Screw Compressors

**Powerful and versatile**

**Compact and cost-effective**

**Robust and reliable**

**High compressor performance and operational reliability**

**Compressor output with endurance**

**High efficiency with SCD speed control**

**Compressor output with endurance and speed control**

**Energy savings with SCD technology**

**Oil-free compressed air of outstanding quality**

- **BELT series** 4 – 37 kW
- **BELT XP series** 4 – 37 kW
- **GEAR XP series** 22 – 280 kW
- **FLEX series** 5.5 – 30 kW
- **VARIABLE series** 16 – 355 kW
- **VARIABLE XP series** 22 – 315 kW
- **V-Drive series** 30 – 75 kW
- **V-Drive T series** 90 – 315 kW
- **LENTO series** 15 – 130 kW
- **G-Drive series** 30 – 75 kW
- **G-Drive T series** 90 – 315 kW
- **LENTO series** 15 – 130 kW
COMBI
The cost-effective 4-in-1 compact system

Our COMBI screw compressors are a highly cost-effective 4-in-1 solution. The compressed air station combines:
• a compressor,
• compressed air receiver (with manual shut-off, and also with an automatic condensate drain as an option),
• refrigeration dryer and
• pre- and after-filters
in one housing as standard. The series thus fulfils the high quality requirements for compressed air for pneumatic applications specified by DIN ISO 8573-1.

The smallest possible space and emitting very low noise levels, the machines of the COMBI series can be installed exactly where the compressed air is needed, saving your company major investments in expensive pressure lines. The belt-driven systems of the COMBI series are used in applications ranging from practical trades to heavy-duty industry.

In small-scale workshops, the compressors guarantee a reliable supply of compressed air while, in industry, the COMBI products serve as an individual decentralized compressed air solution.

Other benefits of these compact systems include their low weight and therefore the ease of transport. All it takes is a lifting truck or a fork lift truck to install the ready-to-connect and ready-to-use compressed air station on site.

The product range
2 different system sizes:
• COMBI 6 – 15: 270 l standard / 500 l optional
• COMBI 16 – 22: 500 l standard

All the compressors in the series are available:
• with/without receiver
• with/without refrigeration dryer
• with/without compressed air filter
• with various controllers to suit your needs

Application:
Trade, small-scale industry
Power output:
5.5 - 22 kW
8 bar: 0.82 - 3.24 m³/min
10 bar: 0.72 - 2.75 m³/min
13 bar: 0.62 - 2.54 m³/min

Operating pressure:
5 - 13 bar

Cooling:
Air-cooled

Drive:
V-belt

Motor:
Energy efficiency class IE 3; IP 55 protection, protection class F

Maintenance-friendly design

Air Control
Smart controller that monitors, visualises and documents

Suitable controllers:
AIR CONTROL MINI
Optional
AIR CONTROL B
Optional
AIR CONTROL P
Optional
AIR CONTROL HE
Optional

Controllers starting on p. 54

Screw compressors
### Compressor + Dryer

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<tr>
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### Compressor + Receiver (500 Litres / 132 Gal)

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### Compressor + Receiver (500 Litres / 132 Gal)

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### 50 Hz

#### Compressor + Dryer

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#### Compressor + Receiver

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### 60 Hz

#### Compressor + Dryer

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### 50 Hz

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<td>1480</td>
<td>780</td>
<td>1375</td>
<td>535</td>
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*V referred to operating under pressure 7 bar at 50 Hz / 100 psig at 60 Hz; heat recovery systems available.
BELT

Powerful for versatile applications

The unique design concept of the BELT series makes it cost-effective in every kW class and therefore highly suitable for versatile applications. With its robust and proven components, the series ensures a high compressor output and reliability around the clock. The tenacious compressors are fitted with a low-maintenance V-belt drive, which transfers the 4 to 37 kW of power with virtually no losses. The BELT series enables very cost-effective and reliable usage in a volume flow range of up to 5.78 m³/min. The fixed speed concept of the series also delivers long service lives and low maintenance costs, making the screw compressors especially well suited for use as base load compressors in continuous operation.

The product range

3 variants with various outputs and volume flows:
- BELT 4 – 37
- BELT 4 – 37 ‘PLUS’**
- BELT 4 – 37 ‘O’**

Applicator
Industry
Power output
4 - 37 kW
Volume flow acc. to ISO 1217
(Annex C-2009):
8 bar: 0.65 - 5.78 m³/min
10 bar: 0.54 - 5.15 m³/min
13 bar: 0.43 - 4.42 m³/min
Operating pressure
5 - 13 bar
Cooling
Air-cooled (standard)
Water-cooled (option as of 11 kW)
Drive
V-belt
Motor
Energy efficiency class IE 3; IP 55; protection, protection class F

Versatile use thanks to numerous possible extension options
Proven V-belt drive
Low maintenance costs due to long service lives

Suitable controllers:
- AIR CONTROL B
- AIR CONTROL P
- AIR CONTROL HE

Optional

Air Control
Smart controller that monitors, visualises and documents

Maintenance-friendly design
Efficient cooling air guide
Horizontal separating tank
With external fine separator cartridges
Base frame
Torsion-resistant
Coolant filter

* ‘PLUS’ variant with attached compressed air refrigeration dryer can also be retrofitted.
** ‘O’ variant with attached compressed air refrigeration dryer and filter system comprising 1x depth filter and 2x active carbon filter for generating technically oil-free compressed air.

*Optional

COVERED BY ALMiG
TERMS & CONDITIONS APPLY
### 50 Hz

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<th>8 bar</th>
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### 60 Hz

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**BELT 4 – 37**

**BELT 4 – 37 PLUS**

**BELT**

**Systems are air-cooled as standard / water-cooled as an option; heat recovery systems available for all models (as of 14 kW); intermediate pressures on request.**
BEIT XP

Robust and reliable

Stable air pressure, consistent volume flow and quiet continuous operation are just a few of the advantages that benefit you with the ALMiG BELT XP series. These sophisticated, compact units, unlike conventional reciprocating compressors, offer reduced noise levels and improved compressed air quality through a much lower residual oil content.

With its robust and proven components, the BELT XP compact system reliably ensures high compressor performance and operational reliability around the clock. The long-lasting compressors are equipped with a low-maintenance V-belt drive, which transmits drive power from 4 to 37 kW virtually loss-free.

The BELT XP series enables particularly economical and reliable operation in the volume flow range up to 6.30 m³/min.

In addition, the concept of the fixed-speed series aims at long service life and low maintenance costs, making the screw compressors particularly suitable for use as base-load compressors in continuous operation.

The intuitive ALMiG controls make the BELT XP series easy to operate. Due to the maintenance-friendly design, the service costs remain completely manageable.

**Application**
- Industry

**Power output**
- 4 - 37 kW

**Volume flow acc. to ISO 1217 (Annex C-2009):**
- 0.48 - 5.84 m³/min

**Operating pressure**
- 10 bar

**Cooling**
- Air-cooled

**Drive**
- V-belt

**Motor**
- Energy efficiency class IE 3, IP 55

**Integral compressor stage**
Combines compressor stage and receiver into one component to significantly reduce internal pressure losses.

**Air Control**
Smart controller that monitors, visualises and documents.

**Side-mounted compressed air cooler**
Enables suction of the coldest possible air.

**Suitable controllers:**
- **AIR CONTROL B**
  - Standard
  - Controllers starting on p. 54
- **AIR CONTROL P**
  - Optional
  - Controllers starting on p. 54

**LET THE EXPERIENCE BEGIN**

Robust and reliable ALMiG XP Series: The standard compressors for demanding applications:
- Xtra Performance
- Efficient cooling
- Proven reliability
- Robust and long-lasting components

**Application**
- Industry

**Power output**
- 4 - 37 kW

**Volume flow acc. to ISO 1217 (Annex C-2009):**
- 0.48 - 5.84 m³/min

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- 10 bar

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**Motor**
- Energy efficiency class IE 3, IP 55

**Suitable controllers:**
- **AIR CONTROL B**
  - Standard
  - Controllers starting on p. 54
- **AIR CONTROL P**
  - Optional
  - Controllers starting on p. 54

**SERVICE FRIENDLY CONSTRUCTION**

High-efficient IE3-Motor

Efficient, noise-reducing cooling air flow

Suitable controllers:
- **AIR CONTROL B**
  - Standard
  - Controllers starting on p. 54
- **AIR CONTROL P**
  - Optional
  - Controllers starting on p. 54

**VERSATILE USE**

Versatile use thanks to numerous possible extension options
- Proven V-belt drive
- Low maintenance costs due to long service intervals
### 50 Hz

<table>
<thead>
<tr>
<th>Model</th>
<th>Volume flow m³/min</th>
<th>Rated motor power kW</th>
<th>Length mm</th>
<th>Width mm</th>
<th>Height mm</th>
<th>Weight kg</th>
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<td>880</td>
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<td>940</td>
<td>1690</td>
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</table>
GEAR XP
High compressor performance and operational reliability

The GEAR XP range of screw compressors has been designed to deliver maximum reliability with low operating and service costs. They are especially suitable for constantly high compressed air requirements. The product range offers delivery quantities of 2.62 - 33.00 m³/min at maximum operating pressures of 5 - 13 bar.

The sophisticated system design and the careful selection of components optimize the flow rate. This improves energy efficiency, increases reliability and extends the life of the motor, electrical components, bearings, hoses and seals by up to 50%.

The new GEAR XP series is characterized by an encapsulated gearbox and the motor speed perfectly matching to the compressor stage.

In conjunction with comparatively low rotational speeds and excellent noise insulation, they achieve a very low noise level. Thus, the system can also be installed where the noise level is critical.

The maintenance and service-friendly system concept of the GEAR XP compressors includes a robust drive motor with strong power reserves, generously dimensioned heat exchangers and an intelligent cooling air duct.

All components have been designed with energy efficiency in mind. Starting with the engine, through the compressor stage to the almost lossless gearbox, each component has been optimized. You benefit as a customer and operator of the system over the entire product life cycle.

Applications:
Industry
Power output: 22 - 200 kW
Volume flow acc. to ISO 12177 (Annex C-2009)
8 bar: 3.70 - 33.00 m³/min
10 bar: 3.20 - 30.20 m³/min
13 bar: 2.62 - 25.05 m³/min
Operating pressure: 5 - 13 bar
Cooling:
Air-cooled (standard)
Water-cooled (option)
Drive:
Gearbox
Motor
Energy efficiency class IE 3; IP 55 protection, protection class F

High performance suction filter
Compressor stage
Latest airend technology with integrated gear unit
High-efficient IE3-Motor
Cooler Unit
Large-area radiators for lowest compressed air outlet temperatures

Air Control
Smart controller that monitors, visualises and documents

Application
Industry
Power output
22 - 200 kW
Volume flow acc. to ISO 12177 (Annex C-2009)
8 bar: 3.70 - 33.00 m³/min
10 bar: 3.20 - 30.20 m³/min
13 bar: 2.62 - 25.05 m³/min
Operating pressure: 5 - 13 bar
Cooling:
Air-cooled (standard)
Water-cooled (option)
Drive:
Gearbox
Motor
Energy efficiency class IE 3; IP 55 protection, protection class F

Suitable controllers:
• AIR CONTROL P
Standard
• AIR CONTROL HE
Optional
Controllers starting on p. 54

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## GEAR XP

<table>
<thead>
<tr>
<th>8 bar</th>
<th>10 bar</th>
<th>13 bar</th>
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<tbody>
<tr>
<td><strong>Model</strong></td>
<td><strong>m3/min</strong></td>
<td><strong>m3/min</strong></td>
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<tr>
<td>90</td>
<td>15.30</td>
<td>13.80</td>
</tr>
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</table>

## 50 Hz

<table>
<thead>
<tr>
<th><strong>Model</strong></th>
<th><strong>Volume flow acc. to ISO 1217 (Annex C-2009)</strong></th>
<th><strong>Rated motor power</strong></th>
<th><strong>Length</strong></th>
<th><strong>Width</strong></th>
<th><strong>Height</strong></th>
<th><strong>Weight</strong></th>
</tr>
</thead>
<tbody>
<tr>
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<td>30.20</td>
<td>25.05</td>
<td>200</td>
<td>3300</td>
<td>1860</td>
</tr>
</tbody>
</table>
G-DRIVE

Compressor output with high endurance

The G-Drive series offers consistently high performance as well as numerous features for particularly reliable, energy-efficient operation and convenient maintenance. There are various useful extensions available for the latest generation of ALMiG screw compressors: an efficient heat recovery system with a constant temperature, an integrated refrigeration dryer which is precisely designed for the delivery volume of the system, as well as the latest controllers to network your entire compressed air station. The system extensions do not affect the footprint of the compressor at all.

Optional integrated refrigeration dryer
In this version, the refrigeration dryer is integrated in the system to save space. The compressor is used to supply the dryer with power, control it and protect it against freezing if operated at “underload”. The parameters of the refrigeration dryer are exactly tailored to the respective kW class and the dryer cannot be ‘bypassed’.

Heat recovery system
All our systems are designed so that an integrated heat recovery system can be fitted into them – either directly at the factory or as a subsequent retrofit. With this system, the energy consumed for the generation of compressed air can be converted almost entirely to usable heat; for example, as hot water for feeding into heating systems or for heating process water or industrial water. The constant temperature of the heat recovery system ensures reliability.

Reduced service costs
The G-Drive screw compressors are very easy to maintain: all components are easily accessible from one side and the large sound-insulating doors are easy to remove. This reduces the maintenance and downtimes to a minimum, and ensures that the service costs are completely manageable.

Application
Industry
Power output
Volume flow acc. to ISO 1217 (Annex C-2009)
Operating pressure
Cooling
Drive
Energy efficiency class IE 3; IP 55 protection, protection class F

Suitable controllers:

- AIR CONTROL B
  - Standard
- AIR CONTROL P
  - Optional
- AIR CONTROL HE
  - Optional

Maintenance-friendly design

Highly efficient motor-compressor unit
Energy efficiency class IE 3

Base frame
Torsion-resistant

Optional heat recovery system

Air Control
Smart controller that monitors, visualises and documents

The latest controllers are used to network the entire compressed air station
Modular system concept developed for maximum energy efficiency
An efficient heat recovery system with a constant temperature
An integrated refrigeration dryer which is precisely designed for the delivery volume of the system

Suitable controllers:

- AIR CONTROL B
  - Standard
- AIR CONTROL P
  - Optional
- AIR CONTROL HE
  - Optional

Controllers starting on p. 54
### 50 Hz

<table>
<thead>
<tr>
<th>G-DRIVE</th>
<th>Volume flow acc. to ISO 1217 (Annex C-2009)</th>
<th>Rated motor power</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Weight</th>
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<tbody>
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<td>Model</td>
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<td>13 bar</td>
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<td>mm</td>
<td>mm</td>
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<td>1900</td>
<td>1100</td>
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### 60 Hz

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<th>Volume flow acc. to ISO 1217 (Annex C-2009)</th>
<th>Rated motor power</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Weight</th>
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<td>150 psig</td>
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</table>
With the two stage G-Drive T series ALMiG sets new standards in energy efficiency. By compressing air in two stages they achieve a specific performance which is at the highest level. Therefore, the G-Drive T compressor series offers a higher volume flow with a lower input power consumption, in comparison to an equivalent single stage compressor. Low rotational speeds and lower internal compression ratios within the compressor stages increase the efficiency, reliability and lifetime of the compressor elements. State of the art efficiency, coupled with a low sound level and low service costs, makes the two-stage technology very interesting for industrial compressed air users.

The G-Drive T offers all these benefits, plus a compact footprint due to its well-thought-out design. With a look to Industry 4.0, the controller of the compressor has all the required functionalities to communicate with common industrial company systems. Or simply use the web server to monitor the compressor from anywhere.

**Advantages:**
- Due to the high efficiency of the compressor maximum energy savings can be achieved and the life cycle costs of the machine can be reduced.
- Up to 15% greater energy savings in comparison to a single stage compressor.
- Durable and reliable.
- Low differential pressures.
- Reduced heat load.
- Easy maintenance and service.

The unique design of the airend integrates the first and second stage into one compressor element. The rotors of both air ends achieve the optimal speed due to the gear drive.

An efficient compression is achieved by using a cooling oil mist for interstage cooling. This controlled amount of oil enables at the same time to avoid condensate in the second stage. A complicated and expensive separate interstage cooling is not necessary and reliability increases.
### G-DRIVE T

**Volume flow acc. to ISO 1217 (Annex C-2009)**

<table>
<thead>
<tr>
<th>Model</th>
<th>8 bar m³/min</th>
<th>10 bar m³/min</th>
<th>13 bar m³/min</th>
<th>Rated motor power kW</th>
<th>Length mm</th>
<th>Width mm</th>
<th>Height mm</th>
<th>Weight kg</th>
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<td>5600</td>
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<td>2250</td>
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</tbody>
</table>

#### Setting standards in enAIRgy efficiency

The two-stage compression is almost isothermal and requires up to 15% less power consumption than single-stage compression.

#### Two-stage compression +

- High efficient IE3 Motor
- Smart controller 4.0
- Variable Speed cooling fan
- Low service and maintenance costs
- Optional heat recovery

---

**G-DRIVE T 52**

<table>
<thead>
<tr>
<th>FAD @8,0bar m³/min</th>
<th>Input Power kW</th>
<th>P_{\text{spec.}} kW/(m³/min)</th>
<th>Air demand/Year* m³</th>
<th>Load h/Year h</th>
<th>Energy costs €/h</th>
<th>Load c/Year €</th>
<th>Load savings/Year €</th>
<th>Load savings/Month €</th>
<th>Load savings/Day €</th>
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<td>240 000</td>
<td>22 940</td>
<td>1 912</td>
<td>64</td>
</tr>
</tbody>
</table>

#### Single-Stage Compressor

**FAD @8,0bar**

- Input Power: 300 kW
- P_{\text{spec.}}: 6.45 kW/(m³/min)
- Air demand/Year*: 22 320 000 m³
- Load h/Year: 8 000 h
- Load c/Year: 240 000 €
- Load savings/Year: 22 940 €
- Load savings/Month: 1 912 €
- Load savings/Day: 64 €

---

**High efficient IE3 Motor**

**Smart controller 4.0**

**Variable Speed cooling fan**

**Low service and maintenance costs**

**Optional heat recovery**

*8000 operating hours per year, starting from the compressor with the lower delivery quantity.
FLEX
Compact, quiet and powerful

The speed-controlled, directly driven compressors of the FLEX series are used whenever compressed air is to be generated by a small, compact and extremely quiet system. With the vertical alignment of the motor compressor unit in the FLEX series, ALMiG has developed one of the most compact screw compressor systems on the market. The sound level of these small screw compressors is only around 60 dB(A). If required, they can be used directly at the workstation.

The FLEX series also provides you with a significant cost reduction: market analyses show that on average compressors only have a utilisation rate of around 50 – 70 %. The maximum delivery volume is, however, only needed during peak times. The integrated ALMiG SCD technology, the benefits of which come to the fore in partial load applications, allows you to achieve an energy saving of up to 35 %. The holistic SCD technology drive concept stands for Speed Controlled and Direct drive.

The speed-controlled version of the direct drive offers additional benefits. For example, a speed-controlled FLEX can instantly make an entire compressed air station more cost-effective in the smart ALMiG “master-slave network”.

Achieve an energy saving of up to 35% through:
- Speed control
- Constant mains pressure, stepless from 5 to 13 bar
- Extremely good system efficiency
- No start-up changeover power peaks
- No expensive idle times

The speed-controlled version of the direct drive offers additional benefits. For example, a speed-controlled FLEX can instantly make an entire compressed air station more cost-effective in the smart ALMiG “master-slave network”.

Achieve an energy saving of up to 35% through:
- Speed control
- Constant mains pressure, stepless from 5 to 13 bar
- Extremely good system efficiency
- No start-up changeover power peaks
- No expensive idle times

Application
Industry
Power output
5.5 – 30 kW
Volume flow acc. to ISO 1217
0.53 – 4.05 m³/min
Operating pressure
5 – 13 bar
Cooling
Air-cooled
Drive
Direct and speed-controlled
Motor
Energy efficiency class IE 3; IP 55 protection, protection class F

Suitable controllers:
AIR CONTROL B
AIR CONTROL P
AIR CONTROL HE

Maintenance-friendly design
Accessible from one side

Air Control
Smart controller that monitors, visualises and documents

SCD Frequency converter
The integrated power pack meets EMC guidelines

Unit Cooler
Efficient cooler for minimum coolant/ compressed air outlet temperatures

Motor-compressor unit
Highly efficient, vertically aligned drive system

ALMiG
SCD Technology

COVERED BY ALMiG TERMS & CONDITIONS APPLY

Screw compressors

FLEX

ALMiG

Screw compressors

Application
Industry
Power output
5.5 – 30 kW
Volume flow acc. to ISO 1217
0.53 – 4.05 m³/min
Operating pressure
5 – 13 bar
Cooling
Air-cooled
Drive
Direct and speed-controlled
Motor
Energy efficiency class IE 3; IP 55 protection, protection class F

Suitable controllers:
AIR CONTROL B
AIR CONTROL P
AIR CONTROL HE

Maintenance-friendly design
Accessible from one side

Air Control
Smart controller that monitors, visualises and documents

SCD Frequency converter
The integrated power pack meets EMC guidelines

Unit Cooler
Efficient cooler for minimum coolant/ compressed air outlet temperatures

Motor-compressor unit
Highly efficient, vertically aligned drive system

ALMiG
SCD Technology

COVERED BY ALMiG TERMS & CONDITIONS APPLY

Screw compressors
### FLEX

<table>
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<th>Operating overpressure</th>
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* V relates to an operating overpressure of 7 bar at 50 Hz / 100 psig at 60 Hz; heat recovery systems available
** as “O” variant with sub-mounted refrigeration dryer and filter system for generating “oil-free” compressed air
The speed-controlled screw compressors of the VARIABLE series are the result of decades of experience in the field of energy-efficient solutions. They are designed for use under the toughest operating conditions and for applications with variable compressed air requirements. The system is therefore the right solution for high operational readiness and efficient compressed air supply.

Market analyses show that on average compressors only have a utilisation rate of around 50 – 70%. The maximum delivery volume is, however, only needed during peak times. The integrated ALMiG SCD technology, the benefits of which come to the fore in partial load applications, allows you to achieve an energy saving of up to 36%. The holistic SCD technology drive concept stands for Speed Controlled and Direct drive.

**Application**

- Industry
- Power output: 16 – 355 kW
- Volume flow acc. to ISO 1217 (Annex C-2009): 1.07 - 55.55 m³/min
- Operating pressure: 5 - 13 bar (stepless)
- Cooling: Air-cooled (standard), Water-cooled (option as of 35 kW, only water-cooled as of 355 kW)
- Drive: Direct and speed-controlled
- Motor: Energy efficiency class IE 3; IP 55 protection, protection class F

**Achieve an energy saving of up to 35% through:**

- Speed control
- Constant mains pressure, stepless from 5 to 13 bar
- Extremely good system efficiency
- No start-up changeover power peaks
- No expensive idle times

**Maintenance-friendly design**

- Efficient ALMiG SCD technology
- Designed for use under the toughest operating conditions
- Unbeatable energy efficiency in combination with the DIRECT series
- Versatile use thanks to numerous possible extension options

**Air Control**

- Smart controller that monitors, visualises and documents

**Base frame**

- Torsion-resistant

**Horizontal separating tank**

- With external fine separator cartridges

**Control cabinet**

- Large with integrated frequency converter

**Suitable controllers**

- **AIR CONTROL B**
  - Standard (16 – 28 kW)
- **AIR CONTROL P**
  - Optional (16 – 28 kW)
  - Standard (35 – 355 kW)
- **AIR CONTROL HE**
  - Optional

Controllers starting on p. 54
### 50 Hz

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### 60 Hz

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* Y relates to an operating overpressure of 7 bar at 50 Hz / 100 psig at 60 Hz; systems are air-cooled as standard / water-cooled as an option as of VARIABLE 35 model (VARIABLE 35 / 51), as of VARIABLE 315 model (VARIABLE 315 / 430) only water-cooled systems available; heat recovery systems available for all models; variants 16 – 28 are also available as “O” or “Plus” versions.
The VARIABLE XP screw compressors are the optimal solution to provide the right amount of compressed air when the demand for compressed air fluctuates. With the integrated frequency converter, the specially designed motor only runs as fast as necessary to generate the required amount of compressed air. Expensive idle times and over-compression are now a thing of the past. Thus, the plant is the right solution for a highly efficient compressed air supply. The product range offers delivery quantities of 0.89 - 35 m³/min at maximum operating pressures of 5 - 13 bar.

In the development of the new VARIABLE XP series, the optimization of the cooling air flow has further improved the reliability and service life of the components. With the extra thick sound insulation, the system can also be installed where the noise level is critical.

**ALMiG SCD Technology**
Market analyses show that on average compressors only have a utilisation rate of around 50 – 70%. The maximum delivery volume is, however, only needed during peak times. The integrated ALMiG SCD technology, the benefits of which come to the fore in partial load applications, allows you to achieve an energy saving of up to 35%. The holistic SCD technology drive concept stands for Speed Controlled and Direct drive.

Achieve an energy saving of up to 35% through:
- Speed control
- Constant mains pressure, stepless from 5 to 13 bar
- Extremely good system efficiency
- No start-up changeover power peaks
- No expensive idle times

**ALMiG XP Series:**
The standard compressors for demanding applications:
- Xtra Performance
- Efficient cooling
- Proven reliability
- Robust and long-lasting components

**Suitable controllers:**
- **AIR CONTROL P**
- **AIR CONTROL HE**

Controllers starting on p. 54
### VARIABLE XP

**50 Hz**

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**100 Hz**

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* V relates to an operating overpressure of 7 bar at 50 Hz / 100 psig at 60 Hz, systems are air-cooled as standard / water-cooled as an option as of VARIABLE XP 30, heat recovery systems available for all models.
V-DRIVE

Compressor output with high endurance

The V-Drive series offers consistently high performance as well as numerous features for particularly reliable, energy-efficient operation and convenient maintenance. There are various useful extensions available for the latest generation of ALMiG screw compressors: an efficient heat recovery system with a constant temperature, an integrated refrigeration dryer which is precisely designed for the delivery volume of the system, as well as the latest controllers to network your entire compressed air station. The system extensions do not affect the footprint of the compressor at all.

Optional integrated refrigeration dryer (up to 37 kW)

In this version, the refrigeration dryer is integrated in the system to save space. The compressor is used to supply the dryer with power, control it and protect it against freezing if operated at “underload”. The parameters of the refrigeration dryer are exactly tailored to the respective kW class and the dryer cannot be “bypassed”.

Energy-saving speed control

All variants are equipped with energy-saving speed control. This is where the highly efficient direct drive comes into play: the high-frequency drive motor operates with outstanding efficiency over the entire speed range.

The operating pressure can be adjusted steplessly from 5 to 13 bar. The high-quality frequency inverter is easy to access in the control cubicle – an optimised cooling air guide provides optimum ventilation. Inverters and cables are electro-magnetically shielded.

Heat recovery system

All our systems are designed so that an integrated heat recovery system can be fitted into them – either directly at the factory or as a subsequent retrofit. With this system, the energy consumed for the generation of compressed air can be converted almost entirely to usable heat, for example, as hot water for feeding into heating systems or for heating process water or industrial water. The constant temperature of the heat recovery system ensures reliability.

Reduced service costs

The V-Drive screw compressors are very easy to maintain: all components are easily accessible from one side and the large sound-insulating doors are easy to remove. This reduces the maintenance and downtimes to a minimum, and ensures that the service costs are completely manageable.
### 50 Hz

<table>
<thead>
<tr>
<th>V-DRIVE</th>
<th>Operating overpressure</th>
<th>Volume flow acc. to ISO 1217 (Annex C-2009)</th>
<th>Rated motor power</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Weight</th>
</tr>
</thead>
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<td>kW</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
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### 60 Hz

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<th>Rated motor power</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
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<td>acfm</td>
<td>max</td>
<td>hp</td>
<td>inch</td>
<td>inch</td>
<td>inch</td>
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<tr>
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<td>75 - 190</td>
<td>86.43</td>
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<td>75</td>
<td>43</td>
<td>68</td>
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<td>45</td>
<td>75 - 190</td>
<td>88.08</td>
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<td>75 - 190</td>
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*V-Drive 30 & 37 in 60 Hz version on request*

*V relates to an operating overpressure of 7 bar at 50 Hz / 100 psig at 60 Hz*
How can the most energy-efficient screw compressor in the world be made even more efficient? By combining highly efficient two-stage compression with speed control. ALMiG combines exactly this in the new V-Drive T!

The unique stage design integrates the first and second stage in one compressor unit. The rotors of each compressor stage achieve optimum speed thanks to the gear drive.

An efficient compression is achieved by using a cooling oil mist for interstage cooling. This controlled amount of oil enables at the same time to avoid condensate in the second stage. A complicated and expensive separate interstage cooling is not necessary and reliability increases.

The speed control and variable motor speed automatically and sensitively adjust the delivery volume to the fluctuating air consumption. This reduces costly and energy-intensive idle times to a minimum. In addition to efficiency, low speeds and a lower internal pressure difference increase the service life and reliability of the compressor unit.

With regard to Industry 4.0, the control of the compressor has all the prerequisites to participate in internal company communication or to be monitored externally via a web server.

**Advantages:**

- The high efficiency of the compressor allows high energy savings to be achieved and the life cycle costs of the plant to be reduced.
- Partly far more than 10% energy savings compared to single-stage compression
- No expensive idle times due to speed control of the compressor
- Consistent and reliable
- Low differential pressures
- Low thermal load
- Easy maintenance and service

**Application**

- Industry
- Power output: 90 kW - 315 kW
- Volume flow acc. to ISO 1217 (Annex C-2009): 9.7 - 62.0 m³/min
- Operating pressure: 5 - 13 bar
- Cooling: Air-cooled
- Drive: Gear with speed control
- Energy efficiency class IE 3, IP 55 protection, protection class F

**Heavy duty suction filter**
- Best possible filtration and easy maintenance

**Oil lubricated two stage compression**
- Best possible efficiency, integrated gear drive and robust durable design

**Energy-efficient IE3 Motor with long bearing life**

**Stable base frame**
- With vibration dampeners

**Frequency converters**
- Energy-saving speed control

**Controllers starting on p. 54**
## V-DRIVE T

### 50 Hz

<table>
<thead>
<tr>
<th>Model</th>
<th>Operating overpressure</th>
<th>Volume flow acc. to ISO 1217 (Annex C-2009)</th>
<th>Rated motor power</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>bar</td>
<td>min - max</td>
<td>at 50 Hz</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
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<tr>
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<td>9.7 - 19.5</td>
<td>90</td>
<td>3881</td>
<td>2250</td>
<td>2438</td>
<td>5650</td>
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<td>24</td>
<td>5 - 12</td>
<td>9.7 - 23.5</td>
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<td>2438</td>
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</table>

* V-referred to operating overpressure 7 bar at 50 Hz

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**Average total cost of a compressed air station using three runtime models as an example**

- **Acquisition cost**: 13,5 %
- **Energy costs**: 87 %
- **Maintenance costs**: 3 %

- **Acquisition cost**: 10 %
- **Energy costs**: 87 %
- **Maintenance costs**: 3 %

- **Acquisition cost**: 7 %
- **Energy costs**: 75 %
- **Maintenance costs**: 2 %

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**Energy costs account for the largest share of a compressor’s life-cycle costs. In order to keep energy costs as low as possible, ALMiG continuously develops its systems with regard to energy efficiency.**

**Thanks to the two-stage compression in combination with the energy-saving speed control, the V-Drive T achieves a specific performance which is at the highest level.**

By using a heat recovery system, you can easily use the waste heat from the compressor for heating purposes and save even more energy costs.

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*Protecting the environment*

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**Save energy**

- **Two-stage compression**
- **Speed control**
- **Optional heat recovery system**

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**Save energy costs**
Our LENTO series generates 100% oil-free compressed air for all applications, where products of the highest quality are produced. Given that only water, the most natural of all raw materials, is used in the compression process, LENTO delivers maximum compressed air quality for highly sensitive areas e.g. the pharmaceutical, foodstuffs, electrical engineering and medical industries.

The speed-controlled direct drive of the LENTO series delivers maximum cost-effectiveness by precisely matching the volume flow to the respective compressed air requirement. The integrated refrigeration dryer ensures a low pressure dew point. Therefore, under certain circumstances, the customer doesn’t need a separate refrigeration dryer. This avoids costs for the fresh water supply and water processing and minimises service and maintenance costs compared with other oil-free compression systems.

Clean and ecological solution:
• Clean, environmentally friendly oil-free compressed air: ISO class 0, certified in accordance with DIN ISO 8573-1:2010
• Dust particles that are drawn in are washed out by the water
• Clean condensate – pure water – can be discharged directly into the sewer system
• Very low temperatures during compression thanks to excellent heat transfer via the water. Reduced amounts of energy are therefore used to generate the compressed air

Applications:
100% oil-free compressed air for industrial use (pharmaceutical, food, chemical, etc.)

Power output
15 - 110 kW

Volume flow acc. to ISO 1217
1.01 - 19.60 m³/min

Operating pressure
5 - 10 bar

Cooling
Water-cooled (standard)
Air-cooled (option)

Only water-cooled available as of LENTO 76

Drive
Direct and speed-controlled

Motor
Energy efficiency class IE 3; IP 55 protection, protection class F

Compressor
Single-stage, water-injected; very low compression temperatures of <60°C, close to isothermal, economical compression

Air Control
Smart controller that monitors, visualises and documents

SCD direct drive
Zero-loss power transfer

SCD motor
Highly efficient drive motor; IP 55 protection class ISO F; compact, powerful, reliable

Integrated refrigeration dryer
Permanent generation and exchange of the required coolant, optimum biological and chemical water quality, for dry compressed air at the compressed air outlet

Stainless steel piping

100% oil-free compressed air generation
Volume flow can be adapted exactly to meet compressed air requirements
No switching cycles or expensive idle times
Energy-saving soft start without current peaks
Operating pressure can be freely selected between \( p_{\text{min}} - p_{\text{max}} = 0.1 \text{ bar}/1.5 \text{ psig} \) increments
The reduction in pressure can save money
### 50 Hz Speed-controlled

<table>
<thead>
<tr>
<th>LENTO</th>
<th>Operating overpressure</th>
<th>Volume flow acc. to ISO 1217 (annex C-2009)</th>
<th>Rated motor power</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>bar</td>
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<td>mm</td>
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<td>850</td>
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<tr>
<td>22</td>
<td>5 - 10</td>
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<td>3.38</td>
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<td>850</td>
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### 60 Hz Speed-controlled

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</table>

* V relates to an operating overpressure of 7 bar at 50 Hz / 100 psig at 60 Hz. LENTO 15 – 55 (15 / 20 – 70) water-cooled as standard, air-cooled as an option; LENTO 56 – 110 (75 / 100 – 150) only available as water-cooled.

LENTO 15 - 95, air-cooled

LENTO 46 - 110

LENTO 46 - 110 in 60 Hz Version on request
CONTROLLERS
Smart monitoring, reliable documentation
NETWORKING WITH AIR CONTROL

In the future it will be even easier to remotely monitor your compressed air generation thanks to visualisation via the ALMiG web server – regardless of where you happen to be at the time. The system ensures high reliability with convenient access to various parameters, prompt messages and comprehensive facts.

Accessible parameters:
- Energy and compressed air balance, also available to download
- Overview of the compressor station with the operating statuses of each individual compressor
- Loaded/idle mode statistics of compressors
- Data on delivery volumes, volume flows and motor starts
- Detailed information about utilisation, network pressure and specific performance data
- Data on energy efficiency and maintenance

The most important benefits:
- Easy to operate via standard internet browser
- Can be accessed via company’s own network or anywhere in the world via the Internet
- Dial-in protected by user ID
- Various parameters are depicted either in tables or graphs
- Continuous monitoring of all parameters of relevance to operation
- Active e-mail notification to up to 5 e-mail addresses in the event of warnings, maintenance work or faults
- Convenient transfer of all relevant data into Office programs such as MS Excel
- The parameters are displayed in a visually appealing way
- CSV files for further processing

Connection of systems & components does not depend on the manufacturer
Using the ALMiG AIR CONTROL family of controllers you can control, manage and monitor your entire compressed air supply system in the best possible way.

The smart, integrated compressor controllers offer you optimum operating convenience and outstanding cost-effectiveness. They deliver maximum reliability in the supply of compressed air and plan maintenance ahead of time.

The very latest microprocessor and communications technology is used, guaranteeing you seamless integration of all compressor models as well as the entire range of accessories. And all that as standard via the RS-485 data bus. The optional connectivity to a web server enables monitoring of your compressor station from anywhere in the world.

Further functionality and benefits:
- Huge potential savings by reducing idling levels and lowering pressure levels
- Transparency when it comes to the compressors and accessories, at all times
- Reductions in maintenance time and downtimes

**AIR CONTROL MINI**
- Icon display for the most important operating states, such as compression temperature, dew point and operating pressure
- Programmable automatic restart
- On-site operation – Remote on/off
- Fault memory (no. of positions)
- Refrigeration dryer activation

**AIR CONTROL B**
- Microprocessor controller
- Illuminated colour LCD display
- Navigation using number keys
- Icon display for all the important operating states, such as mains pressure, final oil and compression temperature
- Maintenance interval indicator
- Fault memory
- Link to superordinate control systems
- Refrigeration dryer activation

**AIR CONTROL P**
- Microprocessor controller with colour touch screen and illuminated graphic display menu
- Supported user guidance
- Simple connection to all accessory components
- Can be integrated into the customer's own management systems
- Timer programming for optimum adaptation to operational requirements
- "System pass" – the compressor's identity card
- Various language variants available
- Various graphical depictions can be accessed, e.g. volume flow produced as daily and weekly profile
- Basic load cycle switching: another 4 additional compressors (slaves) can be added as master control device
- Fault memory
- Programmable automatic restart
- Extensive statistics with data logging
- System parameters can be saved to a data medium to reduce programming effort

**AIR CONTROL HE**
Version: Compressor and global control system
- Integrated web server
- Can be used as a consumption-dependent global control system for up to 10 compressors
- Excellent optical display and simplest possible operation using a 7" TFT colour touch screen
- Flexible installation into the compressor or into a separate control cabinet possible
- Extremely user-friendly thanks to simple configuration and start-up wizard
- Parameter settings can be saved to a data medium
- Comprehensive statistics can be accessed using the data-logging functionality

Version: Global control system
- Quick access to information about the operating state of the connected compressors
- Graphical display of power and consumption profiles
- Split screen: compressor data and information about the network can be displayed in parallel
- Leaks can be identified and displayed
- Priorities can be allocated
- Energy-saving – all the compressors operate in one pressure tolerance range
- Speed-controlled compressors can be integrated seamlessly into the system
- Can be connected to higher-level control systems or a web server

HEAT RECOVERY
Optimum energy use
HEAT RECOVERY: REDUCE COSTS

Save energy easily and enjoy financial benefits quickly

The energy consumed for the generation of compressed air is converted almost entirely to heat. This is a high potential for savings since one compressed air station with a power requirement of 75 kW during 4000 operating hours, for example, will need approximately 300,000 kWh of power every year. Use this energy in the form of:

- Warm air to supplement space heating
- Warm water to support central heating
- Warm water for industrial water

Heat energy at no additional cost to you!
The cost of fuel oil, gas, and other forms of energy continues to rise. As a result, the use of energy will increasingly influence the competitiveness of many companies. But the recovery of heat energy can boost overall energy efficiency and contribute to the company’s profitability.

Heat recovery: determine your individualised benefits
How can your company specifically benefit from heat recovery? Perform custom calculations for clarity on your investment and payback period. This will give you a solid foundation for making decisions and provide detailed information on why you should take advantage of this opportunity.

Saving money and protecting the environment can be easy
Every litre of fuel oil that you save reduces your CO₂ emissions by approximately 2.8 kg. Heat recovery systems pay for themselves after one-half to one year on average, depending on capacity utilisation and the level of energy costs.

Examples of potential energy savings

<table>
<thead>
<tr>
<th>Compressor rated output</th>
<th>Usable heat</th>
<th>Fuel oil savings/year¹</th>
<th>Fuel oil cost savings/year¹</th>
</tr>
</thead>
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<td>2.8 kW</td>
<td>700 l</td>
<td>€490.00</td>
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<tr>
<td>37 kW</td>
<td>27 kW</td>
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<td>55 kW</td>
<td>40 kW</td>
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<td>75 kW</td>
<td>54 kW</td>
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<td>95 kW</td>
<td>23,980 l</td>
<td>€16,786.00</td>
</tr>
<tr>
<td>180 kW</td>
<td>115 kW</td>
<td>29,060 l</td>
<td>€20,342.00</td>
</tr>
<tr>
<td>Up to 400 kW</td>
<td>288 kW</td>
<td>72,660 l</td>
<td>€50,870.00</td>
</tr>
</tbody>
</table>

¹ At 2,000 hours heat recovery/year
² At a fuel oil price of 0.70 €/litre and 2,000 hours heat recovery/year
SPEED CONTROL

Needs-based adaptation of delivery volumes
Speed-controlled screw compressors

Cost-effective and sustainable: Kind to your wallet and the environment.

According to a study, approx. 80 billion kWh of electricity is used in compressed air systems in the EU each year, more than 10% of the electricity required in industry. So the cost-effectiveness of a compressed air system isn’t about how much it costs to buy, but how much it costs to run on a day-to-day basis. And this is where speed-controlled screw compressors from ALMiG really come into their own:

- Precise adaptation of delivery volumes
- Fewer idle times
- Less load shedding
- Constant line pressure
- Direct drive
- Fewer leakages

Capacity utilisation of the compressor: Flexible tolerance for greater cost-effectiveness.

From experience, we know that most compressors are only used at between 50 and 70% of capacity. The maximum delivery volume is in most cases only used during peak times.

Speed control: The key component of your compressed air system.

By varying the system’s motor speed, you automatically and sensitively adapt its delivery volume to your variable air consumption.

- If you require more compressed air, you simply need to increase the motor speed and therefore the compressor speed. The delivery volume increases.
- If you require less compressed air, you simply need to decrease the motor speed and therefore the compressor speed. The delivery volume decreases.

Precise adaptation of delivery volumes: No more annoying switching times.

If you’re exploiting your system at 100% capacity, all compressors work at full load. If, however, you require less compressed air, the conventional compressor changes to loaded/idle mode, causing the drive motor to switch. In this situation, you have to take into account the pre-set overrun time. This has a negative impact on your energy bill.

The VARIABLE and V-Drive series vary their power by gently and continually changing speeds, not by abruptly switching on and off.

Delivery volumes are continually adapted to your present requirements, so the process is kind to both your components and your wallet:

- No expensive idle mode, which consumes at least 25 – 30% of the energy consumed at full load
- No more switching times which place a heavy mechanical load on the components.

Less load shedding in fluctuating networks

Fluctuating networks cause the compressor to constantly change from loaded to idle mode (and back again). Each time the compressor changes mode, it sheds its load for around one minute.

A constant line pressure allows you to save a huge amount of energy

Speed-controlled compressors run at a constant operating pressure (p ~ 0.1 bar). Because high pressure always involves consuming greater amounts of energy, speed-controlled compressors allow you to make huge energy savings (1 bar higher pressure = 6 – 8% greater energy consumption).

ALMiG direct drive: The frictional connection

The compressor block is directly driven by the drive motor – and without any transmission loss.

This brings major benefits with it:

- Maximum power transfer
- Constant high efficiency of up to 99.9% over its entire working life
- Less noise and less maintenance effort than with V-belt and gear drives
- Excellent reliability.

Direct drive vs V-belt drive savings:

- V-belt drive (up to 96 – 97%)
- Direct drive (up to 99.9%) 4,000 h/year, 60 kW motor, 2.4 kW x 4,000 = 9,600 kWh

Fewer leakages thanks to reduced pressure: Speed control provides the answer

Almost all compressed air lines have leakages. The amount they leak depends on the pressure in the piping, among other things. The average leakage rate of a compressed air station is around 20 – 30%. By decreasing the pressure by just 1 bar (e.g. by controlling the speed), these leakages drop by approx. 10%. In addition, speed-controlled compressors with direct drive are very energy-efficient (no current peaks) and are also much quieter than comparable models with a V-belt drive.

Productivity without idle mode: the ALMiG efficiency programme

In idle mode, a compressor consumes around 25 to 30% of the energy consumed at full load. Variable compressors adjust the speed of the compression element automatically and exactly to the value needed for the volume flow required. SCD (Speed Control Direct drive) technology also ensures that only the power that corresponds to the speed is used. So compressors can considerably cut energy costs even when loaded at 70% of capacity.

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