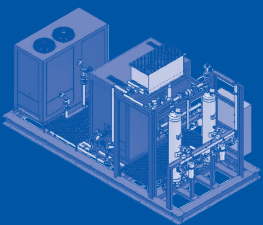


# oil free screw compressors

Worldwide air and gas package manufacturer



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## AIR COMPRESSOR PACKAGES WITH OIL FREE SCREW COMPRESSORS

Screw compressors operate on the principle of positive displacement. Each screw compressor consists of a male and female screw. As no oil is injected during compression, the screw rotors may not touch each other, which is achieved by gears. As there is no cooling provided by the injected oil, oil free screw compressors are equipped with two compression stages. Special attention is required for cooling downstream each compression stage.

The rotors are driven by time gears in order to achieve the best efficiency. These gears are lubricated and cooled by oil. Each air end can provide a certain capacity range by changing the gear ratio.

Each compressor is provided with an oil cooler, inter cooler and after cooler, which can be of an air- or water cooled type.

Each oil free rotary screw compressor is designed specially according to the customer specifications and applicable climate conditions (e.g. hazardous area, very low or high ambient temperatures, offshore environment).

### AIRPACK OPTIONS

- Compressor drive by LV, MV or HV electric motor, diesel engine or turbine
- Stainless steel components like enclosure panels, oil system, process piping, coolers and separators (e.g. offshore applications)
- ATEX explosion proof, suitable for operation in Zone 1 or Zone 2 environment
- Control by redundant and/or SIL certified PLC with HMI (human machine interface) for operation via touch screen
- Hydrogen Sulfide (H<sub>2</sub>S) compressor intake filters
- Winterization enclosure, for extreme low temperatures (-45°C)
- Tropicalization for extreme high ambient temperature up to 60°C
- Control by DCS (distributed control system)
- Vibration monitoring system by 4-20 mA detectors or sophisticated Bently Nevada monitoring system
- Provision of complete closed cooled water system with water chiller (if required)

The available oil free rotary screw compressors are mentioned in the table on the next page. For low capacities (< 55 kW) oil free tooth compressors are available.



oil free screw  
compressors

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## AIR COMPRESSOR PACKAGES WITH OIL FREE SCREW COMPRESSORS

The total investment costs and practical use of an oil injected screw versus and oil free screw can be considered:

- **Combination with dryer:**  
Higher pressure and capacity (maximum pressure of an oil free screw compressor is 10 bar(g)).
- **Ambient conditions:**  
An oil free screw compressor should not be applied in an earthquake sensible area or in a high ambient temperature environment, because of its small tolerance opening between the touch free screws.
- **Capital investments:**  
Considerable lower for oil flooded screw compressors.
- **Reliability:**  
Oil flooded screw compressors are better heat resistant.
- **Space requirements:**  
Due to the small air end (compressor block) space requirements are kept to a minimum.
- **Nitrogen production:**  
For nitrogen production oil free air must be applied (breathing air quality: Class 1 of ISO 8573). Oil free screw or centrifugal compressors should be applied. Above a pressure of 10 bar(g) oil free piston compressors are the correct choice.

| Model        | Capacity [Nm <sup>3</sup> /hr] at working pressure |      | Number of Stages | Cooling     | Sound level [dB(A)] |
|--------------|--|------|------------------|-------------|---------------------|
|              | 7,5  | 10   |                  |             |                     |
| COMP-25-OF   | 210  | 150  | 2                | Air & Water | 65                  |
| COMP-50-OF   | 380  | 320  | 2                | Air & Water | 65                  |
| COMP-75-OF   | 475  | 405  | 2                | Air & Water | 65                  |
| COMP-100-OF  | 645  | 580  | 2                | Air & Water | 65                  |
| COMP-125-OF  | 780  | 695  | 2                | Air & Water | 65                  |
| COMP-150-OF  | 1020   | 840  | 2                | Air & Water | 66                  |
| COMP-180-OF  | 1182   | 1002 | 2                | Air & Water | 67                  |
| COMP-200-OF  | 1266   | 1074 | 2                | Air & Water | 67                  |
| COMP-220-OF  | 1512   | 1236 | 2                | Air & Water | 68                  |
| COMP-275-OF  | 1866   | 1614 | 2                | Air & Water | 69                  |
| COMP-340-OF  | 2352   | 2010 | 2                | Air & Water | 70                  |
| COMP-400-OF  | 2596   | 2304 | 2                | Water       | 70                  |
| COMP-500-OF  | 3180   | 2832 | 2                | Water       | 71                  |
| COMP-550-OF  | 3510   | 3144 | 2                | Water       | 72                  |
| COMP-600-OF  | 4206   | 3504 | 2                | Water       | 73                  |
| COMP-700-OF  | 4644   | 4002 | 2                | Water       | 75                  |
| COMP-850-OF  | 5778   | 4932 | 2                | Water       | 76                  |
| COMP-1000-OF | 6948   | 5706 | 2                | Water       | 76                  |

Special constructions can be offered on request.

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