

## Screw Compressors VMW for stationary air compressors



### Water instead of oil!

#### **Aerzener Screw Compressor VMW oil-free with water injection Special assembly stage for stationary air compressors**

##### **1. General**

The world-wide demand for oil-free compressed air is constantly increasing. As it has been standard up to now high investment costs for oil-free compressor plants are now decreasing because of the application of the new Aerzener compressor stage with water injection.

The VMW stage is the core of these plants. Drive is provided by an electric motor in combination with a frequency control.

##### **2. Application**

The VMW water stage is supplied as component to manufacturers of air compressors who manufacture the accessories resp. the plant components (cooler, base frame, control etc.) themselves resulting in the following advantages:

- Increased efficiency for the generation of compressed air
- Protection of the components due to lower operating temperature
- Oil-free
- A thousand fold well-proven technology for oil-free compressor stages
- Ideal degree of efficiency because of the application of high-quality materials
- Insensitiveness with regard to water quality
- Reduced investment costs for the components

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## 3. Advantages in detail

- Improved cooling effect because of water and efficiency increase (less energy demand per quantity of compressed air)
- Low operating temperature of maximum 55 °C protects the compressor stage as well as the downstream components
- Compressed air oil-free because of constructive separation of conveyor room and bearing positions. This prevents contamination of compressed air.
- Reliable and a thousand fold well-proven technology with Aerzen is the basis of the water stage.
- Application of stainless-steel rotors for ideal efficiency and for prevention of corrosion.
- Bearings are separated from the medium generating an insensitive system with regard to water quality. This saves investment and operating costs and increases the plant safety.
- Water injection is ensured by the pressure differences arising within the system. Therefore the circulating pump becomes redundant.

## 4. Technical Data

|                                                                          |                                                    |
|--------------------------------------------------------------------------|----------------------------------------------------|
| Length x Width x Height:                                                 | 665 x 379 x 279 mm (installation height 267 mm)    |
| Weight:                                                                  | 147 kg                                             |
| Drive:                                                                   | directly coupled                                   |
| Driveshaft:                                                              | diameter 42 mm                                     |
| Intake volume flow:                                                      | 2,5 m <sup>3</sup> /min to 9,5 m <sup>3</sup> /min |
| Final compression pressure:                                              | 13 bar                                             |
| Max. power requirement:                                                  | 75 kW                                              |
| Speed range:                                                             | 1500 – 5000 1/min                                  |
| Permissible ambient temperature resp.<br>permissible intake temperature: | +5 to +40 °C                                       |
| Permissible final compression temperature:                               | +55 °C                                             |

## 5. Operating materials

|                                                         |                                                                                                                                                |
|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Lubricant for bearing area:                             | maintenance-free permanent oil-filling                                                                                                         |
| Injection water:                                        | drinking water according to 80/778/EEC<br>filtered, max. pore size 25 µm<br>max. conductivity = 300 µS/cm<br>(corresponding to approx. 10° dH) |
| max. total hardness = 1,8 millimol CaCO <sub>3</sub> /l |                                                                                                                                                |
| Permissible temperature of injected water:              | 5 °C to 40 °C                                                                                                                                  |
| Injection pressure:                                     | min. 6 bar recommended                                                                                                                         |
| Min. quantity of injection water:                       | approx. 65 l/min                                                                                                                               |



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