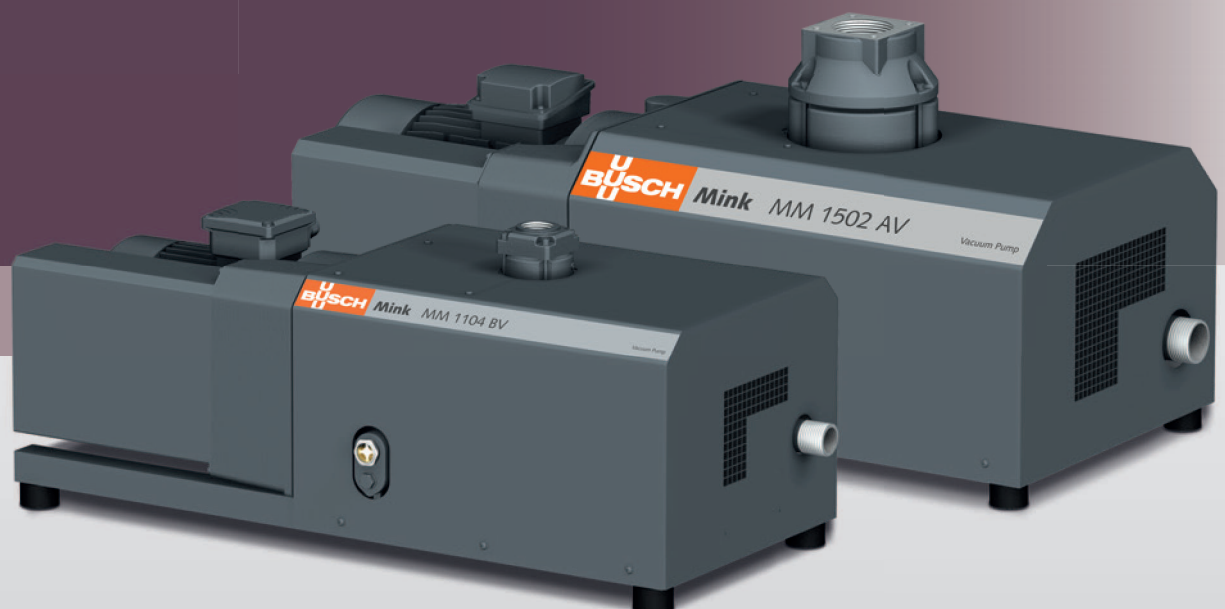


Mink MM

Claw Vacuum Pumps
for Rough Vacuum Industrial Applications



Claw Vacuum Technology
by Busch





Industrial Vacuum Generation – High performance, low maintenance

- **Efficient:**
energy-efficient,
minimized operating costs
- **Nearly
Maintenance-Free:**
dry and contact-free
compression
- **Reliable:**
operationally reliable

Busch Mink claw vacuum technology for industrial vacuum generation offers the highest possible energy efficiency combined with low maintenance and a constant level of performance.

The sophisticated design of Busch claw vacuum technology allows Mink claw

vacuum pumps to operate at extremely high efficiency levels, which has a positive effect on the pumping speed and energy consumption. In practice this means substantial energy savings for the same pumping speed when compared to conventional vacuum generators.

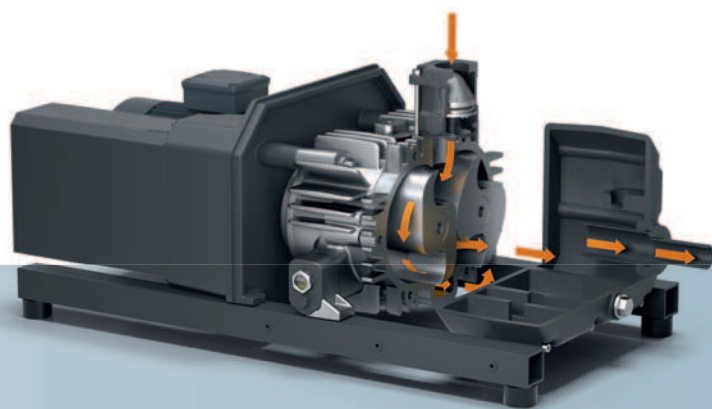
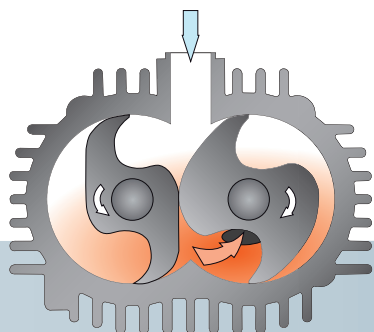
The contact-free operating principle of claw vacuum technology provides the additional benefit of nearly maintenance-free operation: None of the internal moving parts of the vacuum pump come in contact with each other, so components are not subject to wear. Servicing tasks such as inspection and replacement of worn parts are eliminated completely.

The proven, completely dry claw vacuum technology of Mink claw vacuum pumps allows them to run without operating fluids in the compression chamber. In practice this means no contamination of the pumped

medium, and no environmental emissions. In addition, no costs arise for the purchase, replacement and disposal of operating fluids.

Mink claw vacuum pumps are air cooled, so no effort for the installation and maintenance of a cooling system is required. Their contact-free operating principle allows them to run extremely efficiently throughout the vacuum range and to deliver constantly high pumping speeds during their entire life cycle.

The outstanding reliability and long service lifetime of Mink claw vacuum pumps are also a result of the contact-free and dry compression. An intelligent sound insulation design allows Mink claw vacuum pumps to operate at low noise levels.



Technical specifications

Mink claw vacuum pumps feature two claw-shaped rotors that move in opposite directions mounted in a housing. The shape of these claw rotors extracts, compresses and expels air or gas. The rotors do not come in contact with each other or the housing, so no lubricants or operating fluids are required in the compression chamber. The minimal clearance between the rotors and the chamber housing optimizes the internal seal and ensures constantly high pumping speeds. An effective air cooling system guarantees optimal operating temperatures. A synchronizing gearbox maintains precise rotor timing. Mink claw vacuum pumps are driven by a directly flange mounted asynchronous motor of efficiency class IE3.

Product Overview

Mink MM Series Type



➤ Mink MM 1104–1142 BV

50 Hz Ultimate pressure: 60 hPa (mbar)
Nominal pumping speed: 62–140 m³/h

60 Hz Ultimate pressure: 60 hPa (mbar)
Nominal pumping speed: 75–175 m³/h



➤ Mink MM 1324–1322 AV

50 Hz Ultimate pressure: 60–150 hPa (mbar)
Nominal pumping speed: 160–300 m³/h

60 Hz Ultimate pressure: 60–150 hPa (mbar)
Nominal pumping speed: 190–360 m³/h



➤ Mink MM 1402–1502 AV

50 Hz Ultimate pressure: 200 hPa (mbar)
Nominal pumping speed: 400–500 m³/h

60 Hz Ultimate pressure: 200 hPa (mbar)
Nominal pumping speed: 470–600 m³/h



➤ Mink MM –
efficient and reliable
vacuum generation.



Technical Features

Mink MM

1 Excellent performance

Dry claw vacuum technology

- Single-stage, two-shafted claw vacuum pump
- Constantly high pumping speed throughout the service lifetime
- Long service lifetime due to robust construction and proven design
- Components not subject to wear due to contact-free compression

2 Efficient

Low operating costs

- No operating fluids, with no purchase, replacement or disposal costs
- Low servicing costs, nearly maintenance-free
- Highest efficiency factor

3 Adaptable

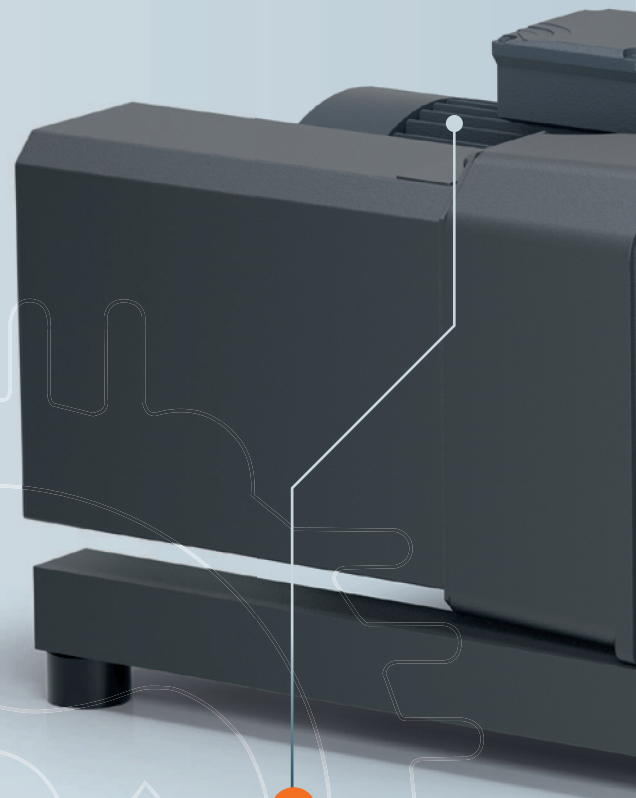
Industry standard motor

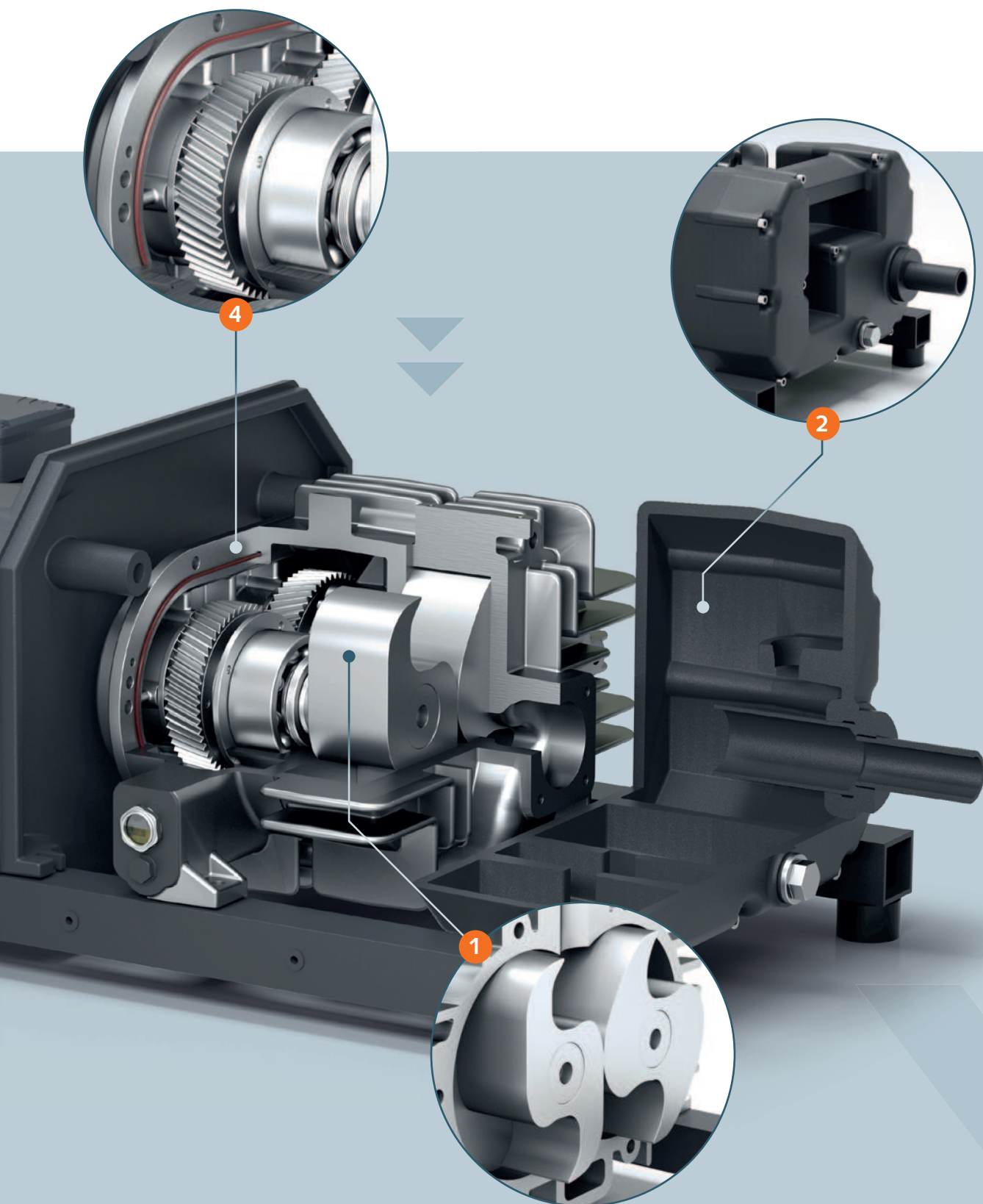
- No control electronics required, making installation easy
- Variable speed drive (option) – further energy savings
- Energy-saving motors of efficiency class IE3

4 Nearly maintenance-free

Dry and contact-free compression

- Components not subject to wear
- Only gearbox oil replacement required







Efficient and Dependable Vacuum Generation for a Wide Range of Industrial Applications

Milking

Mink MM claw vacuum pumps are the well-established vacuum generators in the milking market providing constant levels of clean vacuum in continuous operation for efficient milk extraction, milk transport and for effective cleaning of the whole system. They can be used in all types of milking plants, from individual milking robots to large milking carousels with numerous milking parlours.

Environmental Technology

Mink MM claw vacuum pumps are suitable for rough applications in open or mobile environments. The Aqua version offers high vapour tolerance and excellent corrosion protection making them the ideal vacuum generators for sewage and wastewater treatment, soil remediation or priming. Wastewater disposal in whole districts, cleaning sewer networks, food waste collection systems and vacuum toilets are only few examples of applications in which Mink MM have proven themselves.

Woodworking

Mink claw vacuum technology is increasingly used for vacuum clamping in CNC machining centres, and is supplied as standard equipment by leading woodworking machine manufacturers. Endusers appreciate the excellent reliability, minimal maintenance

and low operating costs in comparison to conventional vacuum generators. In addition to vacuum clamping, Mink vacuum pumps are also used in the woodworking industry for moulding and veneer presses, laminating, vacuum drying and handling.

Pneumatic conveying

Mink vacuum pumps are well established as the industry standard for pneumatic conveying of bulk materials. In the plastics industry they are mainly used to transport plastic granules from silos via dryers to extruders or injection moulding machines. The constant pumping speeds allow conveying rates to be controlled precisely, and the operating fluid free working principle excludes contamination of the bulk material.

Plastics processing

Mink claw vacuum pumps have many uses in the plastics processing industry. In addition to pneumatic conveying, important application areas for Mink claw vacuum technology include plastics degassing in extruders, evacuating injection moulds, and plastic foil thermoforming.

Food industry

Mink claw vacuum pumps are predestined for processes requiring operating fluid free vacuum in the food manufacturing and processing industries. They are the ideal

vacuum generators for handling cardboard boxes, packaging in cartons, and the filling of bottles, tubes and other containers. Mink vacuum pumps also provide operating fluid free vacuum for blister and thermoforming packaging processes.

Medical technology

Mink claw vacuum pumps provide vacuum to the treatment rooms of hospitals and other medical facilities. They are mostly installed centrally, and supply vacuum to medical appliances in the treatment rooms by pipe network. The high availability of Mink vacuum pumps contributes to improved safety in this sensitive application sector.

Central vacuum systems

Mink claw vacuum pumps are perfect as individual vacuum modules in a centralized vacuum supply. Busch delivers customized centralized systems for all industrial sectors. For applications in which oil-free operation is essential, Busch centralized vacuum supplies are equipped with Mink claw vacuum pumps.

... and many more!



Design Options Mink MM

ATEX certification

Mink MM claw vacuum pumps are also available in versions conforming to the EU guidelines for explosion hazard areas (ATEX).

Aqua version

The Aqua version may be ordered for applications transporting moist gases or vapours. This version features a special corrosion resistant coating.

Oxygen version

The Oxygen version is available for transporting gas mixtures with an oxygen content of over 21%. This version conforms to all safety requirements to permit safe extraction of gases with elevated oxygen content.

Speed control

Versions with frequency converter are available for optimal response to changing demand, allowing further savings in energy costs to be achieved.

Gas-tight version

The gas-tight version for applications transporting critical (e.g. toxic) gases reduces the leak rate to an absolute minimum.

Accessories and Spare Parts

- Standard motors meeting IEC or NEMA criteria, IE3
- Inlet filter
- Filter for vacuum relief valve
- Original Busch gearbox oils
- Drain valve

➤ IEC or NEMA
standard motor

➤ Inlet filter

➤ Drain valve



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Technical data is subject to change. Created in Germany. MG STB MINKMM Len 04/2018 7Aa