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Technical Data Sheet

PRO Double-Stage Vacuum Pump with ATEX Certificate

Catalogue reference: 4646880226

Professional double-stage vacuum pump designed for evacuation work in refrigeration and air-conditioning systems, as well as industrial applications requiring high performance, enhanced safety and compatibility with potentially explosive environments. Its flameproof motor design, IP55 protection and efficient filtration make it a reliable solution for demanding operations.

Recommended applications

- Maintenance and commissioning of refrigeration and air-conditioning systems.
- Use with A3 and A2 refrigerants, including R290, R32 and R1234yf.
- Air extraction in printing machinery.
- Vacuum packaging and gas analysis.
- Thermoplastic moulding and industrial processes requiring vacuum.
- Use as a backing pump in high-vacuum equipment.

Key features

- **Double-stage rotary vane design:** greater vacuum capacity and stable performance in professional work.
- **Flameproof certification:** Ex d IIB T4 Gb classification, suitable for environments with potentially hazardous gases or vapours.
- **Fully enclosed motor:** reduces the risk of spark generation in demanding work scenarios.
- **IP55 protection:** dust resistance and protection against low-pressure water jets.
- **Efficient filtration:** filter cotton to reduce oil mist and simplify maintenance.
- **Robust design:** compact structure with carrying handle, oil level sight glass, drain plug and stable base.

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Technical data:

Parameter	Value
Pump type	Double-stage rotary vane vacuum pump
Model	4646880226
Rated power supply	220 V / 50 Hz or 110 V / 60 Hz
Specified operating voltage	220 V ± 10 % / 50 Hz
Flow rate	226 l/min
Ultimate vacuum	2×10^{-1} Pa
Motor power	3/4 HP
Inlet connections	1/4” SAE / 3/8” SAE (“T” configuration)
Dimensions	421 × 138 × 282 mm
Oil capacity	660 ml
Net weight	19 kg
Ambient operating temperature	5 °C to 40 °C
Environmental protection	IP55
Safety certification	ATEX
Specified compatible refrigerants	A1/A2/A2L and A3

Main components

- Carrying handle.
- Exhaust and oil filling cap.
- Oil tank.
- Fan cover.
- Oil level sight glass.
- Oil drain plug.
- Motor.
- Support base.

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Preparation before use

1. Check that the supply voltage and frequency match those indicated on the product nameplate.
2. Make sure the switch is in the off position before connecting the pump.
3. Verify that the oil level is in the middle area of the sight glass. A low level reduces performance, while an excessive level may cause oil mist discharge.

Basic operating guide

1. Remove the air inlet cap and connect the vessel or system to be evacuated, checking thread compatibility.
2. Use piping that is as short as possible and verify that the inlet connection is airtight.
3. Connect the power supply and operate the switch to start the vacuum process.
4. When finished, close the valve between the pump and the evacuated vessel.
5. Switch off the pump and disconnect the power plug.
6. Remove the connection piping.
7. Tighten the inlet cap firmly to prevent dirt or particles from entering the pump chamber.

Safety warnings

- Read and carefully follow the instruction manual before using the pump.
- Wear safety goggles when working with refrigerants.
- Do not come into direct contact with refrigerant to avoid personal injury.
- Do not touch the oil tank or housing during operation, as the surface may reach high temperatures.
- All connected equipment must be properly grounded to avoid electrical hazards.
- Do not keep the air inlet open to the atmosphere for more than 5 minutes.
- Do not extract high-pressure refrigerant using the vacuum pump, as this may damage the pump body. Specific equipment is recommended for that operation.

Maintenance

Pump oil is a key factor in achieving ultimate vacuum. To maintain maximum performance, it is recommended to use low-viscosity vacuum pump oil, especially favourable for cold starts. If the oil becomes emulsified or contaminated, it must be replaced immediately.

Oil change procedure

1. Run the pump for approximately 1 minute so that it is warm before changing the oil.
2. With the pump running, open the air inlet to force oil out of the chamber.
3. Switch off the pump, open the drain plug and collect the used oil in a suitable container.
4. Slightly tilt the pump body to drain the remaining oil.
5. Firmly close the drain plug.
6. Open the filling cap and add new oil.

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7. Cover the air inlet, start the pump and check the level after one minute. If it is below the lower limit, slowly add oil until the normal level is reached.
8. Close the exhaust and oil filling cap again.

Troubleshooting common issues

Issue	Possible cause	Recommended solution
Low vacuum	Loose inlet cap, damaged gasket, insufficient or contaminated oil, blocked oil inlet, system leak, unsuitable model or internal wear.	Tighten the cap, replace the gasket, fill oil to the correct level, change the oil, clean the inlet and filter, check for leaks or select the appropriate model.
Oil leakage	Damaged seal or loose/deteriorated tank connections.	Replace the seal, check connections or send for professional repair.
Oil projection	Excess oil or inlet pressure too high for a prolonged period.	Drain to the correct level and select a suitable pump to increase pumping speed.
Starting difficulty	Oil temperature too low, motor or power supply failure, foreign objects in the pump or insufficient voltage.	Start repeatedly or warm the oil, check the motor and power supply, inspect the pump and verify the supply voltage.

Warranty

The product is covered by a 3-year warranty from the delivery date, provided that the defect is attributable to product quality, has been confirmed by a qualified inspection body, the equipment has not been repaired or disassembled without authorisation, and it has been used correctly in accordance with the instructions for use.

Notes

If maintenance or troubleshooting actions do not resolve the problem, it is recommended to contact the nearest distributor or send the pump to a professional repair centre.