

## DIAPHRAGM PUMP

### MD 1

■ The MD 1 diaphragm pump is an excellent choice for oil-free evacuation and pumping of non-corrosive gases down to 1.5 mbar ultimate vacuum. The three-stage design with precisely guided flat diaphragms provides outstanding pumping speed even close to the ultimate vacuum, especially when compared with similarly rated two-stage diaphragm pumps. The MD 1 is an ultra-low vibration pump with very long diaphragm lifetimes and stable ultimate vacuum documented with years of testing. With a flow path consisting of aluminum and selected plastics (diaphragms and valves made of PTFE/FKM and FKM, respectively) the pumps are suitable for a wide range of applications with non-corrosive gases.

#### PERFORMANCE FEATURES

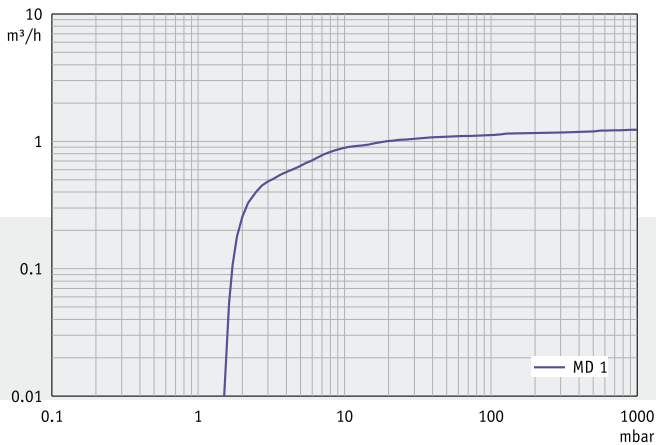
- contamination-free pumping and evacuation
- high flow rate even near ultimate vacuum
- excellent ultimate vacuum
- whisper quiet and ultra-low vibration
- proven long diaphragm life, maintenance-free drive system



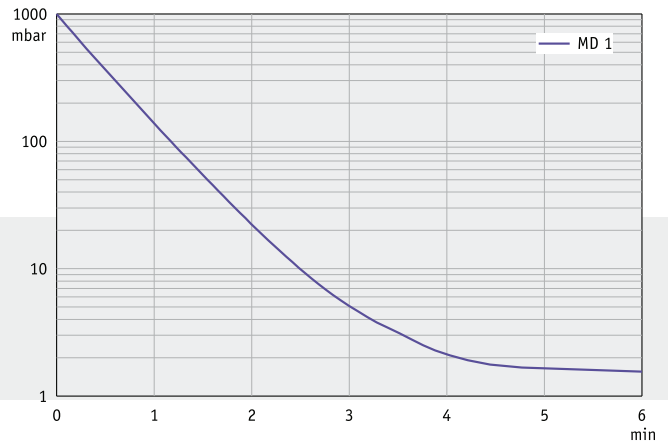
**MD 1**  
1.2 m<sup>3</sup>/h  
1.5 mbar

#### APPLICATIONS

The MD 1 is an excellent choice for continuous, oil-free evacuation and pumping of non-aggressive gases. It is suitable for high vacuum requirements at modest gas flow as often needed in physics and analytics. The pump is exceptionally quiet and reliable with long diaphragm and valve lifetimes. With its low ultimate vacuum and compact dimensions the MD 1 is widely used as replacement of rotary vane pumps. Typical applications are exhaust gas analysis, for degassing of small amounts of viscous media and in particular as backing pump for compact turbomolecular drag pumps. Back diffusion of oil or even oil back flow, e.g., into a high vacuum chamber is excluded due to its oil-free operation. For equipment manufacturers customized versions are available.



Pumping speed graph at 50 Hz


 Pump down graph at 50 Hz  
(10 l volume)

Pumping speeds and pump down times are only for information. Ultimate vacuum specification: See "Technical Data"

**TECHNICAL DATA**

Number of heads / stages

Max. pumping speed at 50/60 Hz

 m<sup>3</sup>/h

Ultimate vacuum (abs.)

mbar

Max. back pressure (abs.)

bar

Inlet connection

Outlet connection

Rated motor power

kW

Degree of protection

Dimensions (L x W x H), approx.

mm

Weight, approx.

kg

**MD 1**

4 / 3

1.2 / 1.4

1.5

1.1

Hose nozzle DN 6 mm

Silencer / G1/8"

0.08

IP 42

303 x 143 x 163

6.5

**ORDERING INFORMATION MD 1**

200-230 V ~ 50-60 Hz	CEE	Ex*	696080
200-230 V ~ 50-60 Hz	CH, CN	Ex*	696081
200-230 V ~ 50-60 Hz	UK	Ex*	696082
100-120 V ~ 50-60 Hz	US		696083
120 V ~ 60 Hz*	US		696073
100-120 V ~ 50-60 Hz		Ex*	
200-230 V ~ 50-60 Hz	IEC plug EN 60320		696087**

\*With NRTL certification for Canada and the USA

Ex\*: ATEX: II 3G IIC T3 X, Internal Atm. only

\*\*Please order power cable separately

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**ACCESSORIES MD 1**

Rubber vacuum tubing DN 6 mm (686000)

Small flange KF DN 16 / G1/8" (637425)

**ITEMS SUPPLIED**

Pump completely mounted, ready for use, with manual.