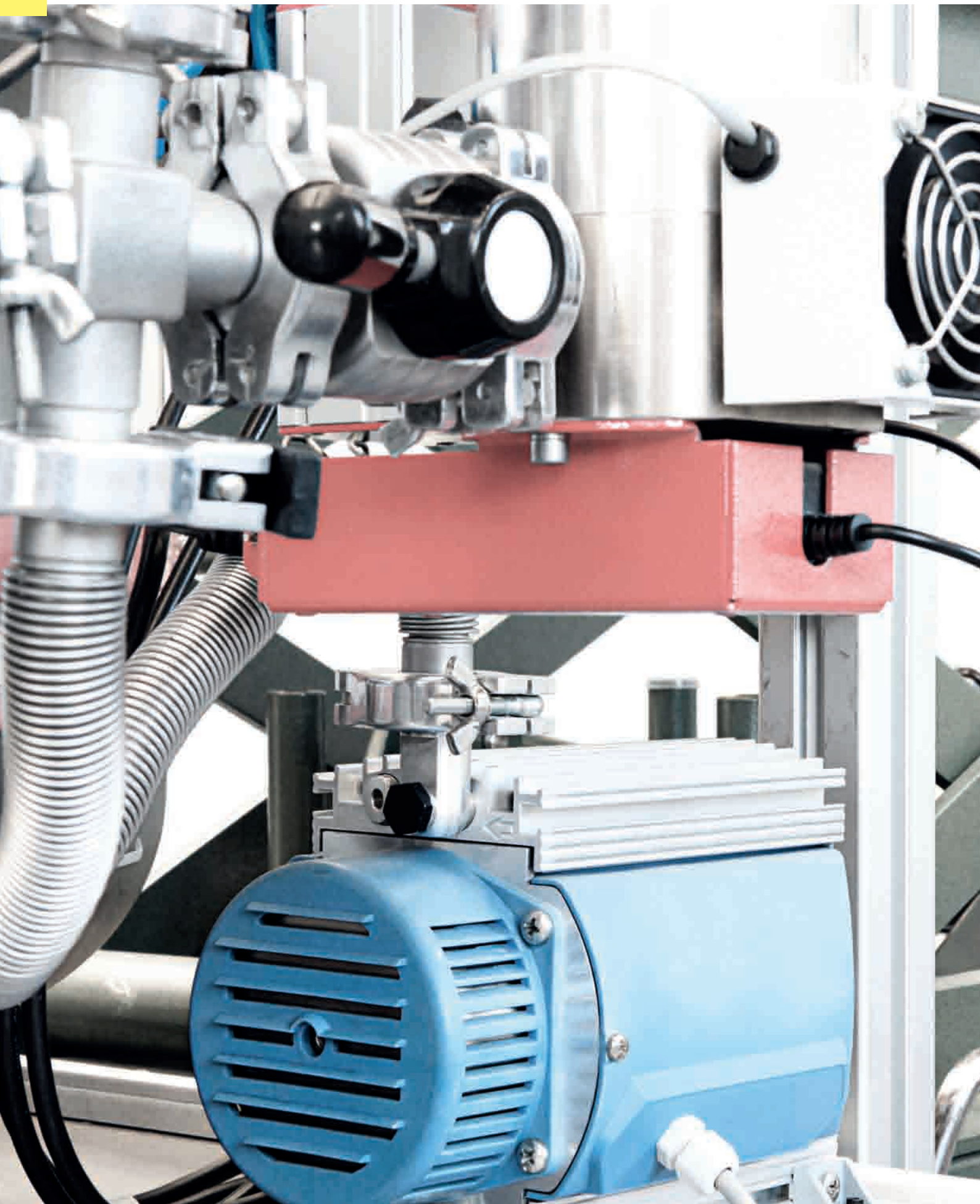
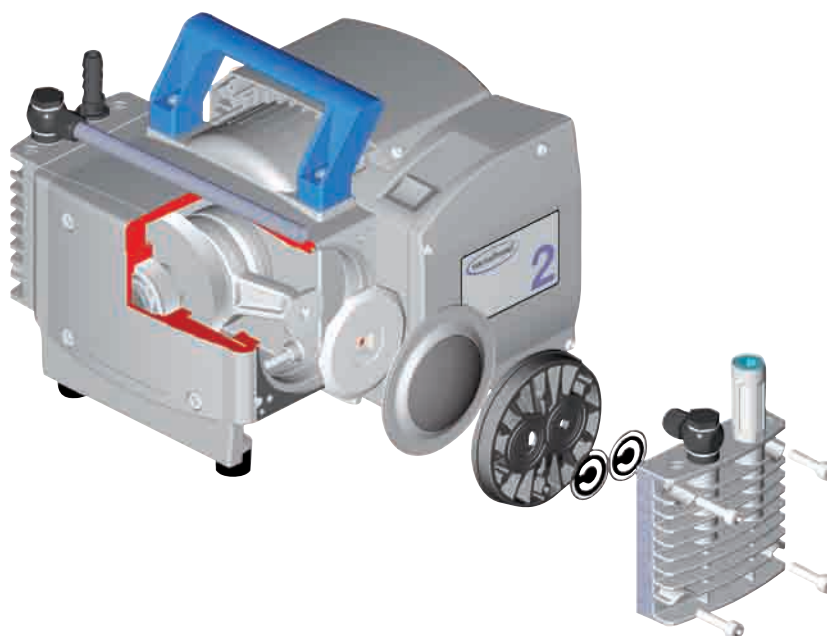


OIL-FREE VACUUM FOR NON-CORROSIVE GASES AND VAPORS



DIAPHRAGM PUMPS

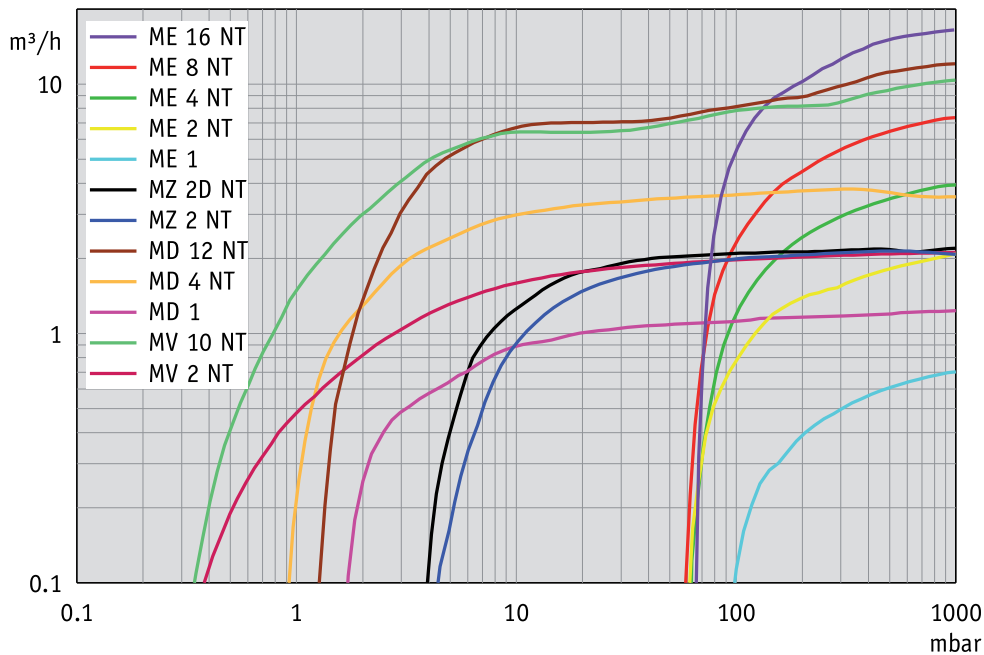
VACUUBRAND's aluminum design diaphragm pump is a perfect match for many applications in the laboratory and operations because it is oil-free and whisper quiet, and because it requires so little service. Diaphragms have especially long lives and hermetically seal the drive space from the pumping chamber to protect mechanical parts from corrosion. The pumps achieve their distinctively high performance from high pumping chamber volume relative to the minimal dead space. Highly flexible FKM double diaphragms with fabric reinforcement ensure an extremely long diaphragm lifetime. The pumps operate absolutely oil free and do not have any sliding components in the gas path. In normal operation they are completely free of abrasion. Besides contributing to the long service intervals the lack of abrasion also eliminates most of the particulate impurities frequently generated inside of scroll or piston pumps. This makes VACUUBRAND diaphragm pumps the right choice for clean applications.



- ◆ internal connection technology for a very low leakage rate and reliable performance. Stable ultimate vacuum, even after a very long operating time
- ◆ no abrasion - therefore dust and contamination-free
- ◆ long diaphragm life due to highly flexible FKM double diaphragms, fabric-reinforced
- ◆ FKM valves with excellent durability and vacuum performance
- ◆ with patented drive system for quiet and vibration-free running

DIAPHRAGM PUMPS

The VACUUBRAND diaphragm pump line includes pumps with a wide range of flow rate and ultimate vacuum. Single-stage diaphragm pumps reach as much as 70 mbar (absolute) vacuum. By connecting pump heads in series of two, three or four stages, we can create pumps with ultimate vacuum reaching 0.3 mbar on some models. Connecting the heads in parallel produces higher flow rates. VACUUBRAND pumps combine these options to create pumps with the capabilities you need for most applications.



The pumping speed of all pumps is measured according to ISO 21360
 Further information and diagrams for 60 Hz mains frequency at www.vacuubrand.com
 Pumping speeds and pump down times are only for information. Ultimate vacuum specification: See "Technical Data"

Nomenclature for VACUUBRAND pumps is built from the following codes designating specific features or components:

M = diaphragm (membrane) pump

E, Z, D, V = number of pump stages from single (E) to four (V) stage design




NT = labels the series of pumps comprising the New Technology

VARIO® = speed controlled pump with vacuum controller CVC 3000

Many vacuum applications in laboratories and industrial operations require electronic vacuum control. VACUUBRAND's unique VARIO® control system offers the distinctive advantages and convenience of the CVC 3000 vacuum controller

- ◆ precise vacuum control by continuously adjusting the motor speed of the diaphragm pump from 0-100%
- ◆ when used as a backing pump for turbomolecular drag pumps (with backing pressure in the mbar range): Patented turbo mode with automatic speed adjustment for even better forevacuum
- ◆ this results in lower heating and better residual gas performance of the turbo pump
- ◆ unrivaled long diaphragm and valve lifetime by reducing the number of diaphragm strokes
- ◆ very quiet, extremely low-vibration operation and significantly reduced energy consumption

SERIES OVERVIEW

			
Ultimate vacuum (abs.)	Diaphragm pumps without vacuum control	Diaphragm pumps with manual vacuum and pressure control	Diaphragm pumps with electronic vacuum control
down to 70 mbar	ME 1 pg. 114 0.7 m ³ /h ME 2 NT pg. 116 2.0 m ³ /h ME 4 NT pg. 116 4.0 m ³ /h ME 8 NT pg. 120 7.3 m ³ /h ME 16 NT pg. 120 16.4 m ³ /h	ME 4R NT pg. 118 3.8 m ³ /h	
down to 4 mbar	MZ 2 NT pg. 122 2.2 m ³ /h MZ 2D NT pg. 122 2.3 m ³ /h		
down to 1 mbar	MD 1 pg. 124 1.2 m ³ /h MD 4 NT pg. 126 3.8 m ³ /h MD 12 NT pg. 128 12.1 m ³ /h		MD 4 NT VARIO pg. 126 5.7 m ³ /h MD 12 NT VARIO pg. 128 13.4 m ³ /h
down to 0.3 mbar	MV 2 NT pg. 130 2.2 m ³ /h MV 10 NT pg. 132 10.4 m ³ /h		MV 2 NT VARIO pg. 130 3.3 m ³ /h MV 10 NT VARIO pg. 132 12.1 m ³ /h

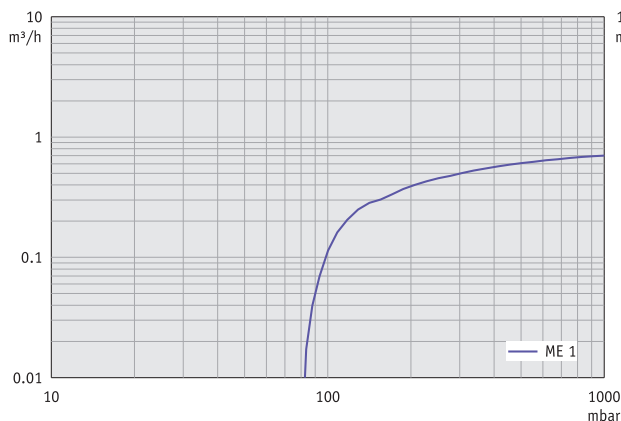
- ◆ convenient, quick and simple to use due to the new top mounted power switch
- ◆ whisper quiet and very low vibration
- ◆ requires minimal benchtop space
- ◆ maintenance-free drive system and proven long diaphragm life
- ◆ wetted materials: PTFE, aluminum



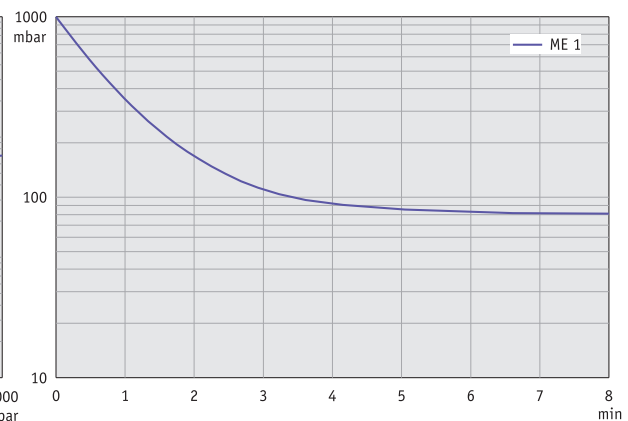
ME 1

Vacuum filtration is one of the most common applications used for sample preparation in chemistry, microbiology, waste water control and other analytical processes. The ME 1 diaphragm pump offers a compact, high performance and easy-to-use solution which is perfect for single port filtrations. These oil-free diaphragm pumps provide a well-proven and extraordinarily long diaphragm life time with typically 15,000 operating hours. The functional, space saving and innovative design with visible top mounted power switch ensures convenient and quick operation for day to day lab work. The PTFE diaphragm and valves are rugged and provide high chemical resistance. An optional manual regulator valve with dial gauge enables variable fine adjustment of the pumping speed and ultimate vacuum.

Pumping speed graph at 50 Hz



Pump down graph at 50 Hz (10 l volume)



DIAPHRAGM PUMPS

TECHNICAL DATA**ME 1**

Number of heads / stages	1 / 1
Max. pumping speed 50/60 Hz	0.7 / 0.85 m ³ /h
Ultimate vacuum (abs.)	100 mbar
Max. back pressure (abs.)	1.1 bar
Inlet connection	Hose nozzle DN 6-10 mm
Outlet connection	Silencer / G1/8"
Rated motor power	0.04 kW
Degree of protection	IP 40
Dimensions (L x W x H), approx.	247 x 121 x 145 mm
Weight, approx.	5.0 kg

ACCESSORIES

Rubber vacuum tubing DN 6 mm (686000)
 Rubber vacuum tubing DN 8 mm (686001)
 Vacuum regulator valve unit for ME 1 (696842)

ITEMS SUPPLIED

Pump completely mounted, ready for use, with manual.

ORDERING INFORMATION**ME 1**

230 V ~ 50-60 Hz	CEE	Ex*	721000
230 V ~ 50-60 Hz	CH, CN	Ex*	721001
230 V ~ 50-60 Hz	UK, IN	Ex*	721002
100-120 V ~ 50-60 Hz	US		721003
100-120 V ~ 50-60 Hz /			
200-230 V ~ 50-60 Hz		Ex*	**721005

With NRTL certification for Canada and the USA

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

**Please order power cable separately

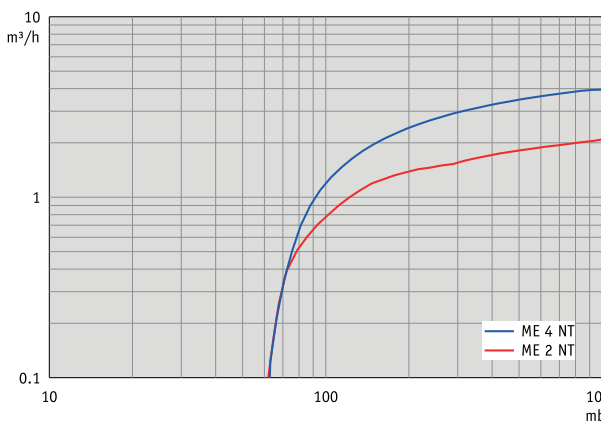
- ◆ contamination-free pumping and evacuation
- ◆ high flow rate even near ultimate vacuum
- ◆ whisper quiet
- ◆ ME 4 NT with low vibration and higher pumping speed
- ◆ exceptionally long diaphragm life and maintenance-free drive system for low lifetime costs



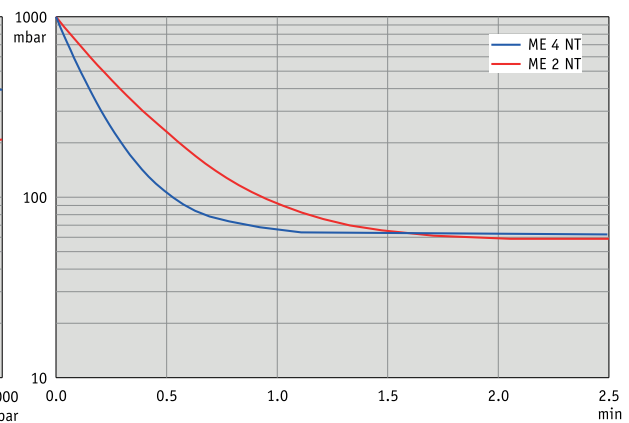
ME 2 NT - ME 4 NT

Diaphragm pumps are an excellent solution for continuous, oil-free evacuation and pumping of gases. All parts in contact with pumped media are made of aluminum and selected plastics, allowing a wide range of applications for non-corrosive gases. The one-stage construction provides the advantageous combination of high pumping speed and an ultimate vacuum down to 70 mbar. The highly flexible fabric-reinforced double diaphragm made of FKM is ideal for extended operating life. The NT-series features further improved performance data.

Pumping speed graph at 50 Hz



Pump down graph at 50 Hz (10 l volume)



Further information and diagrams for 60 Hz mains frequency at www.vacuubrand.com
 Pumping speeds and pump down times are only for information. Ultimate vacuum specification: See "Technical Data"

DIAPHRAGM PUMPS

TECHNICAL DATA**ME 2 NT**

Number of heads / stages	1 / 1
Max. pumping speed 50/60 Hz	2.0 / 2.2 m ³ /h
Ultimate vacuum (abs.)	70 mbar
Max. back pressure (abs.)	2 bar
Inlet connection	Hose nozzle DN 8-10 mm
Outlet connection	Silencer / G1/4"
Rated motor power	0.18 kW
Degree of protection	IP 40
Dimensions (L x W x H), approx.	243 x 211 x 198 mm
Weight, approx.	10.2 kg

TECHNICAL DATA**ME 4 NT**

Number of heads / stages	2 / 1
Max. pumping speed 50/60 Hz	4.0 / 4.4 m ³ /h
Ultimate vacuum (abs.)	70 mbar
Max. back pressure (abs.)	2 bar
Inlet connection	Hose nozzle DN 8-10 mm
Outlet connection	2 x silencer / G1/4"
Rated motor power	0.18 kW
Degree of protection	IP 40
Dimensions (L x W x H), approx.	243 x 239 x 198 mm
Weight, approx.	11.0 kg

ORDERING INFORMATION**ME 2 NT**

230 V ~ 50-60 Hz	CEE	Ex*	730000
230 V ~ 50-60 Hz	UK, IN	Ex*	730002
100-115 V ~ 50-60 Hz /			
120 V ~ 60 Hz	US		730003

ORDERING INFORMATION**ME 4 NT**

230 V ~ 50-60 Hz	CEE	Ex*	731000
230 V ~ 50-60 Hz	CH, CN	Ex*	731001
230 V ~ 50-60 Hz	UK, IN	Ex*	731002
100-115 V ~ 50-60 Hz /			
120 V ~ 60 Hz	US		731003
100-115 V ~ 50-60 Hz / 120 V ~ 60 Hz /			
200-230 V ~ 50-60 Hz		Ex*	**731005

ACCESSORIES

Vacuum regulator valve with manometer (696840)
 VACUU-LAN® Mini-Network (2614455)
 Rubber vacuum tubing DN 8 mm (686001)

ITEMS SUPPLIED

Pump completely mounted, ready for use, with manual.

With NRTL certification for Canada and the USA

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

**Please order power cable separately

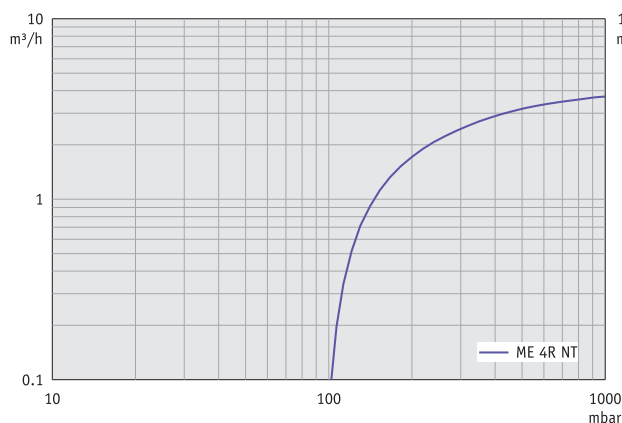
- ◆ contamination-free pumping, evacuation and compression
- ◆ high flow rate even near ultimate vacuum
- ◆ adjustment of outlet pressure and vacuum level with regulator valves
- ◆ very low vibration
- ◆ exceptionally long diaphragm life and maintenance-free drive system for low lifetime costs



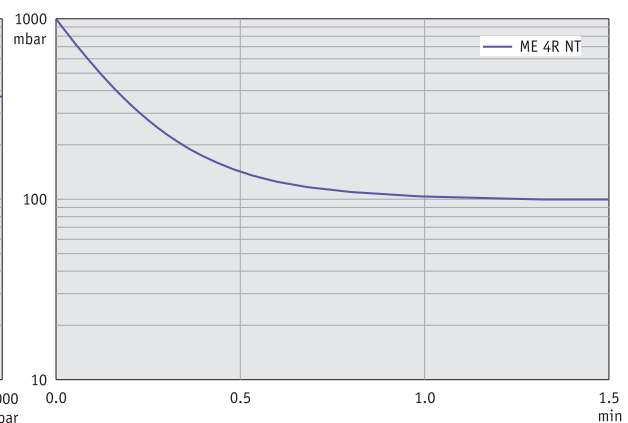
ME 4R NT

This one-stage diaphragm pump works as a vacuum generator and as well as a compressor. All parts in contact with pumped media are made of aluminum and selected plastics (PTFE diaphragms and valves). They enable a wide range of applications for non-corrosive gases. The inlet and outlet connections of the ME 4R NT are equipped with regulator valves for vacuum and overpressure, respectively. Both the compression pressure and vacuum level can be adjusted. Inlet vacuum level and outlet pressure are indicated by manometers.

Pumping speed graph at 50 Hz



Pump down graph at 50 Hz
(10 l volume)



DIAPHRAGM PUMPS

TECHNICAL DATA**ME 4R NT**

Number of heads / stages	2 / 1
Max. pumping speed 50/60 Hz	3.8 / 4.2 m ³ /h
Ultimate vacuum (abs.)	100 mbar
Max. back pressure (abs.)	4 bar
Inlet connection	Hose nozzle DN 8-10 mm
Outlet connection	Hose nozzle DN 8-10 mm
Rated motor power	0.18 kW
Degree of protection	IP 40
Dimensions (L x W x H), approx.	243 x 239 x 290 mm
Weight, approx.	11.5 kg

ACCESSORIES

Rubber vacuum tubing DN 8 mm (686001)

ITEMS SUPPLIED

Pump completely mounted, ready for use, with manual.

ORDERING INFORMATION**ME 4R NT**

230 V ~ 50-60 Hz	CEE	731100
230 V ~ 50-60 Hz	UK, IN	731102
100-115 V ~ 50-60 Hz /		
120 V ~ 60 Hz	US	731103

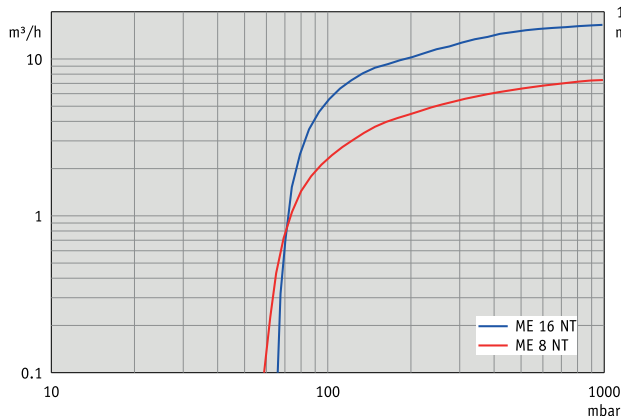
- ◆ contamination-free pumping and evacuation
- ◆ high flow rate even near ultimate vacuum
- ◆ whisper quiet
- ◆ very low vibration
- ◆ exceptionally long diaphragm life and maintenance-free drive system for low lifetime costs



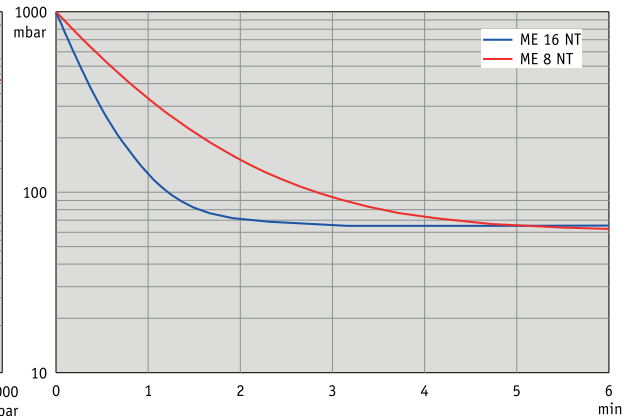
ME 8 NT - ME 16 NT

Diaphragm pumps are an excellent solution for continuous, oil-free evacuation and pumping of gases. The one-stage design provides the advantageous combination of high pumping speed and low ultimate vacuum down to 70 mbar. All parts in contact with pumped media are made of aluminum and selected plastics allowing a wide range of applications for non-corrosive gases. The highly flexible, fabric-reinforced double diaphragms made of FKM are ideal for extended operating life. These pumps are particularly powerful and offer large volume flow. The eight-cylinder pump ME 16 NT features exceptionally high pumping speed, low vibration and a very compact design with smooth and easy-to-clean surfaces.

Pumping speed graph at 50 Hz



Pump down graph at 50 Hz
(100 l volume)



DIAPHRAGM PUMPS

TECHNICAL DATA**ME 8 NT**

Number of heads / stages	4 / 1
Max. pumping speed 50/60 Hz	7.3 / 8.1 m ³ /h
Ultimate vacuum (abs.)	70 mbar
Max. back pressure at outlet (abs.)	2 bar
Inlet connection	Hose nozzle DN 8-10 mm
Outlet connection	2 x silencer / G1/4"
Rated motor power	0.25 kW
Degree of protection	IP 40
Dimensions (L x W x H), approx.	325 x 239 x 198 mm
Weight, approx.	16.4 kg

TECHNICAL DATA**ME 16 NT**

Number of heads / stages	8 / 1
Max. pumping speed 50/60 Hz	16.4 / 18.4 m ³ /h
Ultimate vacuum (abs.)	70 mbar
Max. back pressure at outlet (abs.)	1.1 bar
Inlet connection	Small flange KF DN 25
Outlet connection	Silencer / G1/2"
Rated motor power	0.44 kW
Degree of protection	IP 40
Dimensions (L x W x H), approx.	554 x 260 x 359 mm
Weight, approx.	30.6 kg

ACCESSORIES ME 8 NT

Rubber vacuum tubing DN 8 mm (686001)

ACCESSORIES ME 16 NT

Stainless steel tubing KF DN 25 (1000 mm: 673337)

Hose nozzle DN 15 mm / G1/2" (642472)

Small flange KF DN 16 / G1/2" (672101)

ITEMS SUPPLIED

Pump completely mounted, ready for use, with manual.

ORDERING INFORMATION**ME 8 NT**

230 V ~ 50-60 Hz	CEE	Ex*	734000
230 V ~ 50-60 Hz	CH, CN	Ex*	734001
230 V ~ 50-60 Hz	UK, IN	Ex*	734002
120 V ~ 60 Hz	US		734003
100 V ~ 50-60 Hz	US		734006

ORDERING INFORMATION**ME 16 NT**

230 V ~ 50-60 Hz	CEE	Ex*	741000
230 V ~ 50-60 Hz	UK, IN	Ex*	741002
100-115 V ~ 50-60 Hz /			
120 V ~ 60 Hz	US		741003

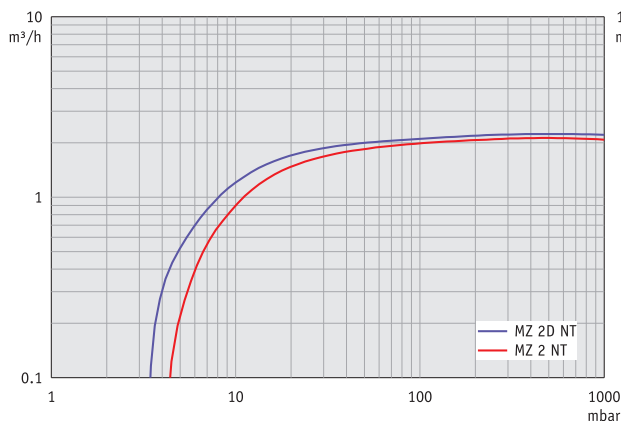
- ◆ contamination-free pumping and evacuation
- ◆ high flow rate even near ultimate vacuum
- ◆ good ultimate vacuum
- ◆ whisper quiet and very low vibration
- ◆ exceptionally long diaphragm life and maintenance-free drive system for low lifetime costs



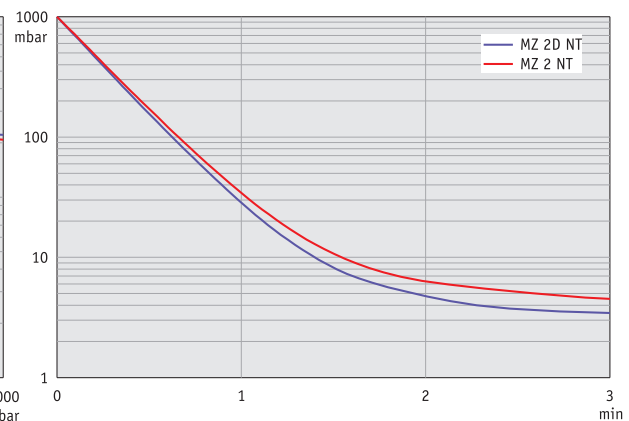
MZ 2 NT - MZ 2D NT

Diaphragm pumps are an excellent solution for continuous, oil-free evacuation and pumping of gases. All parts in these MZ 2 series pumps that are in contact with pumped media are made of aluminum, stainless steel and selected plastics, allowing a wide range of applications for non-corrosive gases. The two-stage construction provides the advantageous combination of high pumping speed and an ultimate vacuum down to 4 mbar. The highly flexible fabric-reinforced double diaphragms made of FKM provide high reliability and extended operating life. The NT-series features further improved performance data and compact design.

Pumping speed graph at 50 Hz



Pump down graph at 50 Hz
(10 l volume)



DIAPHRAGM PUMPS

TECHNICAL DATA**MZ 2 NT**

Number of heads / stages	2 / 2
Max. pumping speed 50/60 Hz	2.2 / 2.4 m ³ /h
Ultimate vacuum (abs.)	7 mbar
Max. back pressure (abs.)	2 bar
Inlet connection	Hose nozzle DN 8-10 mm
Outlet connection	Silencer / G1/4"
Rated motor power	0.18 kW
Degree of protection	IP 40
Dimensions (L x W x H), approx.	243 x 239 x 198 mm
Weight, approx.	11.0 kg

TECHNICAL DATA**MZ 2D NT**

Number of heads / stages	2 / 2
Max. pumping speed 50/60 Hz	2.3 / 2.5 m ³ /h
Ultimate vacuum (abs.)	4 mbar
Max. back pressure (abs.)	1.1 bar
Inlet connection	Small flange KF DN 16
Outlet connection	Silencer / G1/4"
Rated motor power	0.18 kW
Degree of protection	IP 40
Dimensions (L x W x H), approx.	243 x 242 x 198 mm
Weight, approx.	11.4 kg

ORDERING INFORMATION**MZ 2 NT**

230 V ~ 50-60 Hz	CEE	Ex*	732000
230 V ~ 50-60 Hz	CH, CN	Ex*	732001
230 V ~ 50-60 Hz	UK, IN	Ex*	732002
100-115 V ~ 50-60 Hz /			
120 V ~ 60 Hz	US		732003
100-115 V ~ 50-60 Hz / 120 V ~ 60 Hz /			
200-230 V ~ 50-60 Hz		Ex*	**732005

ACCESSORIES MZ 2 NT

Small flange KF DN 16 / G1/4" (662590)
 Rubber vacuum tubing DN 8 mm (686001)

ACCESSORIES MZ 2D NT

Stainless steel tubing KF DN 16 (1000 mm: 673336)

ITEMS SUPPLIED

Pump completely mounted, ready for use, with manual.

ORDERING INFORMATION**MZ 2D NT**

230 V ~ 50-60 Hz	CEE	Ex*	732200
230 V ~ 50-60 Hz	UK, IN	Ex*	732202
100-115 V ~ 50-60 Hz /			
120 V ~ 60 Hz	US		732203
100-115 V ~ 50-60 Hz / 120 V ~ 60 Hz /			
200-230 V ~ 50-60 Hz		Ex*	**732205

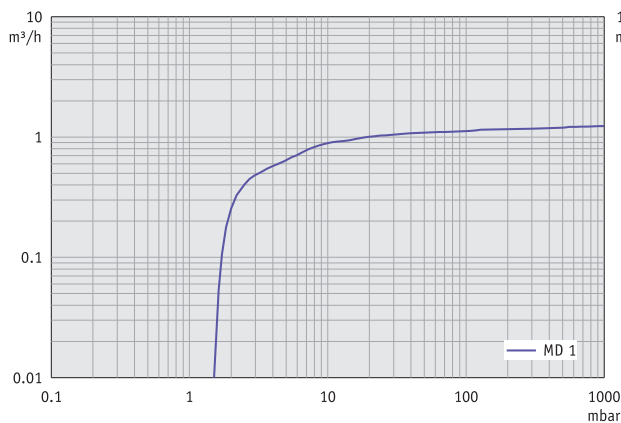
- ◆ contamination-free pumping and evacuation
- ◆ high flow rate even near ultimate vacuum
- ◆ excellent ultimate vacuum
- ◆ whisper quiet and ultra-low vibration
- ◆ proven long diaphragm life, maintenance-free drive system



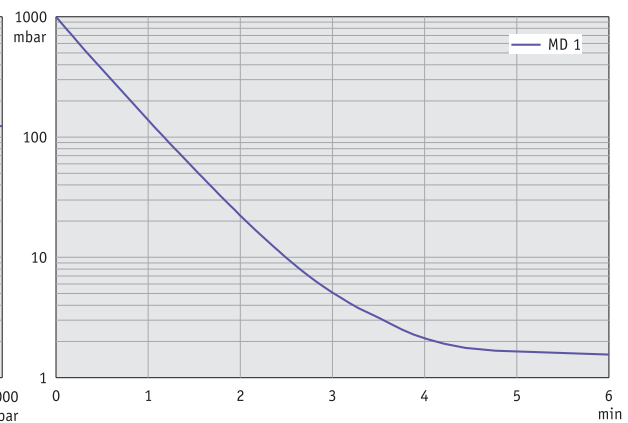
MD 1

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.

Pumping speed graph at 50 Hz



Pump down graph at 50 Hz
(10 l volume)



DIAPHRAGM PUMPS

TECHNICAL DATA**MD 1**

Number of heads / stages	4 / 3
Max. pumping speed 50/60 Hz	1.2 / 1.4 m ³ /h
Ultimate vacuum (abs.)	1.5 mbar
Max. back pressure (abs.)	1.1 bar
Inlet connection	Hose nozzle DN 6 mm
Outlet connection	Silencer / G1/8"
Rated motor power	0.08 kW
Degree of protection	IP 42
Dimensions (L x W x H), approx.	303 x 143 x 163 mm
Weight, approx.	6.5 kg

ACCESSORIES

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.

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, IN	Ex*	696082
100-120 V ~ 50-60 Hz	US		696083
120 V ~ 60 Hz	US		*696073
100-120 V ~ 50-60 Hz /			
200-230 V ~ 50-60 Hz		Ex*	**696087

*With NRTL certification for Canada and the USA

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

**Please order power cable separately

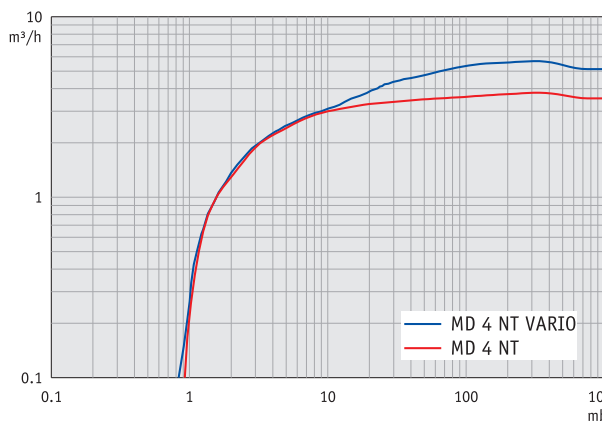
- ◆ contamination-free pumping and evacuation
- ◆ high flow rate even near ultimate vacuum
- ◆ CVC 3000 controller on VARIO® version offers easy operation with clear text menus
- ◆ VARIO® option for self-regulating vacuum optimization throughout the process
- ◆ excellent ultimate vacuum, VARIO® version with higher pumping speed and TURBO-MODE for use as backing pump for turbo pumps



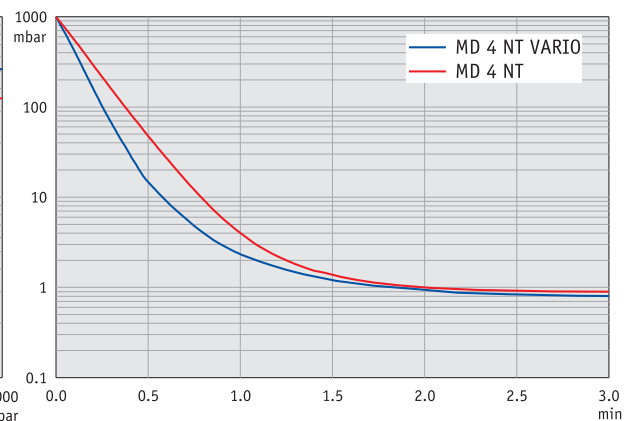
MD 4 NT - MD 4 NT VARIO

These three-stage diaphragm pumps are an excellent solution for continuous, oil-free pumping of non-corrosive gases. They reach an excellent ultimate vacuum of 1 mbar. All parts in contact with pumped gases and vapors are made of aluminum, stainless steel and carefully selected plastics suitable for a wide range of applications with non-corrosive gases. The NT series provides whisper quiet and ultra-low vibration operation, high leak tightness and improved performance. The highly flexible fabric-reinforced double diaphragm made of FKM is ideal for extended operating life. The VARIO® design includes the VARIO® pump and the CVC 3000 vacuum controller with external gauge head. The demand-responsive motor speed control on VARIO® models further extends the already long lifetimes of diaphragms and valves.

Pumping speed graph at 50 Hz



Pump down graph at 50 Hz
(10 l volume)



Further information at www.vacuubrand.com

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

DIAPHRAGM PUMPS

TECHNICAL DATA**MD 4 NT**

Number of heads / stages	4 / 3
Max. pumping speed 50/60 Hz	3.8 / 4.3 m ³ /h
Ultimate vacuum (abs.)	1 mbar
Max. back pressure at outlet (abs.)	1.1 bar
Inlet connection	Small flange KF DN 16
Outlet connection	Silencer / G1/4"
Rated motor power	0.25 kW
Degree of protection	IP 40
Dimensions (L x W x H), approx.	325 x 239 x 198 mm
Weight, approx.	16.4 kg

TECHNICAL DATA**MD 4 NT VARIO**

Vacuum controller	CVC 3000
Number of heads / stages	4 / 3
Max. pumping speed	5.7 m ³ /h
Ultimate vacuum (abs.)	1 mbar
Max. back pressure at outlet (abs.)	1.1 bar
Inlet connection	Small flange KF DN 16
Outlet connection	Silencer / G1/4"
Vacuum sensor connection	Small flange KF DN 16, PTFE tubing connection 10/8 mm, hose nozzle DN 6/10 mm
Rated motor power	0.53 kW
Degree of protection	IP 20
Dimensions (L x W x H), approx.	325 x 235 x 245 mm
Weight, approx.	18.6 kg

ORDERING INFORMATION**MD 4 NT**

230 V ~ 50-60 Hz	CEE	Ex*	736000
230 V ~ 50-60 Hz	CH	Ex*	736001
230 V ~ 50-60 Hz	UK, IN	Ex*	736002
230 V ~ 50-60 Hz	CN	Ex*	736006
100-115 V ~ 50-60 Hz /			
120 V ~ 60 Hz	US		736003
100-115 V ~ 50-60 Hz / 120 V ~ 60 Hz /			
200-230 V ~ 50-60 Hz		Ex*	**736005

ACCESSORIES MD 4 NT

Stainless steel tubing KF DN 16 (1000 mm: 673336)

ACCESSORIES MD 4 NT VARIOStainless steel tubing KF DN 16 (1000 mm: 673336)
Vent valve VBM-B (674217)**ITEMS SUPPLIED**

Pump completely mounted, ready for use, with manual.

ORDERING INFORMATION**MD 4 NT VARIO**

200-230 V ~ 50-60 Hz	CEE	Ex*	736300
200-230 V ~ 50-60 Hz	CH, CN	Ex*	736301
100-120 V ~ 50-60 Hz	US		736303

With NRTL certification for Canada and the USA (Exception: MD 4 NT VARIO)

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

**Please order power cable separately

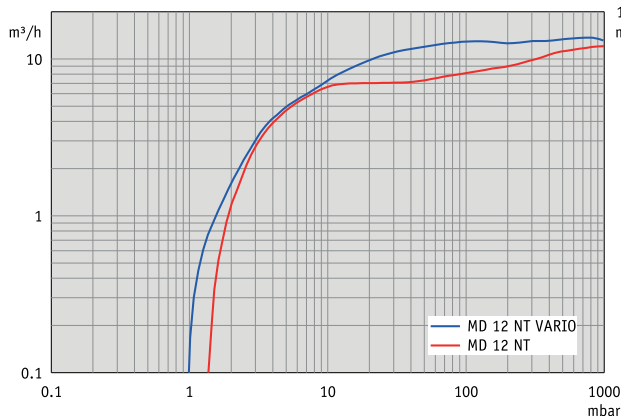
- ◆ contamination-free pumping and evacuation
- ◆ high flow rate even near ultimate vacuum
- ◆ VARIO® model includes the easily operated CVC 3000 vacuum controller with clear text menus, removable
- ◆ VARIO® version offers self-regulating vacuum optimization throughout the process
- ◆ TURBO·MODE in VARIO® version with even better ultimate vacuum especially for backing of turbo pumps



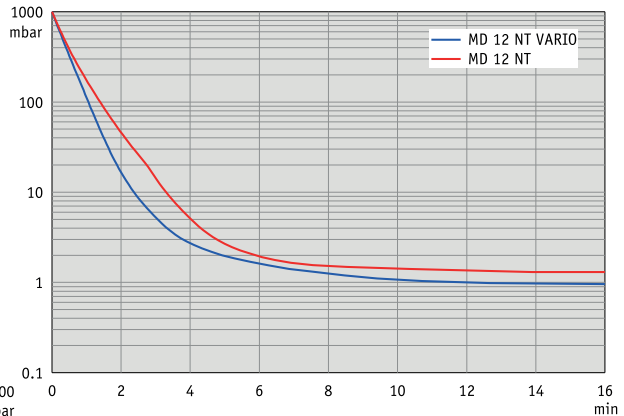
MD 12 NT - MD 12 NT VARIO

These oil-free diaphragm pumps are especially powerful pumps for evacuation and pumping of non aggressive gases. The three-stage design combines especially high pumping speed with excellent ultimate vacuum down to 2 mbar, and down to 1.5 mbar with the VARIO® version. It provides precise vacuum control and consists always of the pump and the CVC 3000 vacuum controller with external gauge head. For the use as backing pump it features continuous adaptation of running speed for optimized forevacuum. The highly flexible, fabric-reinforced double diaphragm made of FKM offers extended operating life that increases significantly in motor speed controlled operation. Like all VACUUBRAND diaphragm pumps they generate an absolutely oil-free and clean vacuum as they work without any sliding seals. Hence generation of dust that might creep back into the high vacuum application, as often found with Scroll or piston pumps, is excluded.

Pumping speed graph at 50 Hz



Pump down graph at 50 Hz
(100 l volume)



DIAPHRAGM PUMPS

TECHNICAL DATA**MD 12 NT**

Number of heads / stages	8 / 3
Max. pumping speed 50/60 Hz	12.1 / 13.3 m ³ /h
Ultimate vacuum (abs.)	2 mbar
Max. back pressure (abs.)	1.1 bar
Inlet connection	Small flange KF DN 25
Outlet connection	Silencer / G1/2"
Rated motor power	0.44 kW
Degree of protection	IP 40
Dimensions (L x W x H), approx.	554 x 260 x 359 mm
Weight, approx.	30.6 kg

TECHNICAL DATA**MD 12 NT VARIO**

Vacuum controller	CVC 3000
Number of heads / stages	8 / 3
Max. pumping speed	13.4 m ³ /h
Ultimate vacuum (abs.)	1.5 mbar
Max. back pressure (abs.)	1.1 bar
Inlet connection	Small flange KF DN 25
Outlet connection	Silencer / G1/2"
Vacuum sensor connection	Small flange KF DN 16, PTFE tubing connection 10/8 mm, hose nozzle DN 6/10 mm
Rated motor power	0.53 kW
Degree of protection	IP 40
Dimensions (L x W x H), approx.	554 x 260 x 420 mm
Weight, approx.	31.2 kg

ACCESSORIES MD 12 NT

Stainless steel tubing KF DN 25 (1000 mm: 673337)
Hose nozzle DN 15 mm / G1/2" (642472)
Small flange KF DN 16 / G1/2" (672101)

ACCESSORIES MD 12 NT VARIO

Stainless steel tubing KF DN 25 (1000 mm: 673337)
Hose nozzle DN 15 mm / G1/2" (642472)
Small flange KF DN 16 / G1/2" (672101)
Vent valve VBM-B (674217)

ITEMS SUPPLIED

Pump completely mounted, ready for use, with manual.

ORDERING INFORMATION**MD 12 NT**

230 V ~ 50-60 Hz	CEE	Ex*	743000
230 V ~ 50-60 Hz	CH, CN	Ex*	743001
230 V ~ 50-60 Hz	UK, IN	Ex*	743002
100-115 V ~ 50-60 Hz /			
120 V ~ 60 Hz	US		743003

ORDERING INFORMATION**MD 12 NT VARIO**

200-230 V ~ 50-60 Hz	CEE	Ex*	743100
100-120 V ~ 50-60 Hz	US		743103

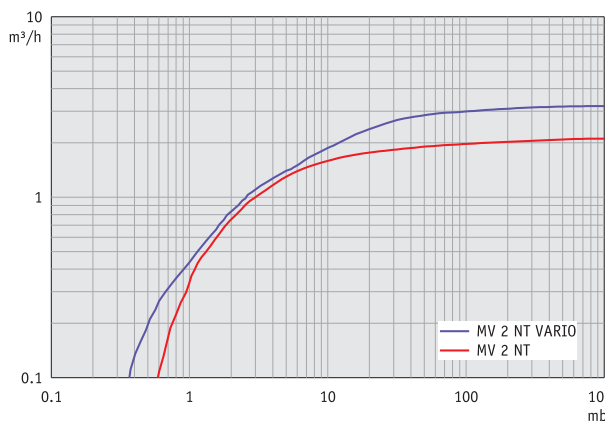
- ◆ contamination-free pumping and evacuation
- ◆ high flow rate even near ultimate vacuum
- ◆ VARIO® version for self-regulating vacuum optimization throughout the process
- ◆ CVC 3000 controller on VARIO® version offers easy operation with clear text menus
- ◆ excellent ultimate vacuum, and even better ultimate vacuum with VARIO® version in TURBO-MODE for use as backing pump for turbo pumps



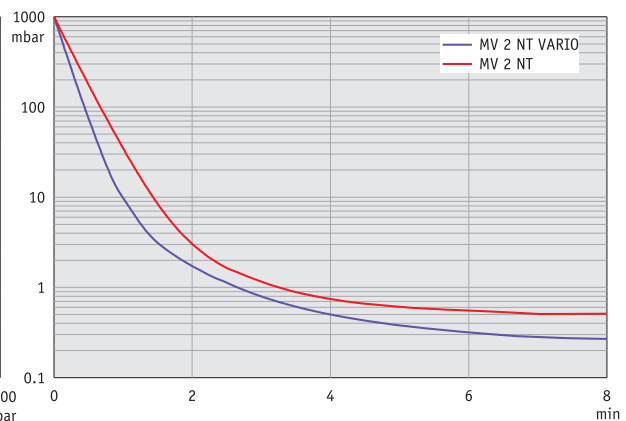
MV 2 NT - MV 2 NT VARIO

Four-stage diaphragm pumps are an excellent solution for continuous, oil-free pumping of gases when the need is to reach fractional millibar ultimate vacuum. All parts in contact with pumped vapors or gases are made of aluminum, stainless steel and carefully selected plastics suitable for a wide range of non-corrosive applications. The NT series pumps provide whisper quiet and ultra-low vibration operation, high leak-tightness and improved vacuum. The highly flexible, fabric-reinforced double diaphragm made of FKM offers extended operating life. The VARIO® version automatically adjusts the vacuum level to optimize the process conditions by continuously adapting the motor speed. The VARIO® system includes the VARIO® pump and the CVC 3000 vacuum controller with external gauge head. The demand-responsive motor speed control results in unsurpassed vacuum performance as well as extended lifetimes for service parts like diaphragms.

Pumping speed graph at 50 Hz



Pump down graph at 50 Hz
(10 l volume)



DIAPHRAGM PUMPS

TECHNICAL DATA**MV 2 NT**

Number of heads / stages	4 / 4
Max. pumping speed 50/60 Hz	2.2 / 2.4 m ³ /h
Ultimate vacuum (abs.)	0.5 mbar
Max. back pressure (abs.)	1.1 bar
Inlet connection	Small flange KF DN 16
Outlet connection	Silencer / G1/4"
Rated motor power	0.25 kW
Degree of protection	IP 40
Dimensions (L x W x H), approx.	325 x 239 x 198 mm
Weight, approx.	16.4 kg

TECHNICAL DATA**MV 2 NT VARIO**

Vacuum controller	CVC 3000
Number of heads / stages	4 / 4
Max. pumping speed	3.3 m ³ /h
Ultimate vacuum (abs.)	0.3 mbar
Max. back pressure (abs.)	1.1 bar
Inlet connection	Small flange KF DN 16
Outlet connection	Silencer / G1/4"
Vacuum sensor connection	Small flange KF DN 16, PTFE tubing connection 10/8 mm, hose nozzle DN 6/10 mm
Rated motor power	0.53 kW
Degree of protection	IP 20
Dimensions (L x W x H), approx.	325 x 235 x 245 mm
Weight, approx.	18.9 kg

ACCESSORIES MV 2 NT

Stainless steel tubing KF DN 16 (1000 mm: 673336)

ACCESSORIES MV 2 NT VARIOStainless steel tubing KF DN 16 (1000 mm: 673336)
Vent valve VBM-B (674217)**ITEMS SUPPLIED**

Pump completely mounted, ready for use, with manual.

ORDERING INFORMATION**MV 2 NT**

230 V ~ 50-60 Hz	CEE	Ex*	738000
230 V ~ 50-60 Hz	CH, CN	Ex*	738001
230 V ~ 50-60 Hz	UK, IN	Ex*	738002
100-115 V ~ 50-60 Hz /			
120 V ~ 50-60 Hz	US		738003

ORDERING INFORMATION**MV 2 NT VARIO**

200-230 V ~ 50-60 Hz	CEE	Ex*	738100
200-230 V ~ 50-60 Hz	CH, CN	Ex*	738101
100-120 V ~ 50-60 Hz	US		738103

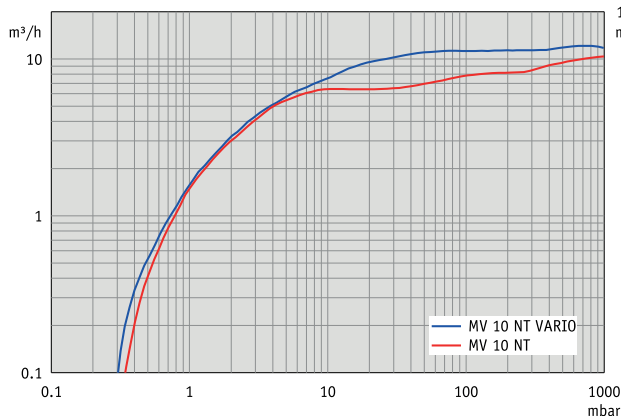
- ◆ contamination-free pumping and evacuation
- ◆ high performance even close to the excellent ultimate vacuum
- ◆ VARIO® with removable CVC 3000 vacuum controller, can be arranged flexibly, easily operated with clear text menus
- ◆ VARIO® version offers self-regulating vacuum optimization throughout the process
- ◆ TURBO-MODE in VARIO® version with even better ultimate vacuum especially for backing of turbo pumps



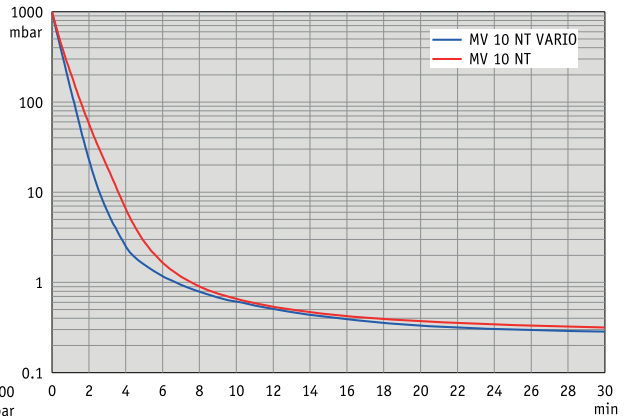
MV 10 NT - MV 10 NT VARIO

Four-stage diaphragm pumps are an excellent solution for continuous, oil-free pumping of gases when the need is to reach fractional millibar ultimate vacuum. All parts in contact with pumped vapors or gases are made of aluminum, stainless steel and carefully selected plastics suitable for a wide range of non-corrosive applications. These pumps provide the advantageous combination of high pumping speed with an extraordinarily good ultimate vacuum down to 0.5 mbar, and down to 0.3 mbar with the VARIO® version with self-adapting motor speed control. The highly flexible, fabric-reinforced double diaphragm made of FKM offers extended operating life. The VARIO® system consists of the VARIO® pump and the CVC 3000 vacuum controller with external gauge head. It provides precise vacuum control, higher pumping speed and improved ultimate vacuum. Eight-cylinder NT pumps feature quiet operation, with smooth and easy-to-clean surfaces.

Pumping speed graph at 50 Hz



Pump down graph at 50 Hz
(100 l volume)



DIAPHRAGM PUMPS

TECHNICAL DATA**MV 10 NT**

Number of heads / stages	8 / 4
Max. pumping speed 50/60 Hz	10.4 / 11.6 m ³ /h
Ultimate vacuum (abs.)	0.5 mbar
Max. back pressure (abs.)	1.1 bar
Inlet connection	Small flange KF DN 25
Outlet connection	Silencer / G1/2"
Rated motor power	0.44 kW
Degree of protection	IP 40
Dimensions (L x W x H), approx.	554 x 260 x 359 mm
Weight, approx.	30.6 kg

TECHNICAL DATA**MV 10 NT VARIO**

Vacuum controller	CVC 3000
Number of heads / stages	8 / 4
Max. pumping speed	12.1 m ³ /h
Ultimate vacuum (abs.)	0.3 mbar
Max. back pressure (abs.)	1.1 bar
Inlet connection	Small flange KF DN 25
Outlet connection	Silencer / G1/2"
Vacuum sensor connection	Small flange KF DN 16, PTFE tubing connection 10/8 mm, hose nozzle DN 6/10 mm
Rated motor power	0.53 kW
Degree of protection	IP 40
Dimensions (L x W x H), approx.	554 x 260 x 420 mm
Weight, approx.	31.2 kg

ACCESSORIES MV 10 NT

Stainless steel tubing KF DN 25 (1000 mm: 673337)
Hose nozzle DN 15 mm / G1/2" (642472)
Small flange KF DN 16 / G1/2" (672101)

ORDERING INFORMATION**MV 10 NT**

230 V ~ 50-60 Hz	CEE	Ex*	744000
100-115 V ~ 50-60 Hz /			
120 V ~ 60 Hz	US		744003

ACCESSORIES MV 10 NT VARIO

Stainless steel tubing KF DN 25 (1000 mm: 673337)
Hose nozzle DN 15 mm / G1/2" (642472)
Small flange KF DN 16 / G1/2" (672101)
Vent valve VBM-B (674217)

ORDERING INFORMATION**MV 10 NT VARIO**

200-230 V ~ 50-60 Hz	CEE	Ex*	744100
200-230 V ~ 50-60 Hz	CH, CN	Ex*	744101
200-230 V ~ 50-60 Hz	UK	Ex*	744102
100-120 V ~ 50-60 Hz	US		744103

ITEMS SUPPLIED

Pump completely mounted, ready for use, with manual.