

CHEMISTRY DIAPHRAGM PUMPS

SERIES OVERVIEW

Examples of use	Chemistry diaphragm pumps Basic pump for many systems	Chemistry vacuum systems without vacuum control	Chemistry pumping units vacuum control and solvent recovery	with two vacuum ports to operate two applications simultaneously
Down to 70 mbar Pumping of aggressive gases and vapors For low-boiling solvents Vacuum filtration	 ME 1C ▶ pg. 34  ME 2C NT ▶ pg. 36  ME 4C NT ▶ pg. 36  ME 8C NT ▶ pg. 38  ME 16C NT ▶ pg. 40	 ME 4C NT +2AK ▶ pg. 37  ME 8C NT +2AK ▶ pg. 39  ME 16C NT +EK ▶ pg. 41	 PC 3016 NT VARIO ▶ pg. 41	
Down to 7 mbar Concentration, drying For many common solvents Rotary evaporator Vacuum concentrators	 MZ 1C ▶ pg. 42  MZ 2C NT ▶ pg. 44  MZ 2C NT VARIO ▶ pg. 54	 MZ 2C NT +2AK ▶ pg. 46  MZ 2C NT +AK+EK ▶ pg. 47  MZ 2C NT +AK+M+D ▶ pg. 49	 PC 101 NT ▶ pg. 50  PC 510 NT ▶ pg. 52  PC 500 LAN NT ▶ pg. 51  PC 3002 VARIO ▶ pg. 54	 MZ 2C NT +AK SYNCHRO+EK ▶ pg. 48  PC 511 NT ▶ pg. 52  PC 520 NT ▶ pg. 53
Down to 1.5 mbar Concentration, drying For high-boiling solvents Rotary evaporator Vacuum concentrators	 MD 1C ▶ pg. 56  MD 4C NT ▶ pg. 62  MD 4C NT VARIO ▶ pg. 72  MD 12C NT ▶ pg. 74  MD 12C NT VARIO ▶ pg. 78	 MD 1C +AK+EK ▶ pg. 58  PC 3001 basic ▶ pg. 59  MD 4C NT +2AK ▶ pg. 64  MD 4C NT +AK+EK ▶ pg. 65  MD 12C NT +EK ▶ pg. 76  MD 12C NT +AK+EK ▶ pg. 76	 PC 3001 VARIO ^{pro} ▶ pg. 60  PC 201 NT ▶ pg. 67  PC 610 NT ▶ pg. 69  PC 600 LAN NT ▶ pg. 68  PC 3004 VARIO ▶ pg. 72  PC 3012 NT VARIO ▶ pg. 78	 MD 4C NT +AK SYNCHRO+EK ▶ pg. 66  PC 611 NT ▶ pg. 70  PC 620 NT ▶ pg. 71
Down to 0.6 mbar Concentration, drying For high-boiling solvents, evaporation at low temperatures Rotary evaporator Vacuum concentrators	 MV 10C NT ▶ pg. 82  MV 10C NT VARIO ▶ pg. 84	 MV 10C NT +EK ▶ pg. 82	 PC 3003 VARIO ▶ pg. 80  PC 3010 NT VARIO ▶ pg. 84	

CHEMISTRY DIAPHRAGM PUMP

ME 1C

■ Vacuum filtration is one of the most common applications used for sample preparation in chemistry, microbiology, waste water control and other analytical processes. The new ME 1C diaphragm pump offers a compact, high performance and easy-to-use solution which is perfect for single filtrations. This new development, based on the highly successful technology of the oil-free diaphragm pump MD 1C, provides a well-proven and extraordinarily long diaphragm life time. The functional, space saving and innovative design with easily accessible, top-mounted power switch ensures convenient and quick operation for day-to-day lab work. Robust PTFE diaphragms and valves provide optimal chemical resistance. A manual vacuum regulator valve with dial gauge for adjustment of pumping speed and ultimate vacuum is available as accessory.

PERFORMANCE FEATURES

- 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
- high chemical resistance



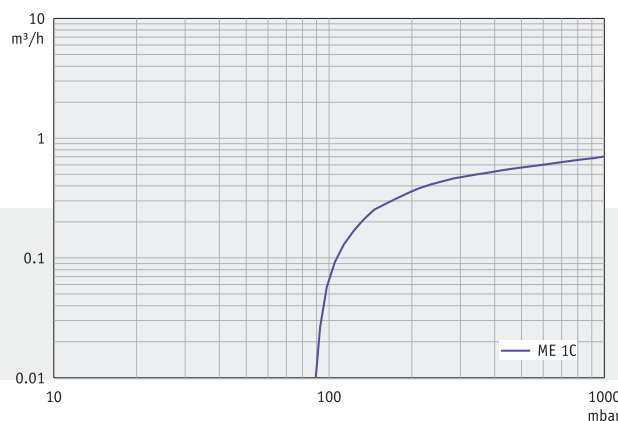
ME 1C
0.7 m³/h
100 mbar

**Chemistry vacuum
regulator valve unit
ME 1C**

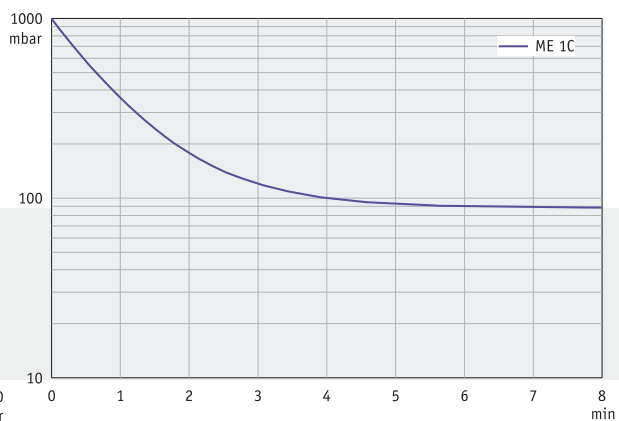


APPLICATIONS

One-stage diaphragm pumps are an excellent solution for continuous, oil-free pumping of gases and vapors with a modest vacuum requirement. In contrast to water-jet pumps they do not consume water and therefore do not produce any contaminated waste water in daily use. Typical applications for the ME 1C are filtrations and solid phase extractions with solvents. At a process vacuum of 100 mbar, 90% of the atmospheric pressure is available as the driving force for the application. If a certain pressure difference must not be exceeded, the pump can be equipped with an optional manual vacuum regulator valve with dial gauge. It enables continuous adjustment of pumping speed and ultimate vacuum.



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 50/60 Hz

Ultimate vacuum (abs.)

Max. back pressure (abs.)

Inlet connection

Outlet connection

Rated motor power

Dimensions (L x W x H), approx.

Weight, approx.

m³/h

mbar

bar

kW

mm

kg

ME 1C

1 / 1

0.7 / 0.85

100

1.1

Hose nozzle DN 10 mm

Hose nozzle DN 10 mm

0.04

247 x 121 x 145

5.0

ORDERING INFORMATION

230 V ~ 50-60 Hz	CEE	Ex*	721100
230 V ~ 50-60 Hz	CH, CN	Ex*	721101
230 V ~ 50-60 Hz	UK	Ex*	721102
100-120 V ~ 50-60 Hz	US		721103
100-120 V ~ 50-60 Hz /			
200-230 V ~ 50-60 Hz	IEC plug EN 60320	Ex*	721105**

With NRTL certification for Canada and the USA

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

*Please order power cable separately ▶ pg. 179

ACCESSORIES

Rubber vacuum tubing DN 8 mm (686001)

Rubber vacuum tubing DN 10 mm (686002)

Chemistry vacuum regulator valve unit for ME/MZ 1C (696843)

Silencer DN 10 mm (636588)

ITEMS SUPPLIED

Pump completely mounted, ready for use, with manual.

CHEMISTRY DIAPHRAGM PUMP

ME 2C NT, ME 4C NT AND ME 4C NT +2AK

- Chemistry-design diaphragm pumps are an excellent solution for continuous, oil-free pumping of corrosive gases and vapors. The one-stage construction provides the advantageous combination of high pumping speed and low ultimate vacuum down to 70 mbar. All major parts in contact with pumped media are made of chemically resistant fluoroplastics. Well-proven PTFE sandwich diaphragms increase reliability and extend operating life. The new NT-series features further improved performance data, higher tolerance for condensates and simplified maintenance. The ME 4C NT is also available as chemistry vacuum system ME 4C NT +2AK with inlet separator to protect the pump against particles and liquid droplets, plus outlet separator to collect condensate.

PERFORMANCE FEATURES

- outstanding chemical resistance
- high performance even at low vacuum levels
- whisper quiet
- low vibration
- long diaphragm life, maintenance-free drive system



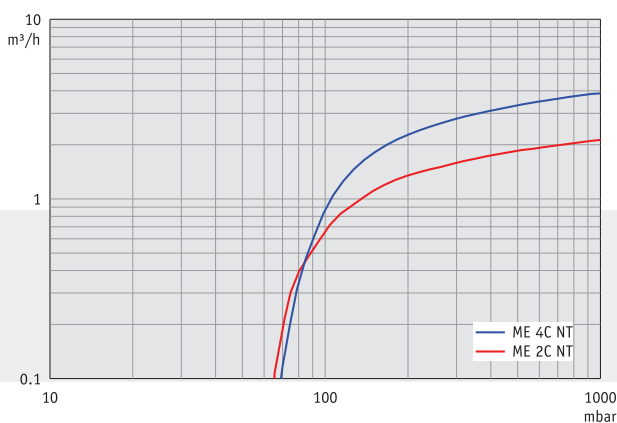
ME 2C NT
2.1 m³/h
70 mbar



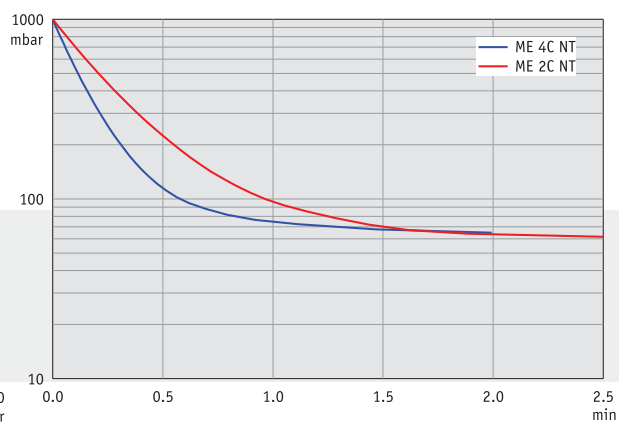
ME 4C NT
3.9 m³/h
70 mbar

APPLICATIONS

One-stage chemistry-design diaphragm pumps are an excellent choice for applications with corrosive gases and vapors which do not require very deep vacuum levels. They do not consume water and therefore do not produce any contaminated waste water. Typical applications are vacuum ovens, filtrations as well as concentration of solvents with low boiling points. The ME 4C NT is recommended for processes which require higher flow rates. The chemistry vacuum system ME 4C NT +2AK with inlet separator and condensate catchpot is an excellent choice for rugged applications and for collecting condensates at the exhaust of the pump.



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

		ME 2C NT	ME 4C NT
Number of heads / stages		1 / 1	2 / 1
Max. pumping speed 50/60 Hz	m³/h	2.1 / 2.4	3.9 / 4.3
Ultimate vacuum (abs.)	mbar	70	70
Max. back pressure (abs.)	bar	1.1	1.1
Inlet connection		Hose nozzle DN 10 mm	Hose nozzle DN 10 mm
Outlet connection		Hose nozzle DN 10 mm	Hose nozzle DN 10 mm
Rated motor power	kW	0.18	0.18
Degree of protection		IP 40	IP 40
Dimensions (L x W x H), approx.	mm	243 x 211 x 198	254 x 243 x 198
Weight, approx.	kg	10.2	11.1

ORDERING INFORMATION ME 2C NT

230 V ~ 50-60 Hz	CEE	Ex*	730100
230 V ~ 50-60 Hz	UK	Ex*	730102
100-115 V ~ 50-60 Hz / 120 V ~ 60 Hz	US		730103
100-115 V ~ 50-60 Hz / 120 V ~ 60 Hz			
200-230 V ~ 50-60 Hz	IEC plug EN 60320	Ex*	730105**

With NRTL certification for Canada and the USA

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

**Please order power cable separately ▶ pg. 179

ORDERING INFORMATION ME 4C NT

230 V ~ 50-60 Hz	CEE	Ex*	731200
230 V ~ 50-60 Hz	CH, CN	Ex*	731201
230 V ~ 50-60 Hz	UK	Ex*	731202
100-115 V ~ 50-60 Hz /			
120 V ~ 60 Hz	US		731203

With NRTL certification for Canada and the USA

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

ORDERING INFORMATION ME 4C NT +2AK

100-115 V ~ 50-60 Hz / 120 V ~ 60 Hz			
200-230 V ~ 50-60 Hz	IEC plug EN 60320	Ex*	2614080**

With NRTL certification for Canada and the USA

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**Please order power cable separately ▶ pg. 179

ACCESSORIES

Rubber vacuum tubing DN 10 mm (686002)

VACUU-LAN® Mini-Network (2614455)

ITEMS SUPPLIED

Pump completely mounted, ready for use, with manual.

CHEMISTRY DIAPHRAGM PUMP

ME 8C NT, ME 8C NT +2AK AND ME 16C NT

■ Chemistry diaphragm pumps of the NT design are an excellent solution for continuous, oil-free pumping of corrosive gases and vapors. The one-stage construction 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 chemically resistant fluoroplastics. Well-proven PTFE sandwich diaphragms increase reliability and extend operating life. The chemistry vacuum system ME 8C NT +2AK with inlet separator to protect the pump against particles and liquid droplets and outlet separator to collect condensate is a well-proven choice for demanding applications. The eight-cylinder pump ME 16C NT provides a particularly high performance together with a compact design. Accessories such as inlet separator (AK) for protection of the pump and exhaust vapor condenser (EK) for solvent recovery can be mounted on this pump later, if the need arises. Eight-cylinder NT pumps feature quiet operation, smooth and easy to clean surfaces.

PERFORMANCE FEATURES

- outstanding chemical resistance and superior vapor tolerance
- very high pumping speed even at low vacuum levels
- compact design
- whisper quiet and very low vibration
- long diaphragm life, maintenance-free drive system



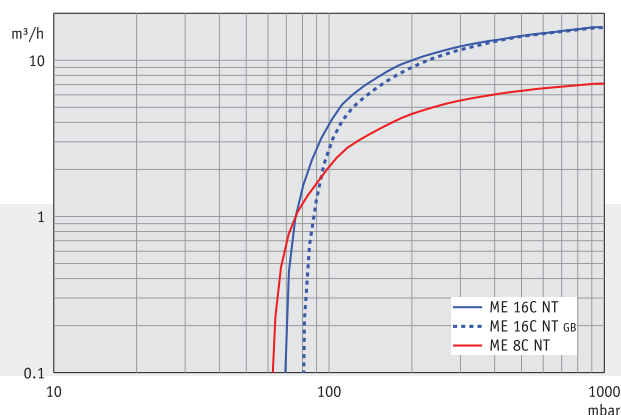
ME 8C NT
7.1 m³/h
70 mbar



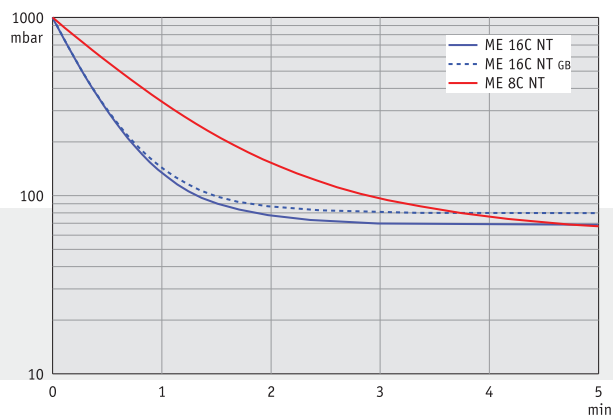
ME 16C NT
16.3 m³/h
70 mbar

APPLICATIONS

Large one-stage chemistry diaphragm pumps are an excellent choice for pumping large amounts of gases and vapors. They do not consume water and therefore do not produce any contaminated waste water. Typical applications are filtration networks, vacuum ovens and in general evaporation of low boiling solvents. The pumps ME 8C NT and ME 16C NT are an excellent choice for processes with large gas flow at high process pressures. The pump ME 16C NT can easily be upgraded with accessories like inlet separator (AK) for challenging applications and an exhaust vapor condenser (EK) for solvent recovery.



Pumping speed graph at 50 Hz
with/without gas ballast



Pump down graph at 50 Hz
with/without gas ballast
(100 l volume)

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

TECHNICAL DATA		ME 8C NT	ME 8C NT +2AK	ME 16C NT
Number of heads / stages		4 / 1	4 / 1	8 / 1
Max. pumping speed 50/60 Hz	m³/h	7.1 / 7.8	7.1 / 7.8	16.3 / 18.4
Ultimate vacuum (abs.)	mbar	70	70	70
Ultim. vac. (abs.) with gas ballast	mbar	-	-	100
Max. back pressure (abs.)	bar	1.1	1.1	1.1
Inlet connection		Hose nozzle DN 10 mm	Hose nozzle DN 10 mm	Small flange KF DN 25
Outlet connection		Hose nozzle DN 10 mm	Hose nozzle DN 10 mm	Hose nozzle DN 15 mm
Rated motor power	kW	0.25	0.25	0.44
Degree of protection		IP 40	IP 40	IP 40
Dimensions (L x W x H), approx.	mm	325 x 243 x 198	319 x 243 x 374	531 x 260 x 359
Weight, approx.	kg	14.3	16.7	28.1

ORDERING INFORMATION ME 8C NT

230 V ~ 50-60 Hz	CEE	Ex*	734200
230 V ~ 50-60 Hz	CH, CN	Ex*	734201
230 V ~ 50-60 Hz	UK	Ex*	734202
120 V ~ 60 Hz	US		734203
100 V ~ 50-60 Hz	US		734206

With NRTL certification for Canada and the USA

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

ORDERING INFORMATION ME 8C NT +2AK

100-115 V ~ 50-60 Hz / 120 V ~ 60 Hz			
200-230 V ~ 50-60 Hz	IEC plug EN 60320	Ex* 734405**	

With NRTL certification for Canada and the USA

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

**Please order power cable separately ▶ pg. 179

AVAILABLE FROM JUNE 2012

ORDERING INFORMATION ME 16C NT

230 V ~ 50-60 Hz	CEE	Ex*	741300
230 V ~ 50-60 Hz	UK	Ex*	741302
100-115 V ~ 50-60 Hz /			
120 V ~ 60 Hz	US		741303

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

ACCESSORIES ME 8C NT and ME 8C NT +2AK

Rubber vacuum tubing DN 10 mm (686002)

ACCESSORIES ME 16C NT

PTFE tubing KF DN 25 (1000 mm: 686033)

Inlet separator KF DN 25 (699979)

Emission condenser kit for NT pump models (699948)

ITEMS SUPPLIED

Pump completely mounted, ready for use, with manual.

CHEMISTRY DIAPHRAGM PUMP

ME 16C NT +EK, ME 16C NT VARIO AND PC 3016 NT VARIO

■ These powerful pumps feature exceptionally high pumping speed. Upgraded with an outlet exhaust vapor condenser (EK), the ME 16C NT +EK provides an environmentally friendly system with efficient solvent recovery. VARIO® pumping units provide precise vacuum control by adjusting of the diaphragm pump's motor speed. They feature fully automatic evaporation control at the push of a button. The PC 3016 NT VARIO pumping unit is a proven concept for evaporations with large amounts of solvents. The inlet separator (AK) retains particles and liquid droplets, the waste vapor condenser at the outlet (EK) is highly efficient and compact. The condenser enables near-100-percent solvent recovery, efficient recycling, and active protection of the environment. Eight-cylinder NT pumps features quiet operation with smooth, easy-to-clean surfaces.

PERFORMANCE FEATURES

- VARIO®: Automatic adjustment of the vacuum level throughout the process for high process reproducibility and unattended operation
- very high pumping speed even at low vacuum levels
- systems +EK and PC 3016 NT VARIO: excellent environmental friendliness due to efficient solvent recovery
- VARIO®: short process times due to zero-fluctuation (hysteresis-free) vacuum control, even for large amounts of vapor
- VARIO®: easily operated CVC 3000 vacuum controller with clear text menus and integrated venting valve



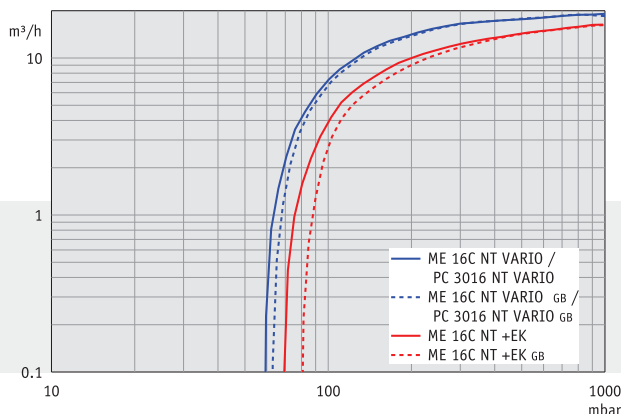
ME 16C NT +EK
16.3 m³/h
70 mbar

ME 16C NT VARIO
19.3 m³/h
70 mbar

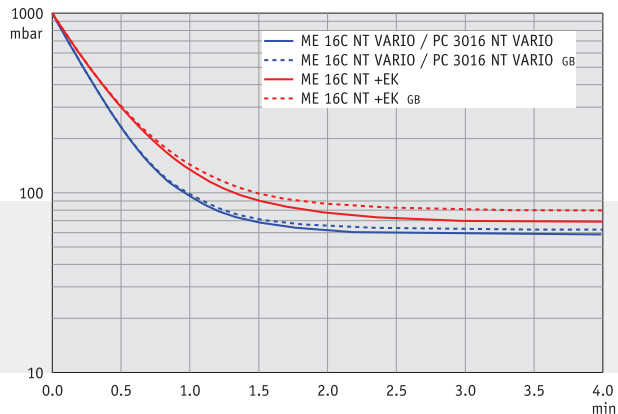


APPLICATIONS

The extraordinarily high pumping speed reduces the process time significantly and permits the usage of these pumps to support large vacuum networks, or in life science labs where high gas throughput is needed, but only a modest vacuum level. VARIO® provides hysteresis-free vacuum control. Typical applications with such characteristics include drying and evaporation processes with low boiling solvents. Evaporation processes can be run fully automatically and with short process times and high sensitivity at the same time. The VARIO® control ensures high process reliability by preventing superheating and foaming. The inlet separator of the PC 3016 NT VARIO® makes this pump well-suited to rough operating conditions and enables efficient solvent recovery. These accessories such as the optional separator at the inlet (AK) for pump protection and the exhaust waste vapor condenser (EK), can be mounted to the pumps later, if the need arises.



Pumping speed graph at 50 Hz
with/without gas ballast



Pump down graph at 50 Hz
with/without gas ballast
(100 l volume)

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

TECHNICAL DATA		ME 16C NT +EK	ME 16C NT VARIO	PC 3016 NT VARIO
Vacuum controller		-	CVC 3000	CVC 3000
Number of heads / stages		8 / 1	8 / 1	8 / 1
Max. pumping speed 50/60 Hz	m³/h	16.3 / 18.4	19.3	19.3
Ultimate vacuum (abs.)	mbar	70	70	70
Ultim. vac. (abs.) with gas ballast	mbar	100	100	100
Max. back pressure (abs.)	bar	1.1	1.1	1.1
Inlet connection		Small flange KF DN 25	Small flange KF DN 25	Small flange KF DN 25 / hose nozzle DN 15 mm
Outlet connection		Hose nozzle DN 10 mm	Hose nozzle DN 15 mm	Hose nozzle DN 10 mm
Rated motor power	kW	0.44	0.53	0.53
Degree of protection		IP 40	IP 40	IP 40
Dimensions (L x W x H), approx.	mm	528 x 387 x 395	531 x 260 x 420	616 x 387 x 420
Weight, approx.	kg	29.1	28.1	29.7

AVAILABLE FROM JUNE 2012

ORDERING INFORMATION ME 16C NT +EK

230 V ~ 50-60 Hz	CEE	Ex*	741500
100-115 V ~ 50-60 Hz / 120 V ~ 60 Hz	US		741503

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

ORDERING INFORMATION ME 16C NT VARIO

200-230 V ~ 50-60 Hz	CEE	Ex*	741700
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Ex*: ATEX: II 3G IIC T3 X, Internal Atm. only

ORDERING INFORMATION PC 3016 NT VARIO

200-230 V ~ 50-60 Hz	CEE	Ex*	741800
100-120 V ~ 50-60 Hz	US		741803

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

ACCESSORIES ME 16C NT +EK

PTFE tubing KF DN 25 (1000 mm: 686033)
Rubber vacuum tubing DN 10 mm (686002)
Inlet separator KF DN 25 (699979)

ACCESSORIES PC 3016 NT VARIO

PTFE tubing KF DN 25 (1000 mm: 686033)
Vent valve VBM-B (674217)
Rubber vacuum tubing DN 10 mm (686002)

ACCESSORIES ME 16C NT VARIO

PTFE tubing KF DN 25 (1000 mm: 686033)
Inlet separator KF DN 25 (699979)
Emission condenser kit for NT pump models (699948)
Rubber vacuum tubing DN 15 mm (686003)
Vent valve VBM-B (674217)

ITEMS SUPPLIED

Pumping unit completely mounted, ready for use, with manual

CHEMISTRY DIAPHRAGM PUMP

MZ 1C

■ Chemistry-design diaphragm pumps are an excellent solution for continuous, oil-free pumping of corrosive gases and vapors. The two-stage construction provides the advantageous combination of high pumping speed and low ultimate vacuum. All major parts in contact with pumped media are made of chemically resistant fluoroplastics. Well-proven PTFE-sandwich diaphragms increase reliability and extend operating life. The MZ 1C pump is equipped with a gas ballast valve for continuous condensate purge increasing the pumping capability of condensable vapors. It features slim design for space-saving installation and good vacuum performance. A manual vacuum regulator valve with dial gauge for adjustment of pumping speed and ultimate vacuum is available as accessory.

PERFORMANCE FEATURES

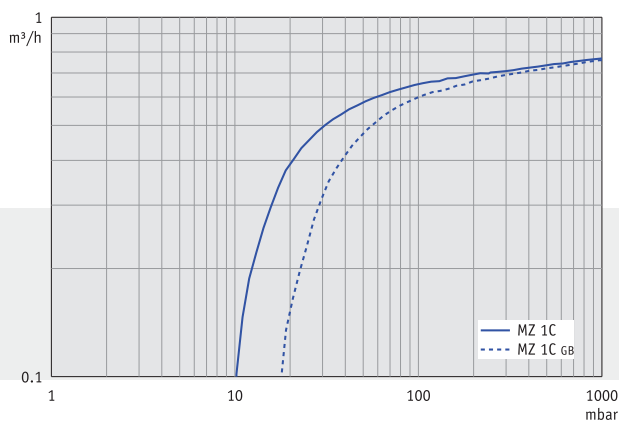
- outstanding chemical resistance and superior vapor tolerance
- convenient, quick and simple to use due to the new top mounted power switch
- optimized vacuum even with gas ballast for continuous purge
- whisper quiet and very low vibration
- maintenance-free drive system and proven long diaphragm life



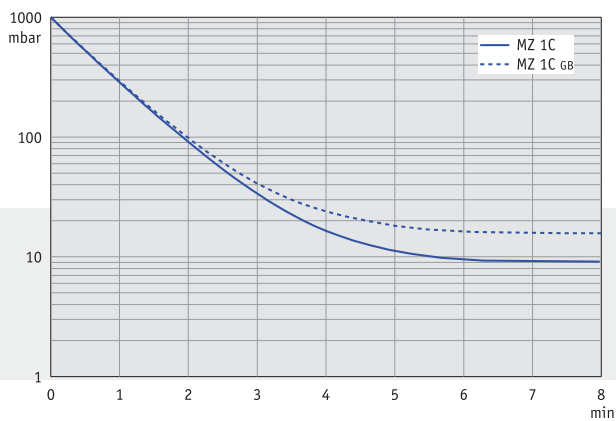
MZ 1C
0.75 m³/h
12 mbar

APPLICATIONS

Two-stage chemistry-design diaphragm pumps are an excellent choice for continuous, oil-free pumping of gases at medium vacuum requirements. In contrast to water jet pumps, they do not consume water and therefore do not produce any contaminated waste water. Typical applications are rotary evaporators, gel dryers, filtrations and many other lab applications. The MZ 1C is a powerful pump for smaller vacuum apparatus enabling continuous pumping of solvent vapors. It's a compact, stand alone pump with low ultimate vacuum. If the process requires atmospheric condensation of pumped vapors or electronic vacuum control, we recommend the pump families based on the MZ 2C NT or MD 1C.



Pumping speed graph at 50 Hz
with/without gas ballast



Pump down graph at 50 Hz
with/without gas ballast
(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 50/60 Hz

m³/h

Ultimate vacuum (abs.)

mbar

Ultim. vac. (abs.) with gas ballast

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

MZ 1C

2 / 2

0.75 / 0.9

12

20

1.1

Hose nozzle DN 10 mm

Hose nozzle DN 10 mm

0.06

IP 40

312 x 121 x 170

6.7

ORDERING INFORMATION

230 V ~ 50-60 Hz	CEE	Ex*	724100
230 V ~ 50-60 Hz	UK	Ex*	724102
230 V ~ 50-60 Hz	CN	Ex*	724106
100-120 V ~ 50-60 Hz	US		724103
100-120 V ~ 50-60 Hz			
200-230 V ~ 50-60 Hz	IEC plug EN 60320	Ex*	724105**

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**Please order power cable separately ▶ pg. 179

ACCESSORIES

Rubber vacuum tubing DN 10 mm (686002)

Chemistry vacuum regulator valve unit for ME/MZ 1C (696843)

ITEMS SUPPLIED

Pump completely mounted, ready for use, with manual.

CHEMISTRY DIAPHRAGM PUMP

MZ 2C NT

■ Chemistry-design diaphragm pumps are an excellent solution for continuous, oil-free pumping of corrosive gases and vapors. The two-stage construction provides the advantageous combination of high pumping speed and low ultimate vacuum. All parts in contact with pumped media are made of chemically resistant fluoroplastics. Well-proven PTFE sandwich diaphragms increase reliability and extend operating life. The MZ 2C NT pump is equipped with a gas ballast valve for continuous condensate purge increasing the pumping capability of condensable vapors. This pump is our most popular chemistry diaphragm pump, and is the heart of a family of VACUUBRAND pumping systems. The new NT-series features further improved performance data and superior vapor tolerance.

PERFORMANCE FEATURES

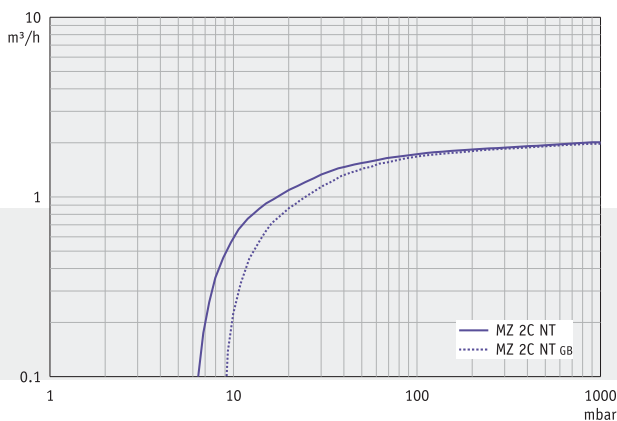
- outstanding chemical resistance and superior vapor tolerance
- high performance even at low vacuum levels
- optimized vacuum even with gas ballast
- whisper quiet and low vibration
- long diaphragm life, maintenance-free drive system



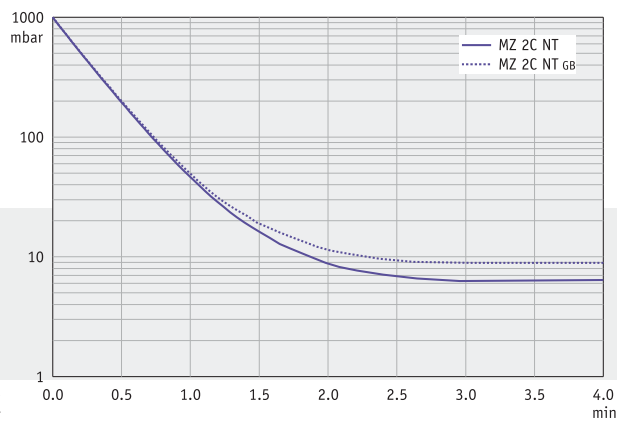
MZ 2C NT
2.0 m³/h
7 mbar

APPLICATIONS

Two-stage chemistry-design diaphragm pumps are an excellent choice for applications with corrosive gases and vapors with medium vacuum requirements. They do not consume water and therefore do not produce any contaminated waste water. The media contacted materials made of chemically resistant fluoroplastics open a wide range of applications in chemistry and pharmaceuticals. The robust design provides very good durability and long service intervals even in demanding chemistry applications. Typical usages are vacuum generation for rotary evaporators, vacuum concentrators, gel dryers, vacuum ovens and many other laboratory applications. The MZ 2C NT is the powerful basic pump for a complete family of well established and reliable chemistry vacuum systems and pumping units.



Pumping speed graph at 50 Hz
with/without gas ballast



Pump down graph at 50 Hz
with/without gas ballast
(10 l volume)

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

TECHNICAL DATA

			MZ 2C NT
Number of heads / stages			2 / 2
Max. pumping speed 50/60 Hz	m³/h		2.0 / 2.3
Ultimate vacuum (abs.)	mbar		7
Ultim. vac. (abs.) with gas ballast	mbar		12
Max. back pressure (abs.)	bar		1.1
Inlet connection			Hose nozzle DN 10 mm
Outlet connection			Hose nozzle DN 10 mm
Rated motor power	kW		0.18
Degree of protection			IP 40
Dimensions (L x W x H), approx.	mm		243 x 243 x 198
Weight, approx.	kg		11.1

ORDERING INFORMATION

230 V ~ 50-60 Hz		CEE	Ex*	732300
230 V ~ 50-60 Hz		CH, CN	Ex*	732301
230 V ~ 50-60 Hz		UK	Ex*	732302
100-115 V ~ 50-60 Hz / 120 V ~ 60 Hz				
200-230 V ~ 50-60 Hz	Inlet: Small flange KF DN 16	IEC plug EN 60320	Ex*	732345**
100-115 V ~ 50-60 Hz				
120 V ~ 60 Hz	US			732303

With NRTL certification for Canada and the USA

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

**Please order power cable separately ▶ pg. 179

ACCESSORIES

Rubber vacuum tubing DN 10 mm (686002)

ITEMS SUPPLIED

Pump completely mounted, ready for use, with manual.

CHEMISTRY VACUUM SYSTEM

MZ 2C NT +2AK

■ MZ 2C NT chemistry diaphragm pump, with inlet separator and outlet catchpot

This chemistry vacuum system has a wide range of applications like evacuation, evaporation and pumping of gases and vapors in chemical, biological and pharmaceutical laboratories where there are no requirements for condensation of solvent vapors at the outlet. Typical applications are vacuum concentrators, gel dryers and filtration. The separator at the inlet (AK), made of glass with protective coating, retains particles and liquid droplets. The separator at the outlet collects condensate, avoids condensate backflow towards the pump, and reinforces the whisper-quiet operation of the pump.

PERFORMANCE FEATURES

- outstanding chemical resistance and superior vapor tolerance
- high performance even at low vacuum levels
- optimized vacuum even with gas ballast for condensate purge
- whisper quiet and very low vibration
- separators at inlet and outlet to collect condensates



MZ 2C NT +2AK
2.0 m³/h
7 mbar

TECHNICAL DATA same as MZ 2C NT, except

Inlet connection		Hose nozzle DN 10 mm
Outlet connection		Hose nozzle DN 10 mm
Dimensions (L x W x H), approx.	mm	319 x 243 x 309
Weight, approx.	kg	13.6

ORDERING INFORMATION

230 V ~ 50-60 Hz	CEE	Ex*	732500
230 V ~ 50-60 Hz	CH, CN	Ex*	732501
230 V ~ 50-60 Hz	UK	Ex*	732502
100-115 V ~ 50-60 Hz			
120 V ~ 60 Hz	US		732503

With NRTL certification for Canada and the USA

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

ACCESSORIES

Rubber vacuum tubing DN 10 mm (686002)

ITEMS SUPPLIED

Pumping unit completely mounted, ready for use, with manual.

CHEMISTRY VACUUM SYSTEM

MZ 2C NT +AK+EK

■ MZ 2C NT pump with pump protection and vapor capture components

This chemistry vacuum system has a wide range of applications like evacuation, evaporation and pumping of gases and vapors in chemical, biological and pharmaceutical laboratories. Typical applications are rotary evaporators, vacuum concentrators and vacuum drying ovens. The separator at the inlet (AK), made of glass with protective coating, retains particles and liquid droplets. The waste vapor condenser at the outlet (EK) is highly efficient and compact. The condenser enables near-100-percent solvent recovery, efficient recycling, and active protection of the environment.

PERFORMANCE FEATURES

- outstanding chemical resistance and superior vapor tolerance
- high performance even at low vacuum levels
- optimized vacuum even with gas ballast for condensate purge
- whisper quiet and very low vibration
- excellent environmental friendliness due to efficient solvent recovery



MZ 2C NT +AK+EK
2.0 m³/h
7 mbar

TECHNICAL DATA same as MZ 2C NT, except

Inlet connection		Hose nozzle DN 10 mm
Outlet connection		Hose nozzle DN 10 mm
Coolant connection		2 x hose nozzle DN 6-8 mm
Dimensions (L x W x H), approx.	mm	326 x 243 x 402
Weight, approx.	kg	14.2

ORDERING INFORMATION

230 V ~ 50-60 Hz	CEE	Ex*	732600
230 V ~ 50-60 Hz	CH, CN	Ex*	732601
230 V ~ 50-60 Hz	UK	Ex*	732602
100-115 V ~ 50-60 Hz / 120 V ~ 60 Hz			
200-230 V ~ 50-60 Hz	Inlet: Small flange KF DN 16	IEC plug EN 60320	Ex* 732615**
100-115 V ~ 50-60 Hz			
120 V ~ 60 Hz	US		732603

With NRTL certification for Canada and the USA

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

**Please order power cable separately ▶ pg. 179

ACCESSORIES

Rubber vacuum tubing DN 10 mm (686002)

ITEMS SUPPLIED

Pumping unit completely mounted, ready for use, with manual.

CHEMISTRY VACUUM SYSTEM

MZ 2C NT +AK SYNCHRO+EK

■ MZ 2C NT pump with full vapor capture and ports to operate two applications

This chemistry vacuum system provides the simultaneous operation of two processes with only one pump. Typical applications are rotary evaporators, vacuum concentrators and vacuum drying ovens. Each vacuum connection is provided with a manual flow control valve to regulate the effective pumping speed. The separator at the inlet (AK), made of glass with a protective coating, retains particles and liquid droplets. The waste vapor condenser at the outlet (EK) is highly efficient and compact. The condenser enables near-100-percent solvent recovery, efficient recycling and active protection of the environment.

PERFORMANCE FEATURES

- outstanding chemical resistance and superior vapor tolerance
- high performance even at low vacuum levels
- optimized vacuum even with gas ballast for condensate purge
- simultaneous operation of two independent vacuum applications, with reliable check valves to prevent interference between applications
- excellent environmental friendliness due to efficient solvent recovery



MZ 2C NT +AK SYNCHRO+EK
2.0 m³/h
7 mbar

TECHNICAL DATA same as MZ 2C NT, except

Inlet connection		2 x hose nozzle DN 10 mm
Outlet connection		Hose nozzle DN 10 mm
Coolant connection		2 x hose nozzle DN 6-8 mm
Dimensions (L x W x H), approx.	mm	326 x 248 x 402
Weight, approx.	kg	14.5

ORDERING INFORMATION

230 V ~ 50-60 Hz	CEE	Ex*	732800
230 V ~ 50-60 Hz	CH, CN	Ex*	732801
100-115 V ~ 50-60 Hz			
120 V ~ 60 Hz	US		732803
With NRTL certification for Canada and the USA			
Ex*: ATEX: II 3G IIC T3 X, Internal Atm. only			

ACCESSORIES

Rubber vacuum tubing DN 10 mm (686002)
Kit analog gauge for NT SYNCHRO (699907)

ITEMS SUPPLIED

Pumping unit completely mounted, ready for use, with manual.

CHEMISTRY VACUUM SYSTEM

MZ 2C NT +AK+M+D

■ MZ 2C NT chemistry-diaphragm pump with pump protection and manual control

This chemistry vacuum system has a wide range of applications like evacuation, evaporation and pumping of gases and vapors in chemical, biological and pharmaceutical laboratories where there are no requirements for condensation of solvent vapors at the outlet. The manual flow control valve regulates the effective pumping speed at the vacuum connection, the vacuum manometer offers an analog vacuum display. This system is well proven for filtration. The separator at the inlet (AK), made of glass with a protective coating, retains particles and liquid droplets.

PERFORMANCE FEATURES

- outstanding chemical resistance and superior vapor tolerance
- high performance even at low vacuum levels
- optimized vacuum even with gas ballast for condensate purge
- whisper quiet and very low vibration
- manual vacuum control, analog vacuum display



MZ 2C NT +AK+M+D
2.0 m³/h
7 mbar

TECHNICAL DATA same as MZ 2C NT, except

Inlet connection		Hose nozzle DN 10 mm
Outlet connection		Hose nozzle DN 10 mm
Dimensions (L x W x H), approx.	mm	310 x 243 x 313
Weight, approx.	kg	13.4

ORDERING INFORMATION

230 V ~ 50-60 Hz	CEE	Ex*	732700
With NRTL certification for Canada and the USA			
Ex*: ATEX: II 3G IIC T3 X, Internal Atm. only			

ACCESSORIES

Rubber vacuum tubing DN 10 mm (686002)

ITEMS SUPPLIED

Pumping unit completely mounted, ready for use, with manual.

CHEMISTRY PUMPING UNIT

PC 101 NT

■ Chemistry pumping unit with vacuum dial gauge, manual flow control and vapor capture

This chemistry pumping unit has a wide range of applications like evacuation, evaporation and pumping of gases and vapors in chemical, biological and pharmaceutical laboratories. Typical applications are rotary evaporators and vacuum drying ovens. The manual flow control valve regulates the effective pumping speed at the vacuum connection, the vacuum manometer offers an analog vacuum display. The waste vapor condenser at the outlet (EK) is highly efficient and compact. The condenser enables near-100-percent solvent recovery, efficient recycling and active protection of the environment.

PERFORMANCE FEATURES

- outstanding chemical resistance and superior vapor tolerance
- high performance even at low vacuum levels
- optimized vacuum even with gas ballast for condensate purge
- excellent environmental friendliness due to efficient solvent recovery
- manual vacuum control, analog vacuum display



PC 101 NT
2.0 m³/h
7 mbar

TECHNICAL DATA same as MZ 2C NT, except

Inlet connection		Hose nozzle DN 10 mm
Outlet connection		Hose nozzle DN 10 mm
Coolant connection		2 x hose nozzle DN 6-8 mm
Dimensions (L x W x H), approx.	mm	326 x 243 x 402
Weight, approx.	kg	14.5

ORDERING INFORMATION

230 V ~ 50-60 Hz	CEE	Ex*	733000
230 V ~ 50-60 Hz	UK	Ex*	733002
100-115 V ~ 50-60 Hz			
120 V ~ 60 Hz	US		733003
With NRTL certification for Canada and the USA			
Ex*: ATEX: II 3G IIC T3 X, Internal Atm. only			

ACCESSORIES

Rubber vacuum tubing DN 10 mm (686002)

ITEMS SUPPLIED

Pumping unit completely mounted, ready for use, with manual.

CHEMISTRY PUMPING UNIT

PC 500 LAN NT

- This ready-to-connect chemistry pumping unit is optimized for automatic on-demand vacuum generation in local area vacuum networks, e.g. VACUU·LAN®. The pump turns on and off automatically, according to the actual vacuum demand. The on/off switch points can be set independently. This chemistry vacuum pumping unit is frequently used for medium-sized vacuum applications at multiple workstations in laboratories. The pumping unit includes a vacuum controller VNC 2 with digital vacuum display and connections for a cooling water valve as well as for readout of a liquid level detection sensor for the catchpot at the exhaust waste vapor condenser.

PERFORMANCE FEATURES

- optimized vacuum even with gas ballast
- energy-efficient and low maintenance costs
- optional coolant valve to minimize cooling water consumption
- optional liquid level sensor for catchpot
- excellent environmental friendliness due to efficient solvent recovery



PC 500 LAN NT
2.0 m³/h
7 mbar

TECHNICAL DATA same as MZ 2C NT, except

Vacuum controller		VNC 2
Inlet connection		PTFE tubing connection 10/8 mm
Outlet connection		Hose nozzle DN 10 mm
Coolant connection		2 x hose nozzle DN 6-8 mm
Dimensions (L x W x H), approx.	mm	408 x 264 x 402
Weight, approx.	kg	15.3

ORDERING INFORMATION

230 V ~ 50-60 Hz	CEE	Ex*	733400
230 V ~ 50-60 Hz	CH, CN	Ex*	733401
100-120 V ~ 50-60 Hz	US		733403

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

ACCESSORIES

Rubber vacuum tubing DN 10 mm (686002)
PTFE tubing DN 10/8 mm (638644)
Coolant valve VKW-B (674220)
Vent valve VBM-B (674217)
Liquid level sensor (699908)

ITEMS SUPPLIED

Pumping unit completely mounted, ready for use, with manual.

CHEMISTRY PUMPING UNIT

PC 510 NT AND PC 511 NT

■ Chemistry pumping units with one (PC 510 NT) or two (PC 511 NT) inlet ports with vacuum control

Chemistry pumping units of these series are well-proven for vacuum generation and control for many evaporation processes. The popular two-stage MZ 2C NT chemistry diaphragm pump is the heart of these pumping units, frequently used for medium-sized vacuum applications involving "common" solvents. The pumping units are equipped with a CVC 3000 vacuum controller with a solenoid valve for electronic vacuum control. The exhaust vapor condenser is outstandingly efficient and compact. It provides near-100-percent recovery of solvents, for economical recycling and environmental protection. The PC 511 NT is equipped with an additional manually controlled vacuum port. Check valves help to protect against cross-contamination and interference, permitting simultaneous operation of two vacuum applications with one pump.

PERFORMANCE FEATURES

- optimized vacuum even with gas ballast
- easily operated vacuum controller CVC 3000 with clear text menus, with integrated venting valve
- chemistry design flow control valve with large cross section for unrestricted performance
- PC 511 NT allows simultaneous operation of two independent vacuum applications, with reliable check valves to prevent interference between systems
- excellent environmental friendliness due to efficient solvent recovery



PC 511 NT
2.0 m³/h
7 mbar

TECHNICAL DATA same as MZ 2C NT, except

Vacuum controller	CVC 3000
Inlet connection	Hose nozzle DN 10 mm / 2 x hose nozzle DN 10 mm
Outlet connection	Hose nozzle DN 10 mm
Coolant connection	2 x hose nozzle DN 6-8 mm
Dimensions (L x W x H), approx.	mm 435 x 243 x 444
Weight, approx.	kg 16.9

ORDERING INFORMATION PC 510 NT

230 V ~ 50-60 Hz	Ex*	CEE	733100
230 V ~ 50-60 Hz	Ex*	CH, CN	733101
230 V ~ 50-60 Hz	Ex*	UK	733102
100-115 V ~ 50-60 Hz /			
120 V ~ 60 Hz		US	733103

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

ORDERING INFORMATION PC 511 NT

230 V ~ 50-60 Hz	Ex*	CEE	733200
230 V ~ 50-60 Hz	Ex*	CH, CN	733201
230 V ~ 50-60 Hz	Ex*	UK	733202
100-115 V ~ 50-60 Hz /			
120 V ~ 60 Hz		US	733203

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

ACCESSORIES

Rubber vacuum tubing DN 10 mm (686002)
Coolant valve VKW-B (674220)
Vent valve VBM-B (674217)
Liquid level sensor (699908)

ITEMS SUPPLIED

Pumping unit completely mounted, ready for use, with manual.

Further information at www.vacuubrand.com

CHEMISTRY PUMPING UNIT

PC 520 NT

■ Chemistry pumping unit with two electronically controlled inlet ports

This chemistry vacuum pumping unit is an economic space-saving solution for simultaneous operation of two independent vacuum applications with one single pump. Each vacuum port is equipped with a CVC 3000 vacuum controller with solenoid valve for electronic vacuum control. Both vacuum ports have integrated check valves against cross contamination and interference. The popular MZ 2C NT two-stage chemistry diaphragm pump is the heart of this pumping unit. It is frequently used for medium-sized vacuum applications involving "common" solvents. The exhaust waste vapor condenser is outstandingly efficient and compact. It provides near-100-percent recovery of solvents, for economical recycling and environmental protection.

PERFORMANCE FEATURES

- optimized vacuum even with gas ballast
- two intuitive CVC 3000 vacuum controllers with clear text menus, with integrated venting valve
- two chemistry-design solenoid valves with large cross section for unrestricted performance
- simultaneous operation of two independent vacuum applications
- excellent environmental friendliness due to efficient solvent recovery



PC 520 NT
2.0 m³/h
7 mbar

TECHNICAL DATA same as MZ 2C NT, except

Vacuum controller		2 x CVC 3000
Inlet connection		2 x hose nozzle DN 10 mm
Outlet connection		Hose nozzle DN 10 mm
Coolant connection		2 x hose nozzle DN 6-8 mm
Dimensions (L x W x H), approx.	mm	435 x 361 x 444
Weight, approx.	kg	17.7

ORDERING INFORMATION

230 V ~ 50-60 Hz	CEE	Ex*	733300
230 V ~ 50-60 Hz	CH, CN	Ex*	733301
230 V ~ 50-60 Hz	UK	Ex*	733302
100-115 V ~ 50-60 Hz / 120 V ~ 60 Hz	US		733303

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

ACCESSORIES

Rubber vacuum tubing DN 10 mm (686002)
Coolant valve VKW-B (674220)
Vent valve VBM-B (674217)
Liquid level sensor (699908)

ITEMS SUPPLIED

Pumping unit largely mounted, ready for use, with manual.

VARIO® CHEMISTRY PUMPING UNIT

MZ 2C NT VARIO AND PC 3002 VARIO

- VARIO® pumps and pumping units provide precise vacuum control by adaptation of the diaphragm pump's motor speed. They feature fully automatic evaporation control on the push of a button. The basic pump is the MZ 2C NT VARIO two-stage chemistry diaphragm pump which meets medium vacuum requirements for most solvents. The pumping unit PC 3002 VARIO is a well proven choice for evaporation of large amounts of solvents. The separator at the inlet collects particles and liquid droplets. The waste vapor condenser at the outlet enables near-100-percent solvent recovery, efficient recycling and active environmental protection. The on-demand motor speed control results in unparalleled length of service intervals for wearing parts such as diaphragms.

PERFORMANCE FEATURES

- automatic adaptation of the vacuum level throughout the process for high process reliability and unattended operation
- short process times due to zero-fluctuation (hysteresis-free) vacuum control
- easily operated CVC 3000 vacuum controller with clear text menus, with integrated venting valve
- extraordinary diaphragm life for minimum operational and servicing costs
- PC 3002 VARIO: excellent environmental friendliness due to efficient solvent recovery



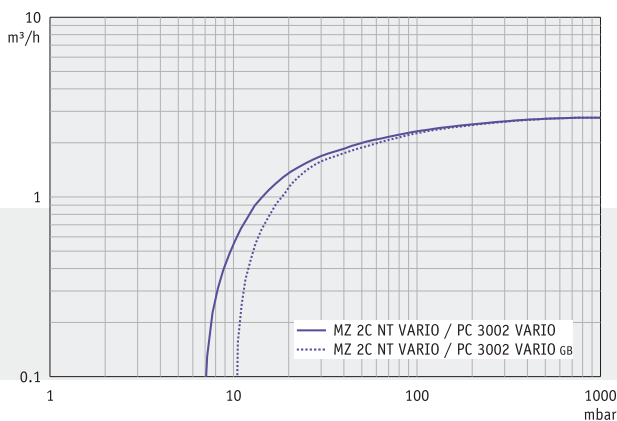
PC 3002 VARIO
2.8 m³/h
7 mbar



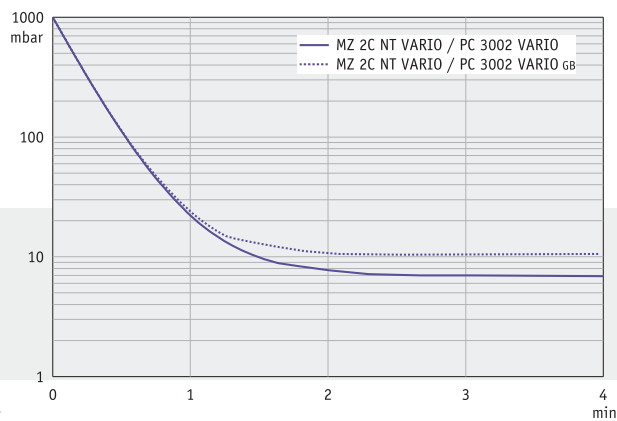
MZ 2C NT VARIO
2.8 m³/h
7 mbar

APPLICATIONS

Typical applications are all evaporation processes. Evaporation processes can be run fully automatically and with short process times and high sensitivity at the same time. The VARIO® control ensures high process reliability through prevention of superheating or foaming. The control allows for automatic vacuum level adaptation and is self-adapting to changing process parameters at any time. The VACUU · BUS® interface facilitates an user-friendly configuration of even complex vacuum installations.



Pumping speed graph
with/without gas ballast



Pump down graph
with/without gas ballast
(10 l volume)

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

TECHNICAL DATA

		MZ 2C NT VARIO	PC 3002 VARIO
Vacuum controller		CVC 3000	CVC 3000
Max. pumping speed	m³/h	2.8	2.8
Ultimate vacuum (abs.)	mbar	7	7
Ultim. vac. (abs.) with gas ballast	mbar	12	12
Max. back pressure (abs.)	bar	1.1	1.1
Inlet connection		Hose nozzle DN 10 mm	Hose nozzle DN 10 mm
Outlet connection		Hose nozzle DN 10 mm	Hose nozzle DN 10 mm
Coolant connection		-	2 x hose nozzle DN 6-8 mm
Rated motor power	kW	0.53	0.53
Degree of protection		IP 20	IP 40
Dimensions (L x W x H), approx.	mm	243 x 243 x 245	419 x 243 x 444
Weight, approx.	kg	13.8	17.4

ORDERING INFORMATION MZ 2C NT VARIO

200-230 V ~ 50-60 Hz	CEE	Ex*	732400
200-230 V ~ 50-60 Hz	CH, CN	Ex*	732401
200-230 V ~ 50-60 Hz	UK	Ex*	732402
100-120 V ~ 50-60 Hz	US		732403

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

ORDERING INFORMATION PC 3002 VARIO

200-230 V ~ 50-60 Hz	CEE	Ex*	733500
200-230 V ~ 50-60 Hz	CH, CN	Ex*	733501
200-230 V ~ 50-60 Hz	UK	Ex*	733502
100-120 V ~ 50-60 Hz	US		733503

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

ACCESSORIES

Rubber vacuum tubing DN 10 mm (686002)
Coolant valve VKW-B (674220)
Vent valve VBM-B (674217)
Liquid level sensor (699908)

ITEMS SUPPLIED

Pumping unit completely mounted, ready for use, with manual.

CHEMISTRY DIAPHRAGM PUMP

MD 1C

■ Three-stage chemistry-design diaphragm pumps are an excellent solution for continuous, oil-free pumping of corrosive gases and vapors and meet high requirements regarding ultimate vacuum. The three-stage construction provides the advantageous combination of high pumping speed and deep ultimate vacuum in a pump with a very small footprint. All parts in contact with pumped media are made of chemically resistant fluoroplastics. Well-proven PTFE sandwich diaphragms increase reliability and extend operating life. The MD 1C with gas ballast valve is optimally prepared for pumping easily condensable vapors (high boiling solvents).

PERFORMANCE FEATURES

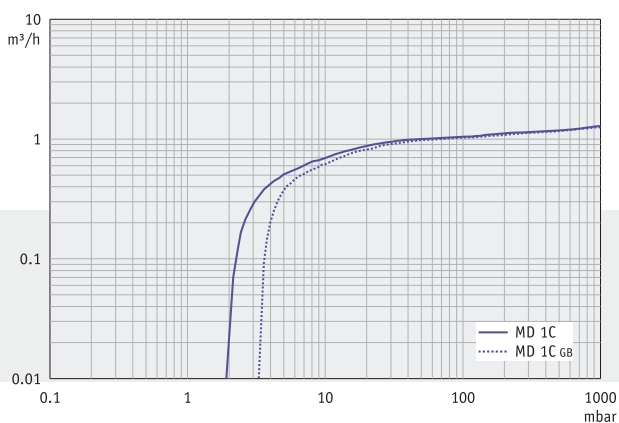
- outstanding chemical resistance and superior vapor tolerance
- exceptionally high performance even at low vacuum
- excellent ultimate vacuum even with gas ballast
- whisper quiet and ultra low vibration
- proven long diaphragm life, maintenance-free drive system



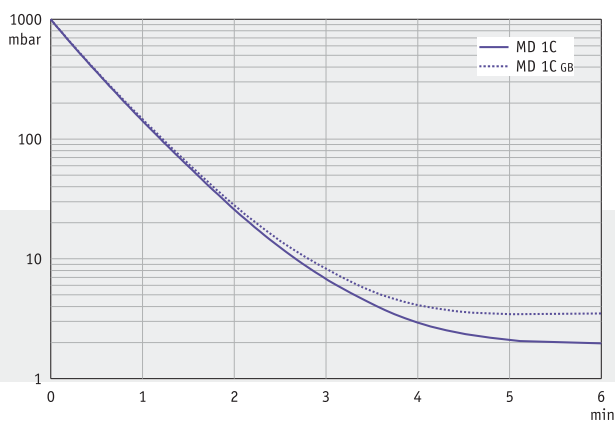
MD 1C
1.3 m³/h
2 mbar

APPLICATIONS

Three-stage chemistry diaphragm pumps are an excellent solution for applications involving corrosive gases and vapors at high vacuum requirements. Typical applications are vacuum generation at rotary evaporators, vacuum concentrators and many other laboratory applications. Due to their excellent ultimate vacuum they are the ideal solution for evaporation of high boiling solvents even with gas ballast. The MD 1C pump is the heart of a whole line of reliable chemistry pumping units.



Pumping speed graph at 50 Hz
with/without gas ballast



Pump down graph at 50 Hz
with/without gas ballast
(10 l volume)

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

TECHNICAL DATA

			MD 1C
Number of heads / stages			4 / 3
Max. pumping speed 50/60 Hz	m³/h		1.3 / 1.5
Ultimate vacuum (abs.)	mbar		2
Ultim. vac. (abs.) with gas ballast	mbar		4
Max. back pressure (abs.)	bar		1.1
Inlet connection			Hose nozzle DN 10 mm
Outlet connection			Hose nozzle DN 8 mm
Rated motor power	kW		0.08
Degree of protection			IP 42
Dimensions (L x W x H), approx.	mm		316 x 143 x 175
Weight, approx.	kg		6.9

ORDERING INFORMATION

200-230 V ~ 50-60 Hz	CEE	Ex*	696600
200-230 V ~ 50-60 Hz	CH, CN	Ex*	696601
200-230 V ~ 50-60 Hz	UK	Ex*	696602
100-120 V ~ 50-60 Hz	US		696603
120 V ~ 60 Hz*	US		696613

*With NRTL certification for Canada and the USA

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

ACCESSORIES

Rubber vacuum tubing DN 8 mm (686001)

Rubber vacuum tubing DN 10 mm (686002)

ITEMS SUPPLIED

Pump completely mounted, ready for use, with manual.

CHEMISTRY VACUUM SYSTEM

MD 1C +AK+EK

■ MD 1C chemistry diaphragm pump with separator at the inlet and exhaust vapor condenser

This chemistry vacuum system has a wide range of applications like evacuation, evaporation and pumping of gases and vapors. This system is usable for increased vacuum requirements with high boiling solvents and often replaces rotary vane pumps. Typical applications are rotary evaporators and vacuum drying ovens. The separator at the inlet (AK), made of glass with a protective coating, retains particles and liquid droplets. The waste vapor condenser at the outlet (EK) is highly efficient and compact. The condenser enables near-100-percent solvent recovery, efficient recycling and active protection of the environment.

PERFORMANCE FEATURES

- outstanding chemical resistance and superior vapor tolerance
- exceptionally high performance even at low vacuum
- excellent ultimate vacuum even with gas ballast
- whisper quiet and ultra low vibration
- excellent environmental friendliness due to efficient solvent recovery



MD 1C +AK+EK
1.3 m³/h
2 mbar

TECHNICAL DATA same as MD 1C, except

Inlet connection		Hose nozzle DN 10 mm
Outlet connection		Hose nozzle DN 10 mm
Coolant connection		2 x hose nozzle DN 6-8 mm
Dimensions (L x W x H), approx.	mm	316 x 239 x 405
Weight, approx.	kg	10.2

ORDERING INFORMATION

200-230 V ~ 50-60 Hz	CEE	Ex*	696620
200-230 V ~ 50-60 Hz	CH, CN	Ex*	696621
200-230 V ~ 50-60 Hz	UK	Ex*	696622
100-120 V ~ 50-60 Hz	US		696623
120 V ~ 60 Hz*	US		696633

*With NRTL certification for Canada and the USA

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

ACCESSORIES

Rubber vacuum tubing DN 10 mm (686002)

ITEMS SUPPLIED

Pumping unit completely mounted, ready for use, with manual.

CHEMISTRY PUMPING UNIT

PC 3001 BASIC

■ Chemistry pumping unit with manual speed control

This very compact chemistry pumping unit is an excellent solution when working with high boiling solvents. Typical applications are vacuum generation for rotary evaporators, vacuum concentrators and filtrations. With the continuously variable jog wheel, the pumping speed is manually adjustable to the process requirements. There are two optional kits available to easily upgrade the PC 3001 basic to the fully functional PC 3001 VARIO^{pro} complete with CVC 3000 vacuum controller, inlet separator and vapor condenser at the outlet.

PERFORMANCE FEATURES

- outstanding chemical resistance and superior vapor tolerance
- high flow rate even at low vacuum
- excellent ultimate vacuum even with gas ballast
- continuously adjustable manual adaptation of pumping speed via jog wheel
- upgradable to PC 3001 VARIO^{pro} system with two accessory packages: Kit 1, with CVC 3000 and inlet separator; Kit 2, with emission condenser and catch-pot



PC 3001 basic
2.0 m³/h
2 mbar

TECHNICAL DATA same as PC 3001 VARIO^{pro}, without CVC 3000, EK, AK

Inlet connection		Hose nozzle DN 6/10 mm
Outlet connection		Hose nozzle DN 10 mm / silencer
Dimensions (L x W x H), approx.	mm	251 x 256 x 400
Weight, approx.	kg	6.4

ORDERING INFORMATION

100-120 V/200-230 V ~ 50-60 Hz	CEE	Ex*	696720
100-120 V/200-230 V ~ 50-60 Hz	UK	Ex*	696722
100-120 V/200-230 V ~ 50-60 Hz	US	Ex*	696723

With NRTL certification for Canada and the USA

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

ACCESSORIES

- Rubber vacuum tubing DN 6 mm (686000)
- Rubber vacuum tubing DN 10 mm (686002)
- Upgrade kit CVC 3000 with inlet separator (699921)
- Upgrade kit emission condenser (699922)

ITEMS SUPPLIED

Pumping unit completely mounted, ready for use, with manual.

VARIO® CHEMISTRY PUMPING UNIT

PC 3001 VARIO^{PRO}

■ Continuously optimized electronic vacuum control on a chemistry-design pumping unit

This VARIO® chemistry pumping unit optimizes vacuum conditions automatically by precisely and continuously adjusting the diaphragm pump's motor speed. Thanks to the motor speed control the pump operates only when vacuum is needed, saving energy and reducing maintenance. The integrated vacuum controller enables fully automatic evaporation at a push of a button. Low space requirements, light weight and low operational noise contribute further to this unit's flexibility and popularity for laboratory use. The PC 3001 VARIO^{PRO} is ideal for vacuum applications with high boiling point solvents. This new 'pro' version builds on the worldwide popular PC 3001 VARIO unit, boosting the pumping speed and thereby extending its range to larger applications. The inlet separator, made of glass with a protective coating, prevents droplets and particles from entering the pump. The highly efficient insulated exhaust vapor condenser has a very compact design and provides near-100-percent recovery of solvents.

PERFORMANCE FEATURES

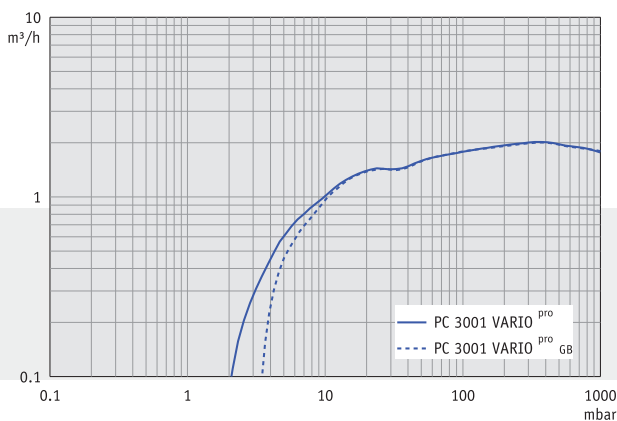
- easily operated CVC 3000 vacuum controller with clear text menus and integrated venting valve
- automatic optimization of the vacuum level throughout the process for high process reproducibility and unattended operation, short process times due to zero-fluctuation (hysteresis-free) vacuum control - even for large amounts of vapor
- compact and powerful; excellent ultimate vacuum, even with continuous condensate purge
- whisper quiet and ultra low vibration
- excellent environmental friendliness due to low power consumption and efficient solvent recovery

PC 3001 VARIO^{PRO}
2.0 m³/h
2 mbar

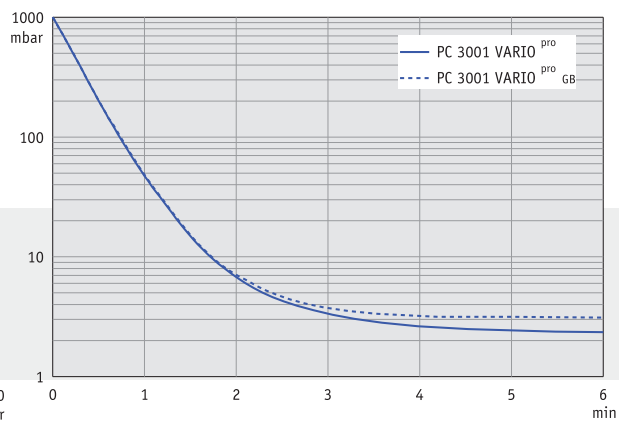


APPLICATIONS

This pumping unit is ideal for vacuum applications with high boiling solvents. The hysteresis-free vacuum control prevents superheating and foaming to protect valuable process samples. The controller enables automatic detection of vapor pressure and automatic adjustment of the vacuum level to the process requirements. The new 'pro' version with improved pumping speed extends the range of use. Evacuation of larger vessels and process steps with high vapor volumes can be completed more quickly. Programmed vacuum processes can be controlled by the integrated CVC 3000 controller or using the RS232C interface to your computer. The 'TE' version of the PC 3001 VARIO^{PRO} uses a dry ice condenser to provide a cooling-water-free option for vapor capture if no cooling water connection is available or water conservation is critical. The PC 3001 VARIO^{PRO} with the Peltronic® emission condenser works without any cooling media. For exceptionally large amounts of vapor - like from parallel evaporators without condenser - the PC 3001 VARIO^{PRO} +IK with its condenser on the vacuum side is an excellent choice.



Pumping speed graph
with/without gas ballast



Pump down graph
with/without gas ballast
(10 l volume)

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

TECHNICAL DATA

		PC 3001 VARIO ^{pro}	PC 3001 VARIO ^{pro} TE
Vacuum controller		CVC 3000	CVC 3000
Number of heads / stages		4 / 3	4 / 3
Max. pumping speed	m³/h	2.0	2.0
Ultimate vacuum (abs.)	mbar	2	2
Ultim. vac. (abs.) with gas ballast	mbar	4	4
Max. back pressure (abs.)	bar	1.1	1.1
Inlet connection		Hose nozzle DN 6/10 mm	Hose nozzle DN 6/10 mm
Outlet connection		Hose nozzle DN 10 mm	Hose nozzle DN 10 mm
Coolant connection		2 x hose nozzle DN 6-8 mm	-
Max. power	kW	0.16	0.16
Degree of protection		IP 20	IP 20
Dimensions (L x W x H), approx.	mm	300 x 306 x 400	300 x 341 x 493
Weight, approx.	kg	7.7	8.2

ORDERING INFORMATION PC 3001 VARIO^{pro}

100-120 V/200-230 V ~ 50-60 Hz	Ex*	CEE	696700
100-120 V/200-230 V ~ 50-60 Hz	Ex*	CH, CN	696701
100-120 V/200-230 V ~ 50-60 Hz	Ex*	UK	696702
100-120 V/200-230 V ~ 50-60 Hz	Ex*	US	696703

With NRTL certification for Canada and the USA

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

ORDERING INFORMATION PC 3001 VARIO^{pro} TE

100-120 V/200-230 V ~ 50-60 Hz	Ex*	CEE	696710
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With NRTL certification for Canada and the USA

ORDERING INFORMATION PC 3001 VARIO^{pro} EK Peltronic

100-120 V/200-230 V ~ 50-60 Hz	Ex*	696735**
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ORDERING INFORMATION PC 3001 VARIO^{pro} +IK

100-120 V/200-230 V ~ 50-60 Hz	Ex*	696745**
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With NRTL certification for Canada and the USA

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

**Please order power cable separately ▶ pg. 179

ACCESSORIES

- Rubber vacuum tubing DN 6 mm (686000)
- Rubber vacuum tubing DN 10 mm (686002)
- Coolant valve VKW-B (674220)
- Vent valve VBM-B (674217)
- Liquid level sensor (699908)

ITEMS SUPPLIED

Pumping unit completely mounted, ready for use, with manual.

CHEMISTRY DIAPHRAGM PUMP

MD 4C NT AND MD 4CRL NT

- Three-stage chemistry-design diaphragm pumps are an excellent solution for continuous, oil-free pumping of corrosive gases and vapors and meet even challenging requirements. The three-stage design provides the advantageous combination of high pumping speed and very low ultimate vacuum. All parts of the MD 4C NT in contact with pumped media are made of chemically resistant fluoroplastics. Well-proven PTFE sandwich diaphragms provide increased reliability and extended operating life. Due to the gas ballast valve and its very good ultimate vacuum (even with gas ballast) the MD 4C NT is also suitable for pumping condensable vapors of high-boiling solvents. The new NT-series features further improved performance data, easy service and superior vapor tolerance.
- For applications requiring an especially high leak tightness of the pump, we recommend the MD 4CRL NT. The wetted parts of the pump are made of fluoroplastics and a special, highly corrosion-resistant stainless steel. Every single pump is tested for an integral leakage rate of 0.001 mbar l/s.

PERFORMANCE FEATURES

- outstanding chemical resistance and superior vapor tolerance
- exceptionally high performance even at low vacuum
- excellent ultimate vacuum even with gas ballast
- whisper quiet and very low vibration
- long diaphragm life, maintenance-free drive system



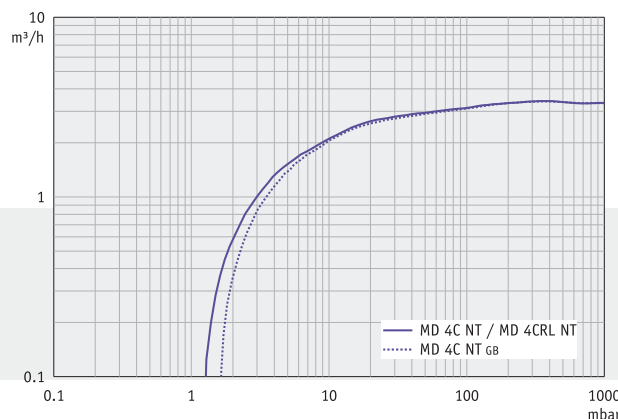
MD 4C NT
3.4 m³/h
1.5 mbar

MD 4CRL NT
3.4 m³/h
1.5 mbar

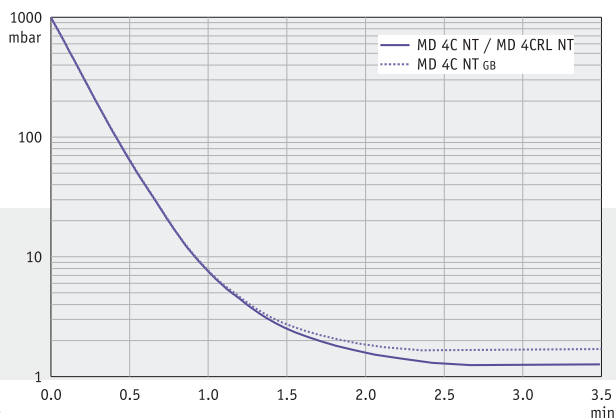


APPLICATIONS

Three-stage chemistry-design diaphragm pumps are an excellent choice for applications with corrosive gases and vapors with high vacuum requirements. Typical applications are parallel and rotary evaporators, concentrators, drying ovens and many other laboratory applications. The MD 4C NT has an outstanding performance for pumping large amounts of vapor, e.g., out of drying ovens and gel dryers. This powerful pump is at the heart of a complete family of well-proven and reliable vacuum systems and pumping units for larger lab applications.



Pumping speed graph at 50 Hz
with/without gas ballast



Pump down graph at 50 Hz
with/without gas ballast
(10 l volume)

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

TECHNICAL DATA

		MD 4C NT	MD 4CRL NT
Number of heads / stages		4 / 3	4 / 3
Max. pumping speed at 50/60 Hz	m³/h	3.4 / 3.8	3.4 / 3.8
Ultimate vacuum (abs.)	mbar	1.5	1.5
Ultim. vac. (abs.) with gas ballast	mbar	3	-
Integral leakage rate	mbar l/s	typ. 0.02	0.001
Max. back pressure (abs.)	bar	1.1	1.1
Inlet connection		Hose nozzle DN 10 mm	Small flange KF DN 16
Outlet connection		Hose nozzle DN 10 mm	Small flange KF DN 16
Rated motor power	kW	0.25	0.25
Degree of protection		IP 40	IP 40
Dimensions (L x W x H), approx.	mm	325 x 243 x 198	325 x 243 x 198
Weight, approx.	kg	14.3	19.8

ORDERING INFORMATION MD 4C NT

230 V ~ 50-60 Hz	CEE	Ex*	736400
230 V ~ 50-60 Hz	CH, CN	Ex*	736401
230 V ~ 50-60 Hz	UK	Ex*	736402
100-115 V ~ 50-60 Hz /			
120 V ~ 60 Hz	US		736403

With NRTL certification for Canada and the USA

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

ACCESSORIES MD 4C NT

Rubber vacuum tubing DN 10 mm (686002)

ORDERING INFORMATION MD 4CRL NT

100-115 V ~ 50-60 Hz / 120 V ~ 50-60 Hz		
200-230 V ~ 50-60 Hz	Ex*	736445**

With NRTL certification for Canada and the USA

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

**Please order power cable separately ▶ pg. 179

ACCESSORIES MD 4CRL NT

PTFE tubing KF DN 16 (1000 mm: 686031)

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

ITEMS SUPPLIED

Pump completely mounted, ready for use, with manual.

CHEMISTRY VACUUM SYSTEM

MD 4C NT +2AK

■ MD 4C NT chemistry diaphragm pump with inlet separator and outlet catchpot

This chemistry vacuum system has a wide range of applications like evacuation, evaporation and pumping of gases and vapors in chemical, biological and pharmaceutical laboratories that do not require condensation of solvent vapors at the outlet. This system is well proven for high vacuum requirements with high boiling solvents. Typical applications are vacuum concentrators, rotary evaporators and drying ovens. The separator at the inlet (AK), made of glass with a protective coating, retains particles and liquid droplets. The catchpot at the outlet collects condensate, avoids condensate backflow towards the pump and reinforces the whisper-quiet operation of the pump.

PERFORMANCE FEATURES

- outstanding chemical resistance and superior vapor tolerance
- exceptionally high performance even at low vacuum
- excellent ultimate vacuum even with gas ballast
- whisper quiet and very low vibration
- separators at inlet and outlet to collect condensates



MD 4C NT +2AK
3.4 m³/h
1.5 mbar

TECHNICAL DATA same as MD 4C NT, except

Inlet connection		Hose nozzle DN 10 mm
Outlet connection		Hose nozzle DN 10 mm
Dimensions (L x W x H), approx.	mm	319 x 243 x 374
Weight, approx.	kg	16.7

ORDERING INFORMATION

230 V ~ 50-60 Hz	CEE	Ex*	736600
100-115 V ~ 50-60 Hz/120 V ~ 60 Hz	US		736603
With NRTL certification for Canada and the USA			
Ex*: ATEX: II 3G IIC T3 X, Internal Atm. only			

ACCESSORIES

Rubber vacuum tubing DN 10 mm (686002)

ITEMS SUPPLIED

Pumping unit completely mounted, ready for use, with manual.

CHEMISTRY VACUUM SYSTEM

MD 4C NT +AK+EK

■ MD 4C NT pump with separator at the inlet and exhaust vapor condenser

This chemistry vacuum system has a wide range of applications like evacuation, evaporation and pumping of gases and vapors in chemical, biological and pharmaceutical laboratories. This system is ideal for high vacuum requirements with high boiling solvents. Typical applications are rotary evaporators and drying ovens. The separator at the inlet (AK), made of glass with a protective coating, retains particles and liquid droplets. The waste vapor condenser at the outlet (EK) is highly efficient and compact. The condenser enables near-100-percent solvent recovery, efficient recycling of solvents and active protection of the environment.

PERFORMANCE FEATURES

- outstanding chemical resistance and superior vapor tolerance
- exceptionally high performance even at low vacuum
- excellent ultimate vacuum even with gas ballast
- whisper quiet and very low vibration
- excellent environmental friendliness due to efficient solvent recovery



MD 4C NT +AK+EK
3.4 m³/h
1.5 mbar

TECHNICAL DATA same as MD 4C NT, except

Inlet connection		Hose nozzle DN 10 mm
Outlet connection		Hose nozzle DN 10 mm
Coolant connection		2 x hose nozzle DN 6-8 mm
Dimensions (L x W x H), approx.	mm	326 x 243 x 402
Weight, approx.	kg	17.3

ORDERING INFORMATION

230 V ~ 50-60 Hz	CEE	Ex*	736700
230 V ~ 50-60 Hz	CH, CN	Ex*	736701
230 V ~ 50-60 Hz	UK	Ex*	736702
100-115 V ~ 50-60 Hz/120 V ~ 60 Hz	US		736703

With NRTL certification for Canada and the USA

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

ACCESSORIES

Rubber vacuum tubing DN 10 mm (686002)

ITEMS SUPPLIED

Pumping unit completely mounted, ready for use, with manual.

CHEMISTRY VACUUM SYSTEM

MD 4C NT +AK SYNCHRO+EK

■ MD 4C NT pump with full vapor capture and ports to operate two applications

This chemistry vacuum system provides the simultaneous operation of two processes with only one pump. Typical applications are rotary evaporators, vacuum concentrators and vacuum drying ovens. Each vacuum connection is provided with a manual valve to regulate the effective flow at each port. The MD 4C NT pump offers more than sufficient pumping speed also for the parallel operation of two challenging applications. The separator at the inlet (AK), made of glass with a protective coating, retains particles and liquid droplets. The waste vapor condenser at the outlet (EK) is highly efficient and compact. The condenser enables near-100-percent solvent recovery, efficient recycling and active protection of the environment.

PERFORMANCE FEATURES

- outstanding chemical resistance and superior vapor tolerance
- exceptionally high performance even at low vacuum
- excellent ultimate vacuum even with gas ballast
- simultaneous operation of two independent vacuum applications, with reliable check valves to prevent interference between systems
- excellent environmental friendliness due to efficient solvent recovery



MD 4C NT +AK SYNCHRO+EK
3.4 m³/h
1.5 mbar

TECHNICAL DATA same as MD 4C NT, except

Inlet connection		2 x hose nozzle DN 10 mm
Outlet connection		Hose nozzle DN 10 mm
Coolant connection		2 x hose nozzle DN 6-8 mm
Dimensions (L x W x H), approx.	mm	326 x 248 x 402
Weight, approx.	kg	17.6

ORDERING INFORMATION

230 V ~ 50-60 Hz	CEE	Ex*	736800
230 V ~ 50-60 Hz	CH, CN	Ex*	736801

With NRTL certification for Canada and the USA

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

ACCESSORIES

Rubber vacuum tubing DN 10 mm (686002)

Kit analog gauge for NT SYNCHRO (699907)

ITEMS SUPPLIED

Pumping unit completely mounted, ready for use, with manual.

CHEMISTRY PUMPING UNIT

PC 201 NT

■ Chemistry pumping unit with vacuum dial gauge, manual flow control and vapor capture

This chemistry pumping unit has a wide range of applications like evacuation, evaporation and pumping of gases and vapors in chemical, biological and pharmaceutical laboratories. Typical applications are rotary evaporators, vacuum concentrators and vacuum drying ovens with high boiling solvents. The manual flow control valve regulates the effective pumping speed at the vacuum connection; the vacuum manometer offers an analog vacuum display. The separator at the inlet (AK), made of glass with a protective coating, retains particles and liquid droplets. The exhaust waste vapor condenser enables near-100-percent solvent recovery.

PERFORMANCE FEATURES

- outstanding chemical resistance and superior vapor tolerance
- exceptionally high performance even at low vacuum
- excellent ultimate vacuum even with gas ballast
- manual vacuum control, analog vacuum display
- excellent environmental friendliness due to efficient solvent recovery



PC 201 NT
3.4 m³/h
1.5 mbar

TECHNICAL DATA same as MD 4C NT, except

Inlet connection		Hose nozzle DN 10 mm
Outlet connection		Hose nozzle DN 10 mm
Coolant connection		2 x hose nozzle DN 6-8 mm
Dimensions (L x W x H), approx.	mm	326 x 243 x 402
Weight, approx.	kg	17.5

ORDERING INFORMATION

230 V ~ 50-60 Hz	CEE	Ex*	737000
100-115 V ~ 50-60 Hz/120 V ~ 60 Hz	US		737003
With NRTL certification for Canada and the USA			
Ex*: ATEX: II 3G IIC T3 X, Internal Atm. only			

ACCESSORIES

Rubber vacuum tubing DN 10 mm (686002)

ITEMS SUPPLIED

Pumping unit completely mounted, ready for use, with manual.

CHEMISTRY PUMPING UNIT

PC 600 LAN NT

- This ready-to-connect chemistry vacuum pumping unit is optimized for automatic on-demand vacuum generation in local area vacuum networks, e.g., VACUU·LAN®. The pump turns on and off automatically, according to the actual vacuum demand. The on/off switch points can be set independently. Based on the MD 4C NT pump, the PC 600 LAN NT meets high vacuum requirements at multiple workstations in laboratories. The pumping unit includes a vacuum controller (VNC 2) with digital vacuum display. The VNC 2 also contains connections for a cooling water valve and a readout for an optional liquid level sensor for the catchpot at the exhaust waste vapor condenser.

PERFORMANCE FEATURES

- excellent ultimate vacuum even with gas ballast
- energy-efficient and low maintenance costs
- optional coolant valve to minimize cooling water consumption
- optional liquid level sensor for catchpot
- excellent environmental friendliness due to efficient solvent recovery



PC 600 LAN NT
3.4 m³/h
1.5 mbar

TECHNICAL DATA same as MD 4C NT, except

Vacuum controller		VNC 2
Inlet connection		PTFE tubing connection 10/8 mm
Outlet connection		Hose nozzle DN 10 mm
Coolant connection		2 x hose nozzle DN 6-8 mm
Dimensions (L x W x H), approx.	mm	408 x 264 x 470
Weight, approx.	kg	18.4

ORDERING INFORMATION

230 V ~ 50-60 Hz	CEE	Ex*	737400
230 V ~ 50-60 Hz	CH, CN	Ex*	737401
100-120 V ~ 50-60 Hz	US		737403

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

ACCESSORIES

Rubber vacuum tubing DN 10 mm (686002)
PTFE tubing DN 10/8 mm (638644)
Coolant valve VKW-B (674220)
Vent valve VBM-B (674217)
Liquid level sensor (699908)

ITEMS SUPPLIED

Pumping unit completely mounted, ready for use, with manual.

CHEMISTRY PUMPING UNIT

PC 610 NT

■ Chemistry pumping unit with electronic vacuum control

Chemistry pumping units of the PC 600 series are well-proven for vacuum generation and control for many evaporation processes. The basic pump is the three-stage chemistry diaphragm pump MD 4C NT which meets high vacuum requirements for most high boiling solvents. Typical applications are rotary evaporators and vacuum drying ovens. The pumping unit is equipped with a vacuum controller CVC 3000 with solenoid valve for electronic vacuum control. The exhaust vapor condenser is outstandingly efficient and compact. It provides near-100-percent recovery of solvents, for economical recycling and environmental protection.

PERFORMANCE FEATURES

- easily operated vacuum controller CVC 3000 with clear text menus, with integrated venting valve
- exceptionally high performance even at low vacuum
- excellent ultimate vacuum even with gas ballast
- chemistry design flow control valve with large cross section for unrestricted performance
- excellent environmental friendliness due to efficient solvent recovery



PC 610 NT
3.4 m³/h
1.5 mbar

TECHNICAL DATA same as MD 4C NT, except

Vacuum controller		CVC 3000
Inlet connection		Hose nozzle DN 10 mm
Outlet connection		Hose nozzle DN 10 mm
Coolant connection		2 x hose nozzle DN 6-8 mm
Dimensions (L x W x H), approx.	mm	419 x 243 x 444
Weight, approx.	kg	19.9

ORDERING INFORMATION

230 V ~ 50-60 Hz	CEE	Ex*	737100
230 V ~ 50-60 Hz	CH, CN	Ex*	737101
230 V ~ 50-60 Hz	UK	Ex*	737102
100-115 V ~ 50-60 Hz/120 V ~ 60 Hz	US		737103

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

ACCESSORIES

Rubber vacuum tubing DN 10 mm (686002)
Coolant valve VKW-B (674220)
Vent valve VBM-B (674217)
Liquid level sensor (699908)

ITEMS SUPPLIED

Pumping unit completely mounted, ready for use, with manual.

CHEMISTRY PUMPING UNIT

PC 611 NT

■ Chemistry pumping unit with two ports - one electronic and one manual - for high boiling solvents

Chemistry pumping units of these series are well-proven for vacuum generation and control for many evaporation processes. This pumping unit makes it possible to operate two vacuum systems simultaneously with just one pump. The basic pump is the three-stage MD 4C NT chemistry diaphragm pump which meets high vacuum requirements for most high boiling solvents. This pump offers more than sufficient pumping speed also for the parallel operation of two challenging applications. The pumping unit is equipped with a CVC 3000 vacuum controller with solenoid valve for electronic vacuum control. At the second vacuum connection a manual flow control valve allows to regulate the effective pumping speed at this port. Both vacuum ports have integrated check valves to protect against cross contamination.

PERFORMANCE FEATURES

- easily operated vacuum controller CVC 3000 with clear text menus, with integrated venting valve
- exceptionally high performance even at low vacuum
- excellent ultimate vacuum even with gas ballast
- high pumping speed for unrestricted simultaneous operation of two independent vacuum applications; check valves against cross contamination
- excellent environmental friendliness due to efficient solvent recovery



PC 611 NT
3.4 m³/h
1.5 mbar

TECHNICAL DATA same as MD 4C NT, except

Vacuum controller		CVC 3000
Inlet connection		2 x hose nozzle DN 10 mm
Outlet connection		Hose nozzle DN 10 mm
Coolant connection		2 x hose nozzle DN 6-8 mm
Dimensions (L x W x H), approx.	mm	435 x 243 x 444
Weight, approx.	kg	20.1

ORDERING INFORMATION

230 V ~ 50-60 Hz	CEE	Ex*	737200
230 V ~ 50-60 Hz	CH, CN	Ex*	737201
100-115 V ~ 50-60 Hz/120 V ~ 60 Hz	US		737203

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

ACCESSORIES

Rubber vacuum tubing DN 10 mm (686002)
Coolant valve VKW-B (674220)
Vent valve VBM-B (674217)
Liquid level sensor (699908)

ITEMS SUPPLIED

Pumping unit completely mounted, ready for use, with manual.

CHEMISTRY PUMPING UNIT

PC 620 NT

■ Chemistry pumping unit with two electronically controlled inlet ports for high boiling solvents

This chemistry vacuum pumping unit is an economic space-saving solution for simultaneous operation of two independent vacuum applications with one single pump. Each vacuum port is equipped with a vacuum controller CVC 3000 with a solenoid valve for electronic vacuum control. The basic pump is the three-stage MD 4C NT chemistry diaphragm pump which meets high vacuum requirements for most high boiling solvents. This pump offers more than sufficient pumping speed also for the parallel operation of two challenging applications. Both vacuum ports have integrated check valves against cross contamination and interference. The exhaust vapor condenser is outstandingly efficient and compact. It provides near-100-percent recovery of solvents, for economical recycling and environmental protection.

PERFORMANCE FEATURES

- easily operated vacuum controller CVC 3000 with clear text menus, with integrated venting valve
- exceptionally high performance even at low vacuum
- excellent ultimate vacuum even with gas ballast
- high pumping speed for unrestricted simultaneous operation of two independent vacuum applications; check valves against cross contamination
- excellent environmental friendliness due to efficient solvent recovery



PC 620 NT
3.4 m³/h
1.5 mbar

TECHNICAL DATA same as MD 4C NT, except

Vacuum controller		2 x CVC 3000
Inlet connection		2 x hose nozzle DN 10 mm
Outlet connection		Hose nozzle DN 10 mm
Coolant connection		2 x hose nozzle DN 6-8 mm
Dimensions (L x W x H), approx.	mm	435 x 361 x 444
Weight, approx.	kg	20.9

ORDERING INFORMATION

230 V ~ 50-60 Hz	CEE	Ex*	737300
230 V ~ 50-60 Hz	CH, CN	Ex*	737301

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

ACCESSORIES

Rubber vacuum tubing DN 10 mm (686002)
Coolant valve VKW-B (674220)
Vent valve VBM-B (674217)
Liquid level sensor (699908)

ITEMS SUPPLIED

Pumping unit largely mounted, ready for use, with manual.

VARIO® CHEMISTRY PUMPING UNIT

MD 4C NT VARIO AND PC 3004 VARIO

■ VARIO® pumps and pumping units provide precise vacuum control by adaptation of the diaphragm pump's motor speed. They feature fully automatic evaporation control on the push of a button. The basic pump is the three-stage MD 4C NT VARIO chemistry diaphragm pump which meets high vacuum requirements for most high boiling solvents. The PC 3004 VARIO offers a well proven choice for evaporation of large amounts of solvents. The separator at the inlet, made of glass with protective coating, retains particles and liquid droplets. The waste vapor condenser at the outlet enables near-100-percent solvent recovery, efficient recycling and active environmental protection. The on-demand motor speed control results in unsurpassed lifetimes of service parts, such as diaphragms.

PERFORMANCE FEATURES

- automatic adaptation of the vacuum level throughout the process for high process reliability and unattended operation
- short process times due to high pumping speed and zero-fluctuation (hysteresis-free) vacuum control
- easily operated CVC 3000 vacuum controller with clear text menus, with integrated venting valve
- extraordinary diaphragm life, therefore minimum operational and servicing costs
- PC 3004 VARIO: Excellent environmental friendliness due to efficient solvent recovery



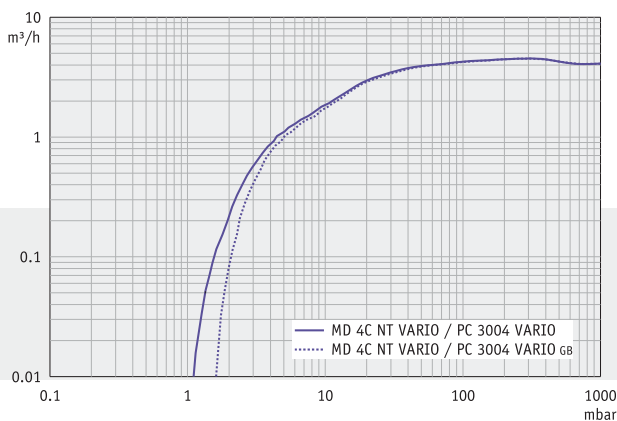
PC 3004 VARIO
4.6 m³/h
1.5 mbar

MD 4C NT VARIO
4.6 m³/h
1.5 mbar

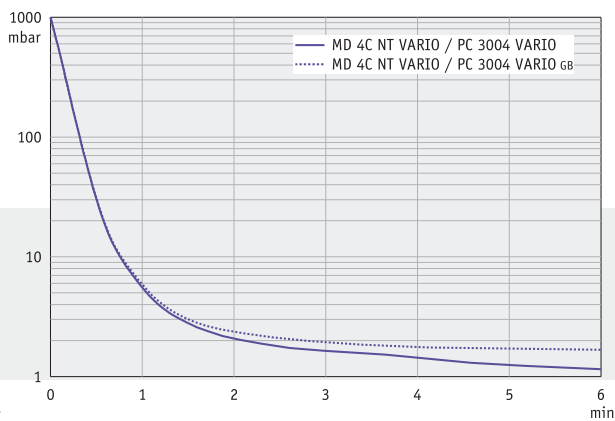


APPLICATIONS

Typical applications are all evaporation processes. They can be run fully automatically and with shorter process times and extra sensitivity even for challenging mixtures at the same time. The VARIO® control ensures high process reliability through prevention of boiling retardation or foaming. It detects boiling pressures automatically and self-adapts to changing process parameters at any time. This all without any need of parameter input or the use of a solvent library. Also in many other applications and in laboratory vacuum networks the VARIO® control brings significant advantages as it provides always the appropriate pumping speed. The VACUU·BUS® system ensures user-friendly connections even with complex vacuum set-ups.



Pumping speed graph
with/without gas ballast



Pump down graph
with/without gas ballast
(10 l volume)

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

TECHNICAL DATA

		MD 4C NT VARIO	PC 3004 VARIO
Vacuum controller		CVC 3000	CVC 3000
Number of heads / stages		4 / 3	4 / 3
Max. pumping speed	m³/h	4.6	4.6
Ultimate vacuum (abs.)	mbar	1.5	1.5
Ultim. vac. (abs.) with gas ballast	mbar	3	3
Max. back pressure (abs.)	bar	1.1	1.1
Inlet connection		Hose nozzle DN 10 mm	Hose nozzle DN 10 mm
Outlet connection		Hose nozzle DN 10 mm	Hose nozzle DN 10 mm
Coolant connection		-	2 x hose nozzle DN 6-8 mm
Rated motor power	kW	0.53	0.53
Degree of protection		IP 20	IP 40
Dimensions (L x W x H), approx.	mm	325 x 243 x 245	419 x 243 x 444
Weight, approx.	kg	16.3	20.6

ORDERING INFORMATION MD 4C NT VARIO

200-230 V ~ 50-60 Hz	CEE	Ex*	736500
200-230 V ~ 50-60 Hz	CH, CN	Ex*	736501
100-120 V ~ 50-60 Hz	US		736503

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

ORDERING INFORMATION PC 3004 VARIO

200-230 V ~ 50-60 Hz	CEE	Ex*	737500
200-230 V ~ 50-60 Hz	CH, CN	Ex*	737501
200-230 V ~ 50-60 Hz	UK	Ex*	737502
100-120 V ~ 50-60 Hz	US		737503

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

ACCESSORIES

Rubber vacuum tubing DN 10 mm (686002)
Coolant valve VKW-B (674220)
Vent valve VBM-B (674217)
Liquid level sensor (699908)

ITEMS SUPPLIED

Pumping unit completely mounted, ready for use, with manual.

CHEMISTRY DIAPHRAGM PUMP

MD 12C NT

■ Three-stage chemistry diaphragm pumps are an excellent solution for continuous, oil-free pumping of corrosive gases and vapors and meet the highest requirements. The three-stage design of the eight-cylinder MD 12C NT pump provides the advantageous combination of high pumping speed and very low ultimate vacuum. All internal parts in contact with pumped media are made of chemically resistant fluoroplastics. Well-proven PTFE sandwich diaphragms provide increased reliability and extended operating life. With its gas ballast valve the MD 12C NT is optimally prepared for pumping easily condensable vapors, thanks to the very good ultimate vacuum even with open gas ballast valve also for high boiling solvents. Upgrade kits such as inlet separator (AK) and exhaust vapor condenser (EK) enable a later adaptation to changed process requirements. Eight-cylinder NT pumps features quiet operation with smooth, easy-to-clean surfaces.

PERFORMANCE FEATURES

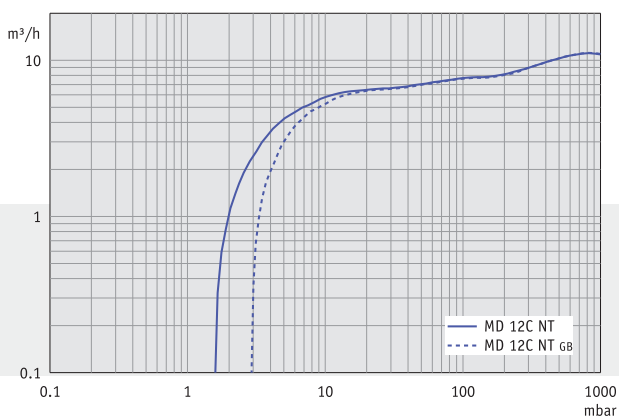
- outstanding chemical resistance and superior vapor tolerance
- reduced process time due to particularly high pumping speed even near ultimate vacuum
- whisper quiet and very low vibration
- very good ultimate vacuum even with open gas ballast valve for condensate purge
- long diaphragm lifetime, maintenance-free drive system



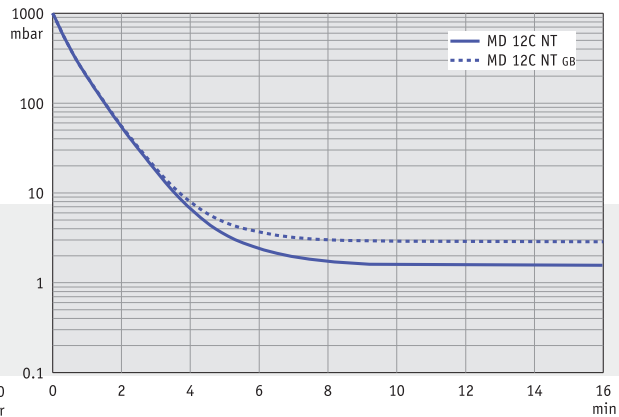
MD 12C NT
11.1 m³/h
2 mbar

APPLICATIONS

The high pumping speed of the MD 12C NT reduces the process time and meets the high vacuum requirements, e.g., of parallel processes in vacuum networks. Typical applications are large vacuum ovens and rotary evaporators, for example at pilot plants, mini-plants and kilo laboratories. The MD 12C NT is the particularly powerful base pump for vacuum systems and pumping units with vacuum control. Upgraded with a separator at the inlet the MD 12C NT is well prepared also for rough operating conditions. With a waste vapor emission condenser (available as accessory) at the outlet the pump offers excellent environmental friendliness due to efficient solvent recovery.



Pumping speed graph at 50 Hz
with/without gas ballast



Pump down graph at 50 Hz
with/without gas ballast
(100 l volume)

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

TECHNICAL DATA

Number of heads / stages		8 / 3
Max. pumping speed at 50/60 Hz	m³/h	11.1 / 12.3
Ultimate vacuum (abs.)	mbar	2
Ultim. vac. (abs.) with gas ballast	mbar	4
Max. back pressure (abs.)	bar	1.1
Inlet connection		Small flange KF DN 25
Outlet connection		Hose nozzle DN 15 mm
Rated motor power	kW	0.44
Degree of protection		IP 40
Dimensions (L x W x H), approx.	mm	531 x 260 x 359
Weight, approx.	kg	28.1

MD 12C NT

AVAILABLE FROM JUNE 2012

ORDERING INFORMATION MD 12C NT

230 V ~ 50-60 Hz	CEE	Ex*	743300
230 V ~ 50-60 Hz	CH, CN	Ex*	743301
230 V ~ 50-60 Hz	UK	Ex*	743302
100-115 V ~ 50-60 Hz /			
120 V ~ 60 Hz	US		743303

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

ACCESSORIES MD 12C NT

- PTFE tubing KF DN 25 (1000 mm: 686033)
- Inlet separator KF DN 25 (699979)
- Emission condenser kit for NT pump models (699948)

ITEMS SUPPLIED

Pump completely mounted, ready for use, with manual.

CHEMISTRY VACUUM SYSTEM

MD 12C NT +EK, MD 12C NT +AK+EK

■ These chemistry vacuum systems have a wide range of applications like evacuation, evaporation and pumping of gases and vapors. They provide particularly high pumping speed and are ideal for higher vacuum requirements, e.g., with high boiling solvents. The base MD 12C NT pump obtains a very good ultimate vacuum even with open gas ballast valve for condensate purge and delivers high pumping speed in a compact design. The pump design offers exceptionally high chemical resistance supporting almost universal usage in chemistry and pharmaceuticals. The inlet separator (AK) retains particles and liquid droplets, the waste vapor condenser at the outlet (EK) is highly efficient and compact. The condenser enables near-100-percent solvent recovery, efficient recycling, and active protection of the environment.

PERFORMANCE FEATURES

- outstanding chemical resistance and superior vapor tolerance
- reduced process time due to particularly high pumping speed even near ultimate vacuum
- whisper quiet and very low vibration
- very good ultimate vacuum even with open gas ballast valve for condensate purge
- efficient solvent recovery and inlet separator equip the MD 12C NT +AK+EK system for rough operating conditions



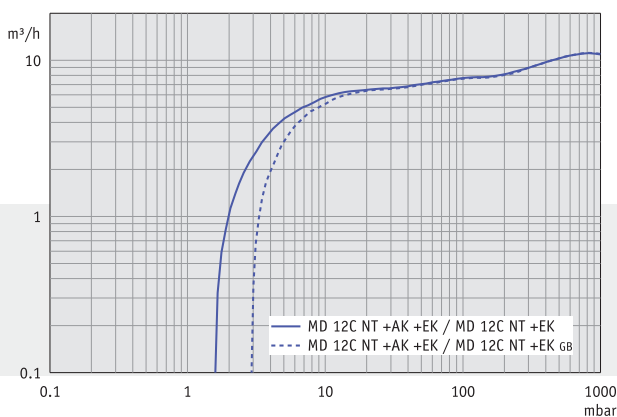
MD 12C NT +AK+EK
11.1 m³/h
2 mbar



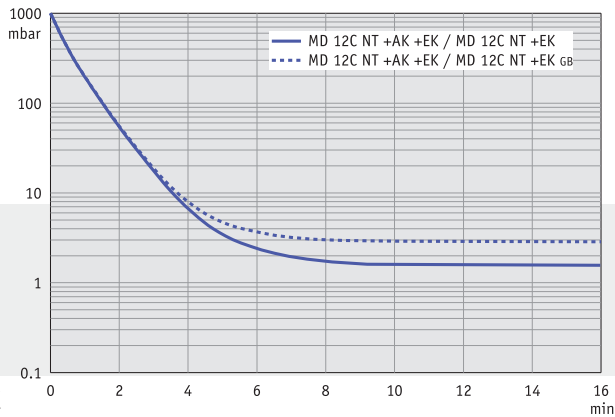
MD 12C NT +EK
11.1 m³/h
2 mbar

APPLICATIONS

The very high pumping speed of the MD 12C NT reduces the process time and meets the high vacuum requirements, e.g., of parallel processes in vacuum networks. Typical applications are vacuum ovens and large rotary evaporators as well as pilot plants and mini-plants. These vacuum systems will also quickly prove their advantages in kilo labs, with the high volumes of solvents processed there. The MD 12C NT serves as the powerful heart of several environmentally friendly VACUUBRAND models with efficient solvent recovery accessories. The MD 12C NT +AK+EK, for example, includes a separator at the inlet that is particularly useful for rough operating conditions.



Pumping speed graph at 50 Hz
with/without gas ballast



Pump down graph at 50 Hz
with/without gas ballast
(100 l volume)

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

TECHNICAL DATA

		MD 12C NT +EK	MD 12C NT +AK+EK
Number of heads / stages		8 / 3	8 / 3
Max. pumping speed 50/60 Hz	m³/h	11.1 / 12.3	11.1 / 12.3
Ultimate vacuum (abs.)	mbar	2	2
Ultim. vac. (abs.) with gas ballast	mbar	4	4
Max. back pressure (abs.)	bar	1.1	1.1
Inlet connection		Small flange KF DN 25	Small flange KF DN 25 / hose nozzle DN 15 mm
Outlet connection		Hose nozzle DN 10 mm	Hose nozzle DN 10 mm
Coolant connection		2 x hose nozzle DN 6-8 mm	2 x hose nozzle DN 6-8 mm
Rated motor power	kW	0.44	0.44
Degree of protection		IP 40	IP 40
Dimensions (L x W x H), approx.	mm	528 x 387 x 395	616 x 387 x 395
Weight, approx.	kg	29.1	29.7

AVAILABLE FROM JUNE 2012

ORDERING INFORMATION MD 12C NT +EK

230 V ~ 50-60 Hz	CEE	Ex*	743500
230 V ~ 50-60 Hz	CH, CN	Ex*	743501
230 V ~ 50-60 Hz	UK	Ex*	743502
100-115 V ~ 50-60 Hz /			
120 V ~ 60 Hz	US		743503

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

AVAILABLE FROM JUNE 2012

ORDERING INFORMATION MD 12C NT +AK+EK

230 V ~ 50-60 Hz	CEE	Ex*	743600
230 V ~ 50-60 Hz	CH, CN	Ex*	743601
230 V ~ 50-60 Hz	UK	Ex*	743602
100-115 V ~ 50-60 Hz /			
120 V ~ 60 Hz	US		743603

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

ACCESSORIES MD 12C NT +EK

PTFE tubing KF DN 25 (1000 mm: 686033)
Rubber vacuum tubing DN 10 mm (686002)
Inlet separator KF DN 25 (699979)

ACCESSORIES MD 12C NT +AK+EK

PTFE tubing KF DN 25 (1000 mm: 686033)
Rubber vacuum tubing DN 10 mm (686002)

ITEMS SUPPLIED MD 12C NT +EK

Pumping unit completely mounted, ready for use, with manual

ITEMS SUPPLIED MD 12C NT +AK+EK

Pumping unit completely mounted, ready for use, with manual

VARIO[®] CHEMISTRY PUMPING UNIT

MD 12C NT VARIO AND PC 3012 NT VARIO

■ These VARIO[®] pumping units feature a very high pumping speed even close to the outstanding ultimate vacuum and are ideal for high vacuum requirements with most high boiling solvents. They provide precise vacuum control by continuously adjusting the pump's motor speed. The controller provides fully automatic evaporations without any need for parameter input. The pump design offers exceptionally high chemical resistance supporting almost universal usage in chemistry and pharmaceuticals. The PC 3012 NT VARIO pumping unit relies on a well-proven operating concept for evaporations with large amounts of solvents. The inlet separator (AK) retains particles and liquid droplets, the waste vapor condenser at the outlet (EK) is highly efficient and compact. The condenser enables near-100-percent solvent recovery, efficient recycling, and active protection of the environment. The MD 12C NT VARIO can be equipped with these accessories later.

PERFORMANCE FEATURES

- automatic adjustment of the vacuum level throughout the process for high process reproducibility and unattended operation
- short process times due to zero-fluctuation (hysteresis-free) vacuum control, even for large amounts of vapor
- easily operated CVC 3000 vacuum controller with clear text menus and integrated venting valve
- extraordinary diaphragm life for minimum operational and servicing costs
- PC 3012 NT VARIO: excellent environmental friendliness due to efficient solvent recovery, inlet separator for demanding applications



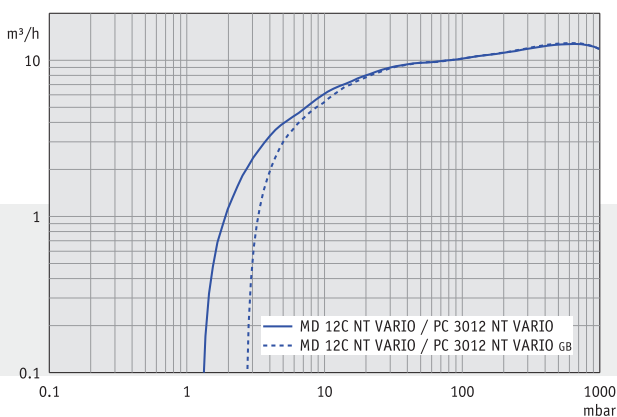
PC 3012 NT VARIO
12.9 m³/h
1.5 mbar



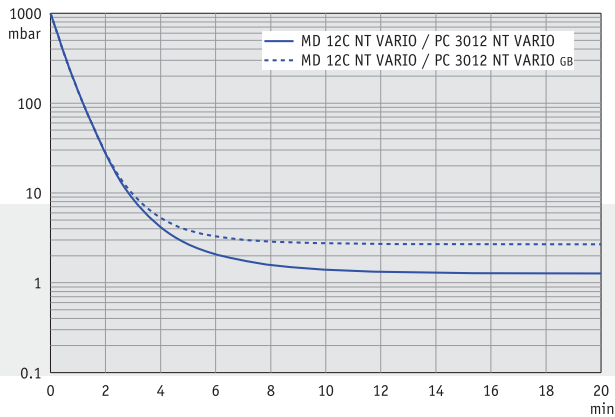
MD 12C NT VARIO
12.9 m³/h
1.5 mbar

APPLICATIONS

The high pumping speed reduces the process time and meets the high vacuum requirements, for example, of parallel operations in vacuum networks. Evaporation processes can be run fully automatically and with short process time without sacrificing sensitivity. The VARIO[®] control minimizes the danger of superheating and foaming and therefore ensures consistent process safety and protection of samples. With its inlet separator and efficient solvent recovery system, the PC 3012 NT VARIO is ideal for rough operating conditions. The model with Peltronic[®] emission condenser enables environmentally friendly solvent condensation at the outlet without external coolant.



Pumping speed graph
with/without gas ballast



Pump down graph
with/without gas ballast
(100 l volume)

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

TECHNICAL DATA

		MD 12C NT VARIO	PC 3012 NT VARIO
Vacuum controller		CVC 3000	CVC 3000
Number of heads / stages		8 / 3	8 / 3
Max. pumping speed	m³/h	12.9	12.9
Ultimate vacuum (abs.)	mbar	1.5	1.5
Ultim. vac. (abs.) with gas ballast	mbar	3	3
Max. back pressure (abs.)	bar	1.1	1.1
Inlet connection		Small flange KF DN 25	Small flange KF DN 25 / hose nozzle DN 15 mm
Outlet connection		Hose nozzle DN 15 mm	Hose nozzle DN 10 mm
Coolant connection		-	2 x hose nozzle DN 6-8 mm
Rated motor power	kW	0.53	0.53
Degree of protection		IP 40	IP 40
Dimensions (L x W x H), approx.	mm	531 x 260 x 420	616 x 387 x 420
Weight, approx.	kg	28.1	29.7

AVAILABLE FROM JUNE 2012

ORDERING INFORMATION MD 12C NT VARIO

200-230 V ~ 50-60 Hz	CEE	Ex*	743700
100-120 V ~ 50-60 Hz	US		743703

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

AVAILABLE FROM JUNE 2012

ORDERING INFORMATION PC 3012 NT VARIO

200-230 V ~ 50-60 Hz	CEE	Ex*	743800
200-230 V ~ 50-60 Hz	CH, CN	Ex*	743801
100-120 V ~ 50-60 Hz	US		743803

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

ORDERING INFORMATION PC 3012 NT VARIO EK Peltronic

200-230 V ~ 50-60 Hz	IEC plug EN 60320	Ex*	743814**
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Ex*: ATEX: II 3G IIC T3 X, Internal Atm. only

**Please order power cable separately ▶ pg. 179

ACCESSORIES MD 12C NT VARIO

- PTFE tubing KF DN 25 (1000 mm: 686033)
- Inlet separator KF DN 25 (699979)
- Emission condenser kit for NT pump models (699948)

ACCESSORIES PC 3012 NT VARIO, PC 3012 NT VARIO EK Peltronic

- PTFE tubing KF DN 25 (1000 mm: 686033)
- Rubber vacuum tubing DN 10 mm (686002)

ITEMS SUPPLIED

Pumping unit completely mounted, ready for use, with manual.

VARIO® CHEMISTRY PUMPING UNIT

PC 3003 VARIO

■ This VARIO® pumping unit provides precise vacuum control by adjusting the diaphragm pump's motor speed. It features fully automatic evaporation control at the push of a button. The PC 3003 VARIO provides an excellent ultimate vacuum and is therefore the best solution for evaporations of high boiling solvents even at low temperatures. It combines extraordinary performance with a compact design and very low noise. The separator at the inlet, made of glass with protective coating, retains particles and liquid droplets to protect pump performance. The exhaust vapor condenser at the outlet enables near-100-percent solvent recovery. The on-demand motor speed control results in unsurpassed lifetimes for service parts, such as diaphragms.

PERFORMANCE FEATURES

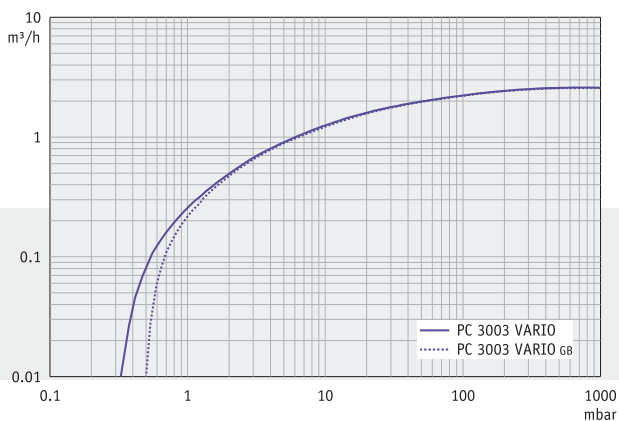
- automatic optimization of vacuum levels throughout the process for high process reliability and unattended operation
- short process times due to powerful pump and zero-fluctuation (hysteresis-free) vacuum control
- ideal for high-boiling solvents and evaporation at low temperatures
- easily operated CVC 3000 vacuum controller with clear text menus and integrated venting valve
- excellent environmental friendliness due to efficient solvent recovery



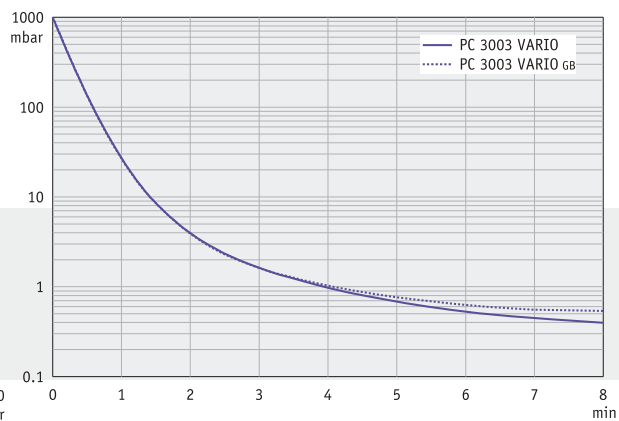
PC 3003 VARIO
2.8 m³/h
0.6 mbar

APPLICATIONS

Typical applications are all evaporation processes. They can be run fully automatically by the integrated vacuum controller CVC 3000 resulting in both shorter process times and extra sensitivity at the same time. The excellent ultimate vacuum allows even high boiling solvents to evaporate at low temperatures. The VARIO® control ensures high process reliability through prevention of superheating or foaming. It detects boiling pressures of solvents fully automatically and adapts continuously the vacuum conditions to changing process parameters. All this without any need of parameter input or the use of a solvent library. In many other applications - like in local vacuum networks - the VARIO® control offers a significant advantage by supplying always the appropriate pumping speed. The VACUU·BUS® system ensures user-friendly connections even with complex vacuum set-ups.



Pumping speed graph
with/without gas ballast



Pump down graph
with/without gas ballast
(10 l volume)

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

TECHNICAL DATA

Vacuum controller		CVC 3000
Number of heads / stages		4 / 4
Max. pumping speed	m³/h	2.8
Ultimate vacuum (abs.)	mbar	0.6
Ultim. vac. (abs.) with gas ballast	mbar	2
Max. back pressure (abs.)	bar	1.1
Inlet connection		Hose nozzle DN 10 mm
Outlet connection		Hose nozzle DN 10 mm
Coolant connection		2 x hose nozzle DN 6-8 mm
Rated motor power	kW	0.53
Degree of protection		IP 40
Dimensions (L x W x H), approx.	mm	419 x 243 x 444
Weight, approx.	kg	20.6

PC 3003 VARIO

ORDERING INFORMATION PC 3003 VARIO

200-230 V ~ 50-60 Hz	CEE	Ex*	738400
200-230 V ~ 50-60 Hz	CH, CN	Ex*	738401
200-230 V ~ 50-60 Hz	UK	Ex*	738402
100-120 V ~ 50-60 Hz	US		738403

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

ACCESSORIES PC 3003 VARIO

Rubber vacuum tubing DN 10 mm (686002)
Coolant valve VKW-B (674220)
Vent valve VBM-B (674217)
Liquid level sensor (699908)

ITEMS SUPPLIED

Pumping unit completely mounted, ready for use, with manual.

CHEMISTRY VACUUM SYSTEM

MV 10C NT AND MV 10C NT +EK

- Four-stage chemistry-design diaphragm pumps are an excellent solution for continuous, oil-free pumping of corrosive gases and vapors and meet highest requirements. The four-stage design of the eight-cylinder pump MV 10C NT provides the advantageous combination of high pumping speed and very low ultimate vacuum of 0.9 mbar in a very compact design. All internal parts in contact with pumped media are made of chemically resistant fluoroplastics. Well-proven PTFE sandwich diaphragms increase reliability and extend operating life. Upgraded with an exhaust waste vapor condenser (EK) the MV 10C NT +EK provides an excellent, environmentally friendly system with efficient solvent recovery. A separator for the inlet (AK) made of glass (with protective coating) against particles and liquid droplets is available as an optional accessory.

PERFORMANCE FEATURES

- outstanding chemical resistance and superior vapor tolerance
- reduced process time due to very high flow rates even close to ultimate vacuum
- very low vibration and quiet
- excellent ultimate vacuum even with gas ballast
- excellent environmental friendliness due to efficient solvent recovery (on models with EK accessory)



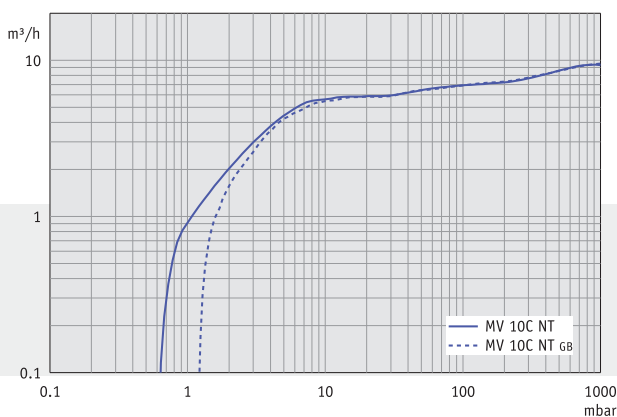
MV 10C NT
9.5 m³/h
0.9 mbar



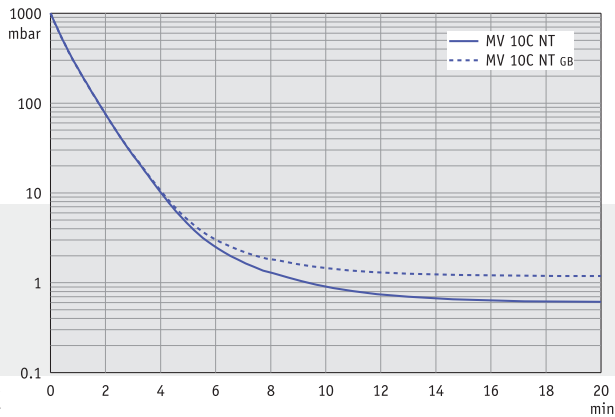
MV 10C NT +EK
9.5 m³/h
0.9 mbar

APPLICATIONS

The high pumping speed and excellent ultimate vacuum of the MV 10C NT reduce the process time significantly. The pump meets the high vacuum requirements, e.g., of parallel processes in vacuum networks. Further typical applications are vacuum ovens, large rotary evaporators, pilot plants and mini-plants as well as kilo laboratories. For rough operating conditions we recommend an inlet separator (AK) to protect the pump from particles and liquid droplets. The exhaust waste vapor condenser on the MV 10C NT +EK (also available as accessory) enables near-100-percent solvent recovery, efficient recycling and active protection of the environment.



Pumping speed graph at 50 Hz
with/without gas ballast



Pump down graph at 50 Hz
with/without gas ballast
(100 l volume)

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

TECHNICAL DATA

		MV 10C NT	MV 10C NT +EK
Number of heads / stages		8 / 4	8 / 4
Max. pumping speed at 50/60 Hz	m³/h	9.5 / 10.7	9.5 / 10.7
Ultimate vacuum (abs.)	mbar	0.9	0.9
Ultim. vac. (abs.) with gas ballast	mbar	1.5	1.5
Max. back pressure (abs.)	bar	1.1	1.1
Inlet connection		Small flange KF DN 25	Small flange KF DN 25
Outlet connection		Hose nozzle DN 15 mm	Hose nozzle DN 10 mm
Coolant connection		-	2 x hose nozzle DN 6-8 mm
Rated motor power	kW	0.44	0.44
Degree of protection		IP 40	IP 40
Dimensions (L x W x H), approx.	mm	531 x 260 x 359	528 x 387 x 395
Weight, approx.	kg	28.1	29.1

AVAILABLE FROM JUNE 2012

ORDERING INFORMATION MV 10C NT

230 V ~ 50-60 Hz	CEE	Ex*	744300
100-115 V ~ 50-60 Hz			
120 V ~ 60 Hz	US		744303

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

ACCESSORIES MV 10C NT

PTFE tubing KF DN 25 (1000 mm: 686033)
Inlet separator KF DN 25 (699979)
Emission condenser kit for NT pump models (699948)

ACCESSORIES MV 10C NT +EK

PTFE tubing KF DN 25 (1000 mm: 686033)
Rubber vacuum tubing DN 10 mm (686002)
Inlet separator KF DN 25 (699979)

ITEMS SUPPLIED

Pumping unit completely mounted, ready for use, with manual.

AVAILABLE FROM JUNE 2012

ORDERING INFORMATION MV 10C NT +EK

230 V ~ 50-60 Hz	CEE	Ex*	744500
100-115 V ~ 50-60 Hz			
120 V ~ 60 Hz	US		744503

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

VARIO® CHEMISTRY PUMPING UNIT

MV 10C NT VARIO AND PC 3010 NT VARIO

■ These VARIO® pumps and pumping units feature a very high pumping speed and attain an outstanding ultimate vacuum. They are ideal for high vacuum requirements, e.g., for evaporation of most high boiling solvents even at low temperatures. They provide precise vacuum control by adjusting the diaphragm pump's motor speed. The controller provides fully automatic evaporations without any need of parameter input. The pump design offers exceptionally high chemical resistance supporting almost universal usage in chemistry and pharmaceuticals. The PC 3010 NT VARIO pumping unit relies on a well-proven operating concept for example for evaporation of large amounts of solvents. The inlet separator (AK) retains particles and liquid droplets, the waste vapor condenser at the outlet (EK) is highly efficient and compact. The condenser enables near-100-percent solvent recovery, efficient recycling, and active protection of the environment. For the MV 10C NT VARIO these accessories are optionally available and can be mounted later.

PERFORMANCE FEATURES

- automatic optimization of the vacuum level throughout the process for high process reproducibility and unattended operation
- short process times due to zero-fluctuation (hysteresis-free) vacuum control, even for large amounts of vapor
- easily operated CVC 3000 vacuum controller with clear text menus and integrated venting valve
- extraordinary diaphragm life for minimum operational and servicing costs
- PC 3010 NT VARIO: excellent environmental friendliness due to efficient solvent recovery



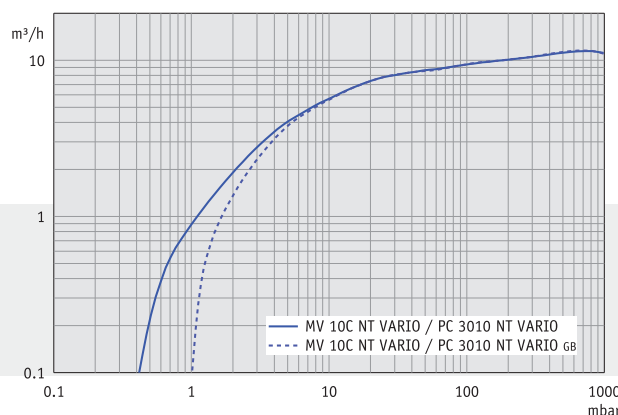
PC 3010 NT VARIO
11.6 m³/h
0.6 mbar

MV 10C NT VARIO
11.6 m³/h
0.6 mbar

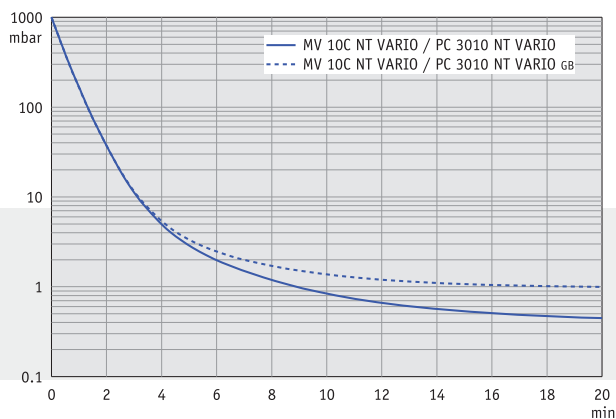


APPLICATIONS

The high pumping speed and the very good ultimate vacuum reduce the process time significantly, e.g., of evaporation of high boiling solvents. Typical applications are all drying and evaporation processes like in vacuum ovens, large rotary evaporators, at pilot plants, mini-plants or kilo laboratories. Evaporation processes can be run fully automatically with short process times and high sensitivity at the same time. The VARIO® control minimizes the danger of superheating and foaming and therefore ensures a constantly high process safety. With its inlet separator and efficient solvent recovery system, the PC 3010 NT VARIO is ideal for challenging operating conditions.



Pumping speed graph
with/without gas ballast



Pump down graph
with/without gas ballast
(100 l volume)

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

TECHNICAL DATA

		MV 10C NT VARIO	PC 3010 NT VARIO
Vacuum controller		CVC 3000	CVC 3000
Number of heads / stages		8 / 4	8 / 4
Max. pumping speed	m³/h	11.6	11.6
Ultimate vacuum (abs.)	mbar	0.6	0.6
Ultim. vac. (abs.) with gas ballast	mbar	1.2	1.2
Max. back pressure (abs.)	bar	1.1	1.1
Inlet connection		Small flange KF DN 25	Small flange KF DN 25 / hose nozzle DN 15 mm
Outlet connection		Hose nozzle DN 15 mm	Hose nozzle DN 10 mm
Coolant connection		-	2 x hose nozzle DN 6-8 mm
Rated motor power	kW	0.53	0.53
Degree of protection		IP 40	IP 40
Dimensions (L x W x H), approx.	mm	531 x 260 x 420	616 x 387 x 420
Weight, approx.	kg	28.1	29.7

AVAILABLE FROM JUNE 2012

ORDERING INFORMATION MV 10C NT VARIO

200-230 V ~ 50-60 Hz CEE Ex* 744700

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

AVAILABLE FROM JUNE 2012

ORDERING INFORMATION PC 3010 NT VARIO

200-230 V ~ 50-60 Hz CEE Ex* 744800

200-230 V ~ 50-60 Hz CH, CN Ex* 744801

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

ACCESSORIES MV 10C NT VARIO

PTFE tubing KF DN 25 (1000 mm: 686033)

Inlet separator KF DN 25 (699979)

Emission condenser kit for NT pump models (699948)

ACCESSORIES PC 3010 NT VARIO

PTFE tubing KF DN 25 (1000 mm: 686033)

Rubber vacuum tubing DN 10 mm (686002)

ITEMS SUPPLIED

Pumping unit completely mounted, ready for use, with manual.