



Roots pumps

For all low and medium vacuum applications



Roots pumps



Introduction Roots pumps	4
Overview / Applications	
Convection-cooled – OktaLine	8
Function and description	9
Dimensions	10
Pumping speed	13
Technical data / Order numbers / Accessories	14
Gas-circulation-cooled – OktaLine G	16
Function and description	17
Dimensions	18
Pumping speed	20
Technical data / Order numbers / Accessories	22
Explosion-protected – OktaLine ATEX	24
Function and description	25
Dimensions	26
Pumping speed	28
Technical data / Order numbers / Accessories	30
Vacuum solutions from a single source	32
Market segments and applications	32
Product overview	36



Roots pumps



For all low and medium vacuum applications

The OktaLine series Roots pumps can be perfectly tailored to customer-specific requirements by different pumping speeds and versions. This type of pump needs a backing pump both suited to the application and designed for the gas stream.

The high-precision production technology makes it possible to achieve very high compression values, which in turn allows for maximum pumping speed at very low gas exit temperatures. Pfeiffer Vacuum Roots pumps offer low operating costs at high uptime, since electrical power and (depending on the process) a gaseous purge medium (e.g. air) are all that they require. A high cost water-cooling unit is not required. The magnetic coupled version makes leaks at the shaft feedthrough an issue of the past.

Used in combination with other Roots pumps or appropriate backing pumps, Roots pumps can be adapted perfectly to any application. Pfeiffer Vacuum as the leading supplier of vacuum solutions has more than 50 years of experience in the design of customer-specific solutions.

Customer benefits

- Large pumping speed range from 145 to 27,400 m³/h
- Long life due to robust, compact design
- Short pumpdown time by high compression ratio and overflow valve
- Maintenance free at high operating safety and maximum availability due to the optional magnetic coupling
- Low operating costs because of air cooling and optional magnetic coupling
- A cooling water unit is not required
- Pumps available in stainless steel versions upon request
- Energie efficient, frequency converter suitable standard motors



Overview of series and applications

	Analytics				Semiconductor							Coating					Industry					R&D																						
	Electron microscopy	Leak detection	Mass spectrometry	Surface analysis	Plasma monitoring	Residual gas analysis	Lithography	Physical Vapor Deposition (PVD)	Chemical Vapor Deposition (CVD)	Plasma etching	Implantation – Source	Implantation – Beamline	Inspection	Bonding	MBE (Molecular Beam Epitaxy)	Load-locks, transfer chambers, handling systems	Film Panel Display (FPD)	LED / OLED	Hard disk coating	Photovoltaics	Glass coating (PVD)	CD / DVD / Blu-ray production (PVD)	Optical coating (PVD)	Wear protection (PVD, CVD)	Web coating	Medical technology	Industrial leak detection	Electron beam welding	Isolation vacuums	Lamp and tube manufacturing	Heat treatment	Vacuum drying	Vacuum furnaces	Nuclear research	Fusion technology	Plasma research	Particle accelerators	Space simulation	Cryogenic research	Elementary particle physics	Nanotechnology	Biotechnology		
■ = recommended																																												
Roots pumps																																												
Convection-cooled – OktaLine																																												
Okta 250							■	■	■	■					■	■	■		■				■	■	■		■					■			■		■		■		■		■	
Okta 500							■	■	■	■					■	■	■		■				■	■	■		■					■			■		■		■		■		■	
Okta 1000							■	■	■	■							■		■				■	■	■		■					■			■		■		■		■		■	
Okta 2000							■	■	■	■									■				■	■	■		■					■			■		■		■		■		■	
Okta 4000							■	■	■	■									■			■	■	■		■						■			■		■		■		■		■	
Okta 6000																																■			■		■		■		■		■	
Okta 8000																																	■			■		■		■		■		
Okta 18000																																		■			■		■		■		■	
Gas-circulation-cooled – OktaLine G																																												
Okta 500 G																													■	■				■	■	■		■	■	■		■		■
Okta 1500 G																													■	■				■	■	■		■	■	■		■		■
Okta 4000 G																													■	■				■	■	■		■	■	■		■		■
Okta 8000 G																													■	■				■	■	■		■	■	■		■		■
Explosion-protected – OktaLine ATEX																																												
Okta 500 ATEX																																■	■	■										■
Okta 1000 ATEX																																■	■	■										■
Okta 2000 ATEX																																■	■	■										■
Okta 4000 ATEX																																■	■	■										■



Overview of series

- Convection-cooled – OktaLine
- Gas-circulation-cooled – OktaLine G
- Explosion-protected – OktaLine ATEX
(in accordance with Directive 94/9/EC)
- Magnetic coupling as an option of all models

The integrated overflow valve is standard in all convection-cooled pumps. This makes it possible to switch the pump on at atmospheric pressure. The pump is thus automatically protected from thermal overload. The gain in additional pumping speed allows for shorter cycle times in load-lock applications and time-critical processes. Monitoring with fault-prone pressure switches and slow start up with cost-intensive frequency converters is no longer needed.

Typical applications:

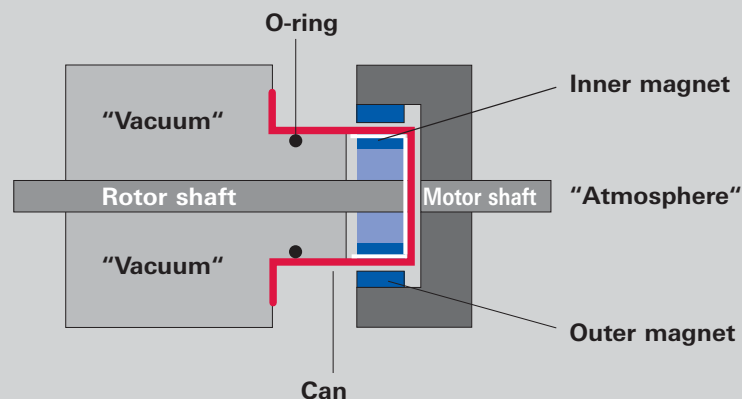
- Glass and foil coating
- Plasma etching
- PVD and CVD
- Vacuum metallurgy
- Space simulation
- Vacuum drying / freeze drying
- Steel degassing / secondary metallurgy
- Electron beam welding

Advantages of magnetic coupling

All pump models of the OktaLine series can optionally be driven by means of a permanent-magnetic coupling with can. The static seal prevents a bidirectional exchange of process gas and the ambient atmosphere. These pumps are permanently hermetically sealed.

The magnetic coupling implicates further advantages: Maintenance oil changes as they become mandatory for pumps with driveshaft feedthrough are no longer necessary. Downtime and service costs will be reduced.

Integrated magnet coupling



Convection-cooled – OktaLine

Convection-cooled OktaLine Roots pumps for all low and medium vacuum applications

The pumping speeds of convection-cooled Roots pumps range from 145 to 27,400 m³/h. They can easily be combined and used in low and medium vacuum applications. Typical uses include industrial applications, coating, the semiconductor industry and research & development, or in chemical and process technology applications.

The gear box and bearings in our Roots pumps are separated from the gas pumping chamber. The contactless operating principle of the Roots pistons allows for technically dry operations.

A further advantage: due to convection cooling, installation and operating costs are significantly lower than for water-cooled pumps. The OktaLine can therefore be used universally.

The design concept for our proven Roots pumps was expanded to include magnetic couplings. These hermetically sealed pumps in the OktaLine M series mean that critical gases such as helium can be pumped without any problems and operating costs are minimized as the system works without a shaft feedthrough.

Customer benefits

- Complete line of Roots pumps offers optimum flexibility and maximum process suitability
- Broad range of pumping speeds: 145 to 27,400 m³/h
- Rugged, compact design
- Fast evacuation due to high compression ratio and overflow valve
- Maintenance free at maximum reliability and highest uptime thanks to magnetic coupling
- Low operating costs thanks to air cooling and magnetic coupling
- No thermal overload because of integral overflow valve
- Long service intervals and simple on-site maintenance
- On-site service worldwide





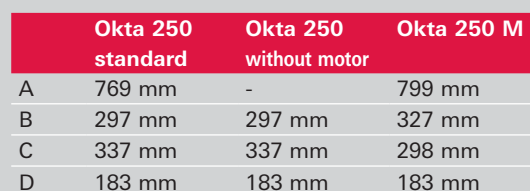
Applications

- Metallurgy
- Simulation chambers
- Packaging industry
- Freeze/vacuum-drying
- Thin-film technology
- Electron beam welding
- Load-locks
- Chemistry and process technology
- Industrial leak detection systems
- Steel degassing





Okta 250



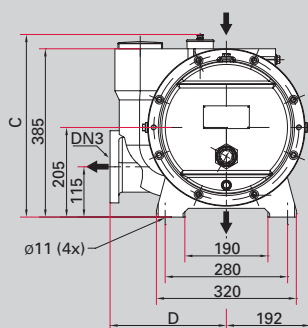
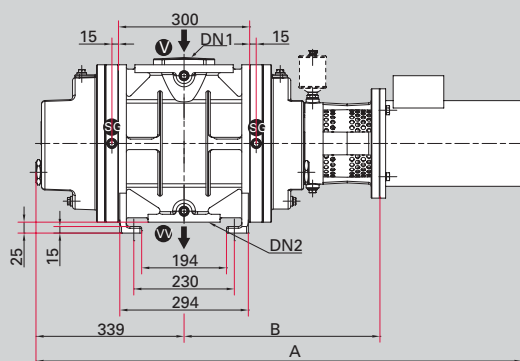
DN 1	DN 63 ISO-F	DN 63 ISO-F	DN 63 ISO-F
DN 2	DN 63 ISO-F	DN 63 ISO-F	DN 63 ISO-F

	Okta 500 standard	Okta 500 without motor	Okta 500 M
A	915 mm	-	950 mm
B	352 mm	352 mm	382 mm
C	337 mm	337 mm	298 mm
D	183 mm	183 mm	183 mm

DN 1	DN 100 ISO-F	DN 100 ISO-F	DN 100 ISO-F
DN 2	DN 100 ISO-F	DN 100 ISO-F	DN 100 ISO-F

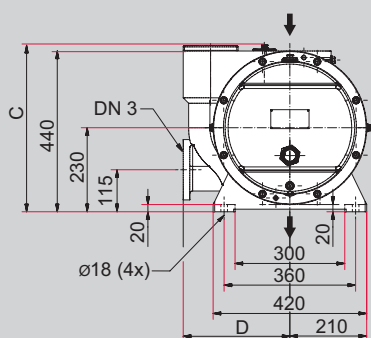
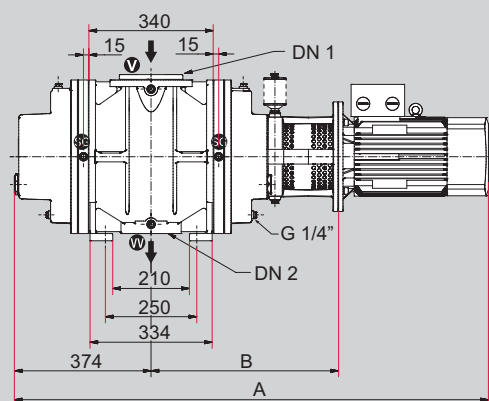


Okta 1000



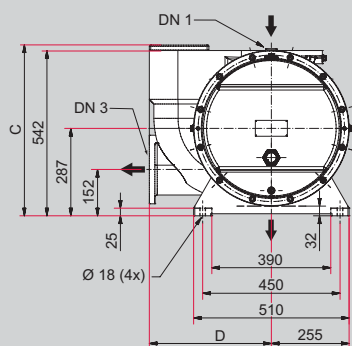
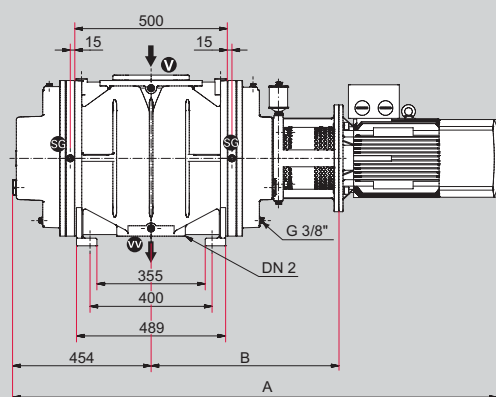
	Okta 1000 standard	Okta 1000 without motor	Okta 1000 M
A	1112 mm	-	1125 mm
B	448 mm	448 mm	461 mm
C	418 mm	418 mm	402 mm
D	266 mm	266 mm	266 mm
Connections			
DN 1	DN 160 ISO-F	DN 160 ISO-F	DN 160 ISO-F
DN 2	DN 100 ISO-F	DN 100 ISO-F	DN 100 ISO-F
DN 3	DN 100 ISO-F	DN 100 ISO-F	DN 100 ISO-F

Okta 2000



	Okta 2000 standard	Okta 2000 without motor	Okta 2000 M
A	1297 mm	-	1317 mm
B	513 mm	513 mm	532 mm
C	458 mm	458 mm	458 mm
D	292 mm	292 mm	292 mm
Connections			
DN 1	DN 160 ISO-F	DN 160 ISO-F	DN 160 ISO-F
DN 2	DN 100 ISO-F	DN 100 ISO-F	DN 100 ISO-F
DN 3	DN 100 ISO-F	DN 100 ISO-F	DN 100 ISO-F

Okta 4000



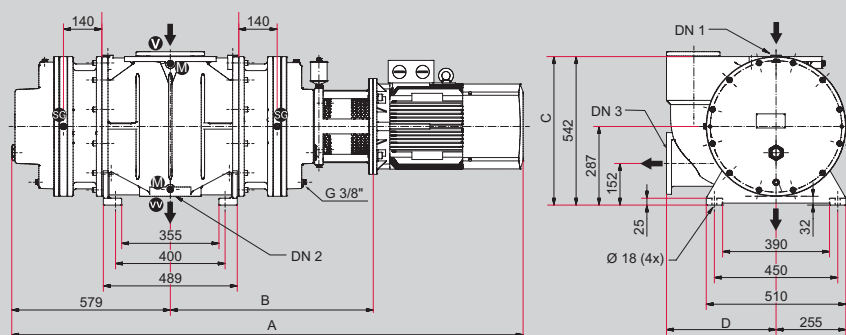
	Okta 4000 standard	Okta 4000 without motor	Okta 4000 M
A	1589 mm	-	1651 mm
B	616 mm	616 mm	678 mm
C	560 mm	560 mm	560 mm
D	400 mm	400 mm	400 mm
Connections			
DN 1	DN 250 ISO-F/ DN 250 PN 16	DN 250 ISO-F/ DN 250 PN 16	DN 250 ISO-F/ DN 250 PN 16
DN 2	DN 160 ISO-F/ DN 150 PN 16	DN 160 ISO-F/ DN 150 PN 16	DN 160 ISO-F/ DN 150 PN 16
DN 3	DN 160 ISO-F/ DN 150 PN 16	DN 160 ISO-F/ DN 150 PN 16	DN 160 ISO-F/ DN 150 PN 16



Convection-cooled – OktaLine

Dimensions

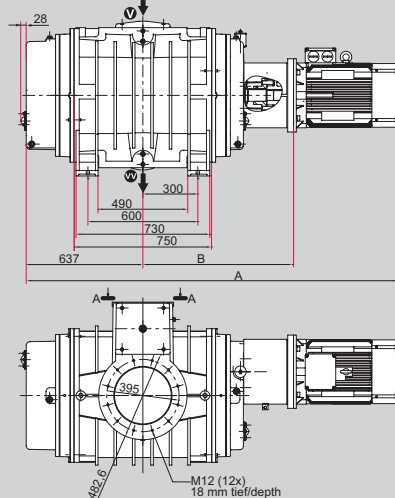
Okta 6000



	Okta 6000 standard	Okta 6000 without motor	Okta 6000 M
A	1867 mm	-	1930 mm
B	741 mm	741 mm	803 mm
C	560 mm	560 mm	510 mm
D	400 mm	400 mm	390 mm

Connections			
DN 1	DN 250 ISO-F/ DN 250 PN 16	DN 250 ISO-F/ DN 250 PN 16	DN 250 ISO-F/ DN 250 PN 16
DN 2	DN 160 ISO-F/ DN 150 PN 16	DN 160 ISO-F/ DN 150 PN 16	DN 160 ISO-F/ DN 150 PN 16
DN 3	DN 160 ISO-F/ DN 150 PN 16	DN 160 ISO-F/ DN 150 PN 16	DN 160 ISO-F/ DN 150 PN 16

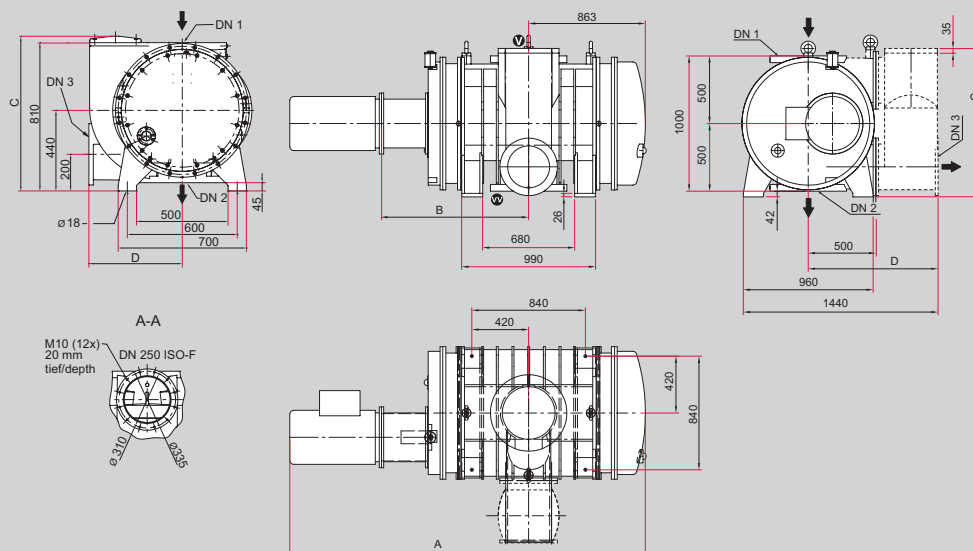
Okta 8000



	Okta 8000 standard	Okta 8000 without motor
A	2160 mm	-
B	791 mm	791 mm
C	845 mm	845 mm
D	510 mm	510 mm

Connections		
DN 1	DN 320 ISO-F	DN 320 ISO-F
DN 2	DN 320 ISO-F	DN 320 ISO-F
DN 3	DN 250 ISO-F	DN 250 ISO-F

Okta 18000



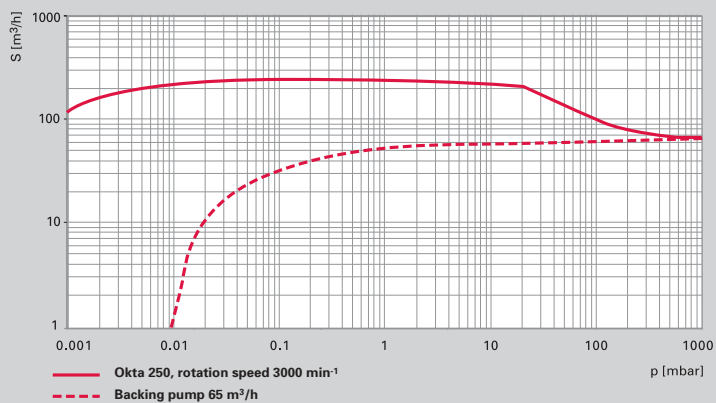
	Okta 18000 standard	Okta 18000 without motor
A	2789 mm	-
B	1090 mm	1090 mm
C	1099 mm	1099 mm
D	960 mm	960 mm

Connections		
DN 1	DN 400 PN 10	DN 400 PN 10
DN 2	DN 400 PN 10	DN 400 PN 10
DN 3	DN 320 ISO-F	DN 320 ISO-F

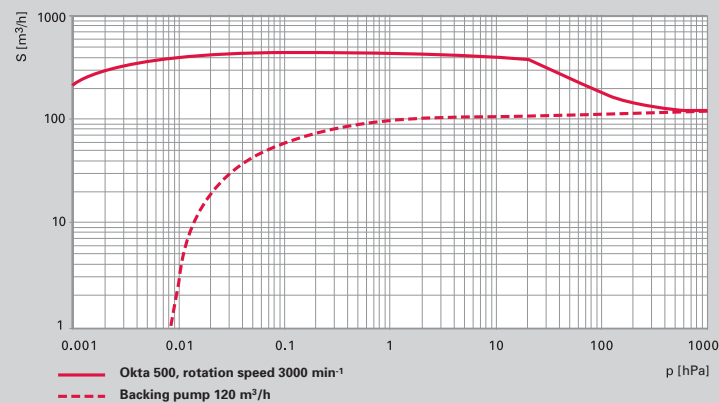


Pumping speed

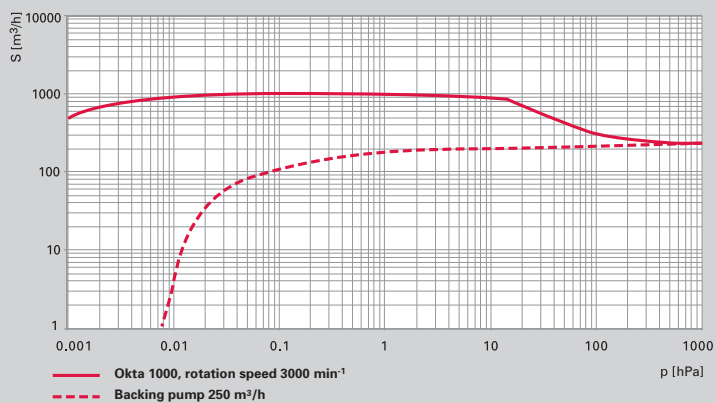
Okta 250



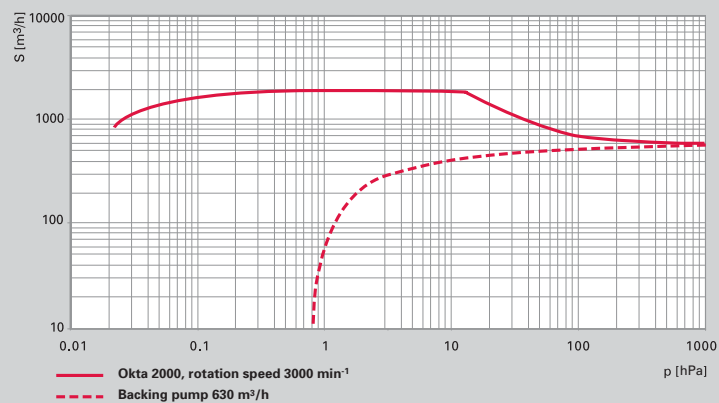
Okta 500



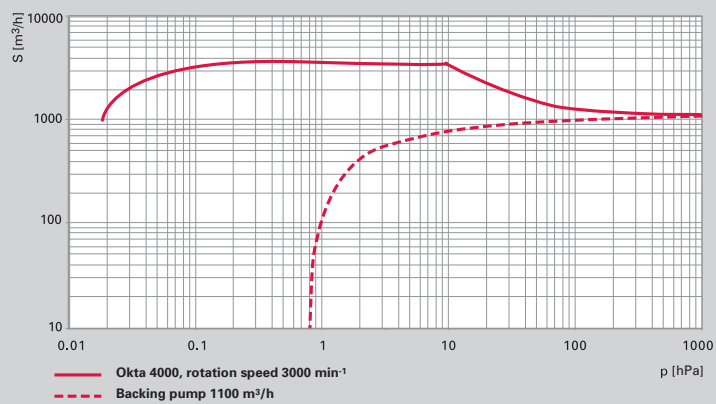
Okta 1000



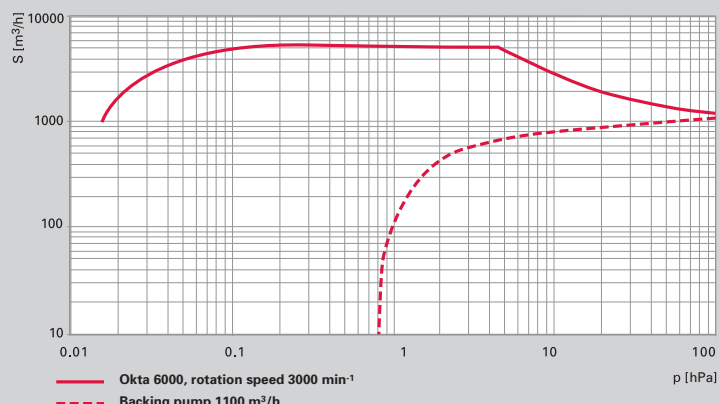
Okta 2000



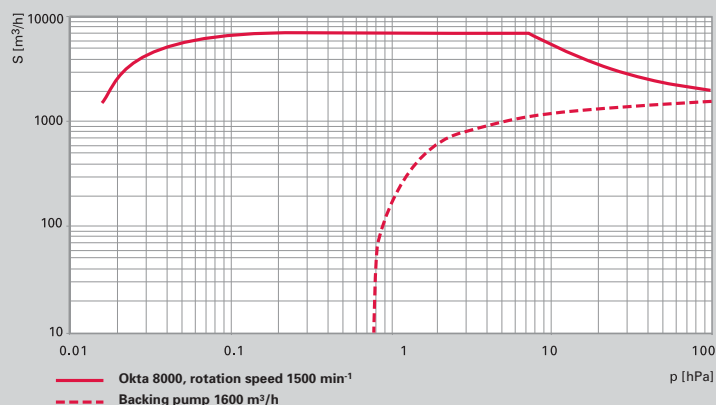
Okta 4000



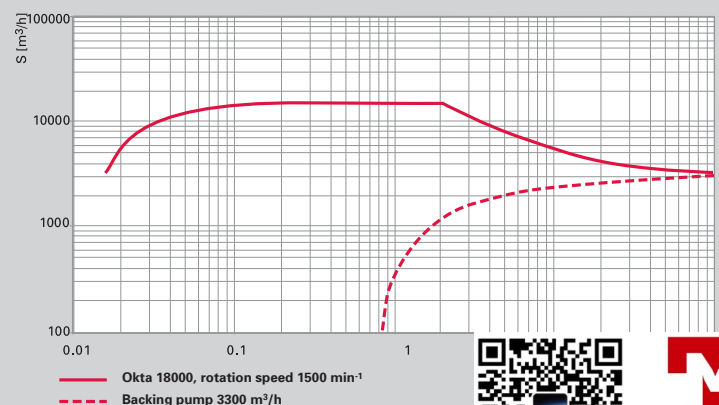
Okta 6000



Okta 8000



Okta 18000





Convection-cooled – OktaLine

Technical data

Pump type	Okta 250	Okta 500	Okta 1000
Flange (out)	DN 63 ISO-F	DN 100 ISO-F	DN 100 ISO-F
Flange (in)	DN 63 ISO-F	DN 100 ISO-F	DN 160 ISO-F
Operating fluid ¹⁾	P3	P3	P3
Operating fluid filling	1.5 l	1.5 l	2.9 l
Differential pressure at the overflow valve ²⁾	75 hPa	75 hPa	45 hPa
Rotation speed max.	4500 min ⁻¹	4500 min ⁻¹	4500 min ⁻¹
Rotation speed min.	1500 min ⁻¹	1500 min ⁻¹	1500 min ⁻¹
Emission sound pressure level (EN ISO 2151) at intake pressure 10 hPa	75 dB (A)	75 dB (A)	75 dB (A)
Emission sound pressure level (EN ISO 2151) at intake pressure 1 hPa	70 dB (A)	70 dB (A)	72 dB (A)
Weight: with motor	95 kg	132 kg	240 kg
Weight: without motor	85 kg	115 kg	215 kg
Weight: with magnet coupling	122 kg	145 kg	265 kg
Cooling method, standard	Luft	Air	Air
Leak rate: standard	1 · 10 ⁻³ Pa m ³ /s	1 · 10 ⁻³ Pa m ³ /s	1 · 10 ⁻³ Pa m ³ /s
Leak rate: with magnet coupling	1 · 10 ⁻⁶ Pa m ³ /s	1 · 10 ⁻⁶ Pa m ³ /s	1 · 10 ⁻⁶ Pa m ³ /s
Motor protection	3TF	3TF	3TF
Nominal rotation speed at 50 Hz	3000 min ⁻¹	3000 min ⁻¹	3000 min ⁻¹
Nominal rotation speed at 60 Hz	3600 min ⁻¹	3600 min ⁻¹	3600 min ⁻¹
Rated power 50 Hz	0.75 kW	1.5 kW	3.0 kW
Rated power 60 Hz	0.90 kW	1.8 kW	3.5 kW
Nominal pumping speed	145–440 m ³ /h	280–840 m ³ /h	590–1775 m ³ /h
Nominal pumping speed at 50 Hz	290 m ³ /h	560 m ³ /h	1180 m ³ /h
Nominal pumping speed at 60 Hz	350 m ³ /h	670 m ³ /h	1420 m ³ /h
Mains requirement: voltage 50 Hz	230/400 V	230/400 V	230/400 V
Mains requirement: voltage 60 Hz	265/460 V	265/460 V	265/460 V
Protection category	IP 55	IP 55	IP 55
Ambient temperature	5–40 °C	5–40 °C	5–40 °C

Order number

Okta (Standard)	PP W21 000	PP W31 000	PP W41 000
Okta without motor	PP W21 001	PP W31 001	PP W41 001
Okta M	PP W22 000	PP W32 000	PP W42 000

Accessories

Splinter shield	PK 300 010 -X	PP 030 149 AX	PP 031 114 -X
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¹⁾ Additional equipment and motor voltages available upon request.

²⁾ The differential pressure at the overflow valve is based on a nominal speed of 60 Hz; for higher speeds or pressure differentials please contact the Pfeiffer Vacuum sales department.



Okta 2000	Okta 4000	Okta 6000	Okta 8000	Okta 18000
DN 100 ISO-F	DN 160 ISO-F/ DN 150 PN 16	DN 160 ISO-F/ DN 150 PN 16	DN 320 ISO-F	DN 400 PN 10
DN 160 ISO-F	DN 250 ISO-F/ DN 250 PN 16	DN 250 ISO-F/ DN 250 PN 16	DN 320 ISO-F	DN 400 PN 10
P3	P3	P3	P3	P3
5 l	6.8 l	6.8 l	21 l	68 l
35 hPa	25 hPa	20 hPa	23 hPa	7 hPa
4500 min ⁻¹	4500 min ⁻¹	4500 min ⁻¹	2250 min ⁻¹	2250 min ⁻¹
1500 min ⁻¹	1500 min ⁻¹	1500 min ⁻¹	1200 min ⁻¹	1200 min ⁻¹
75 dB (A)	79 dB (A)	79 dB (A)	78 dB (A)	79 dB (A)
72 dB (A)	74 dB (A)	74 dB (A)	74 dB (A)	75 dB (A)
340 kg	640 kg	840 kg	1660 kg	3100 kg
290 kg	520 kg	715 kg	1480 kg	2800 kg
360 kg	655 kg	875 kg	–	–
Air	Air	Air	Air	Air
1 · 10 ⁻³ Pa m ³ /s	1 · 10 ⁻³ Pa m ³ /s	1 · 10 ⁻³ Pa m ³ /s	1 · 10 ⁻³ Pa m ³ /s	1 · 10 ⁻³ Pa m ³ /s
1 · 10 ⁻⁶ Pa m ³ /s	1 · 10 ⁻⁶ Pa m ³ /s	1 · 10 ⁻⁶ Pa m ³ /s	–	–
3TF	3TF	3TF	3TF	3TF
3000 min ⁻¹	3000 min ⁻¹	3000 min ⁻¹	1500 min ⁻¹	1500 min ⁻¹
3600 min ⁻¹	3600 min ⁻¹	3600 min ⁻¹	1800 min ⁻¹	1800 min ⁻¹
5.5 kW	11.0 kW	15.0 kW	22 kW	45 kW
6.3 kW	13.2 kW	18.5 kW	25 kW	52 kW
1075-3230 m ³ /h	2160-6490 m ³ /h	3240-9730 m ³ /h	3350-12550 m ³ /h	7310-27400 m ³ /h
2155 m ³ /h	4325 m ³ /h	6485 m ³ /h	8370 m ³ /h	18270 m ³ /h
2585 m ³ /h	5190 m ³ /h	7785 m ³ /h	10040 m ³ /h	21925 m ³ /h
230/400 V	400/690 V	400/690 V	400/690 V	400/690 V
265/460 V	460 V	460 V	460 V	460 V
IP 55	IP 55	IP 55	IP 55	IP 55
5-40 °C	5-40 °C	5-40 °C	5-40 °C	5-40 °C
PP W61 000	PP W71 000	PP W76 000	PP W80 000	PP W90 000
PP W61 001	PP W71 001	PP W76 001	PP W80 001	PP W90 001
PP W62 000	PP W72 000	PP W77 000		
PP 031 114 -X	PP 031 136 -X	PP 031 136 -X	PP 030 152 -X	PP 030 336 -T





Gas-circulation-cooled – OktaLine G

High differential pressures with lower power consumption

High pressure ranges and maximum differential pressures, in continuous operation up to 870 hPa, are ideal operating conditions for gas-circulation-cooled Roots pumps in the OktaLine G series.

At various power ratings from 5.5 kW up to a nominal rating of 200 kW, a pumping speed of 210 to 12,000 m³/h can be achieved. Gas-circulation-cooled Roots pumps can be operated without backing pumps.

Thanks to the frequency converter, energy use can be significantly reduced. Pumping speeds can be precisely adjusted. Gas-circulation-cooled Roots pumps are characterized by maximum reproducibility in process technologies and significantly lower operating costs compared to vacuum process pumps, such as injectors or liquid ring pumps.

Used as stand-alone pumps, they can be used in the pressure range from 130 to 1,013 hPa. Connecting two of these pumps in series enables the ultimate pressure to be reduced to 20 to 30 hPa. In combination with further Roots pumps the possible ultimate pressure can be reduced to the medium vacuum range. The motors and gas coolers needed for operation are both designed to meet process-specific requirements. In combination with Roots pumps it is possible in many cases to dispense with a pumping stage by using the OktaLine G, which saves money and significantly increases operating reliability. Other specific parts such as couplings, temperature sensors, spray equipment and base frames are available as optional components.

Customer benefits

- Ample pumping speed range from 210 to 12,000 m³/h
- High pressure differences
- Flexibility and process adaptation, due to the motor power and frequency converter design.
- Thermal process gas line with OktaLine G and gas coolers
- Maintenance free, maximum reliability and highest uptime thanks to magnetic coupling (optional)





Applications

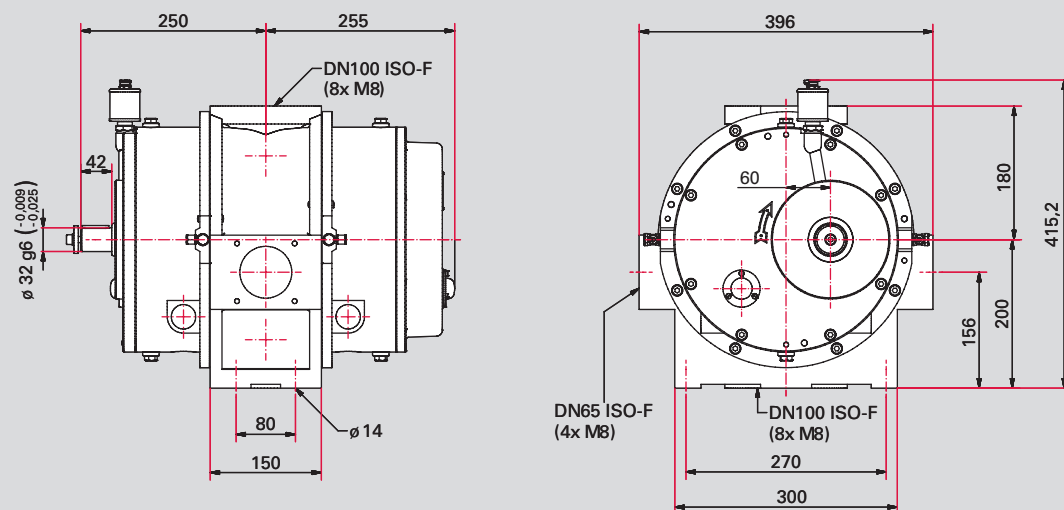
- Electron beam welding
- Vacuum furnaces
- Plasma research
- Particle accelerators
- Space simulation
- Chemical and process technology



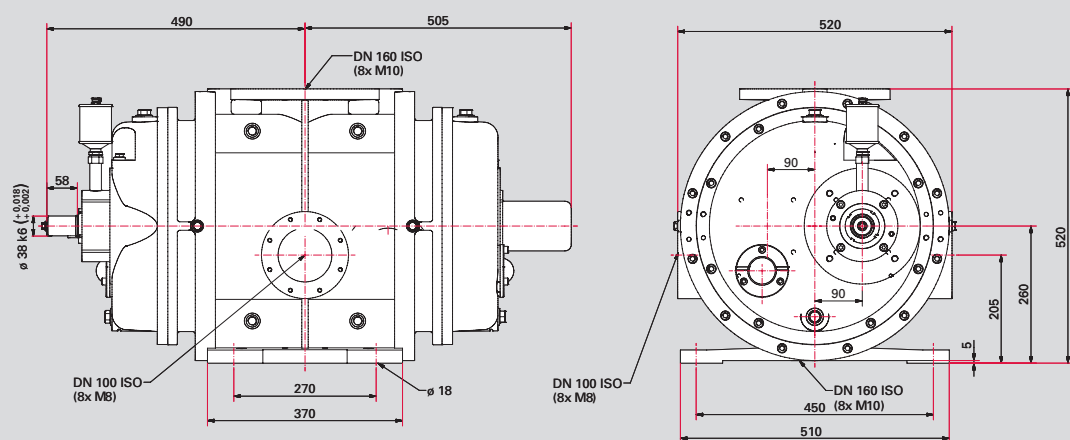
Gas-circulation-cooled – OktaLine G

Dimensions

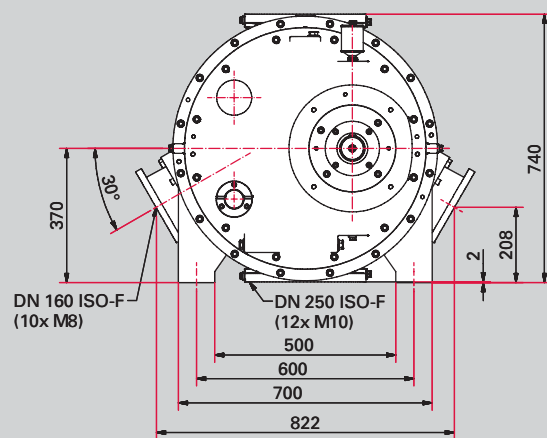
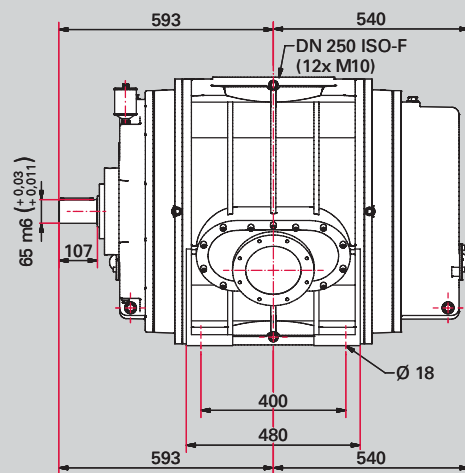
Okta 500 G



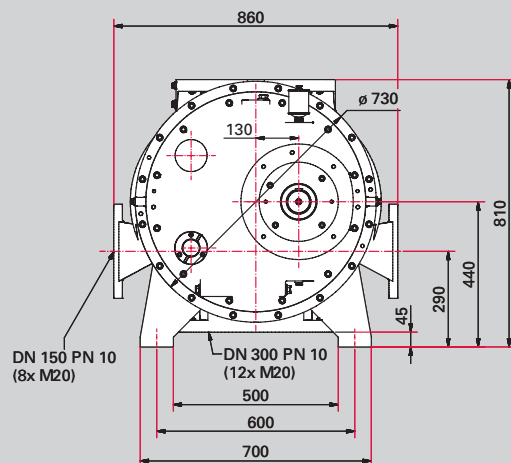
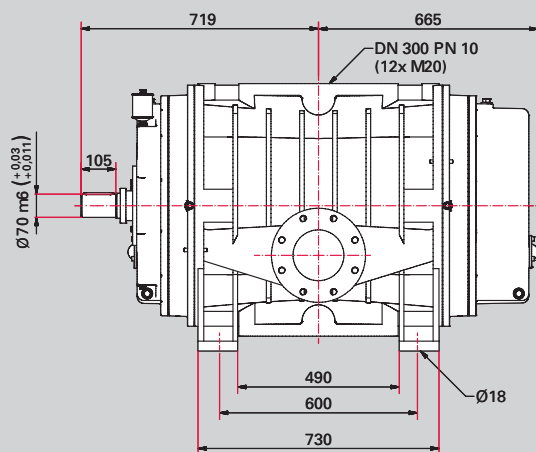
Okta 1500 G



Okta 4000 G



Okta 8000 G

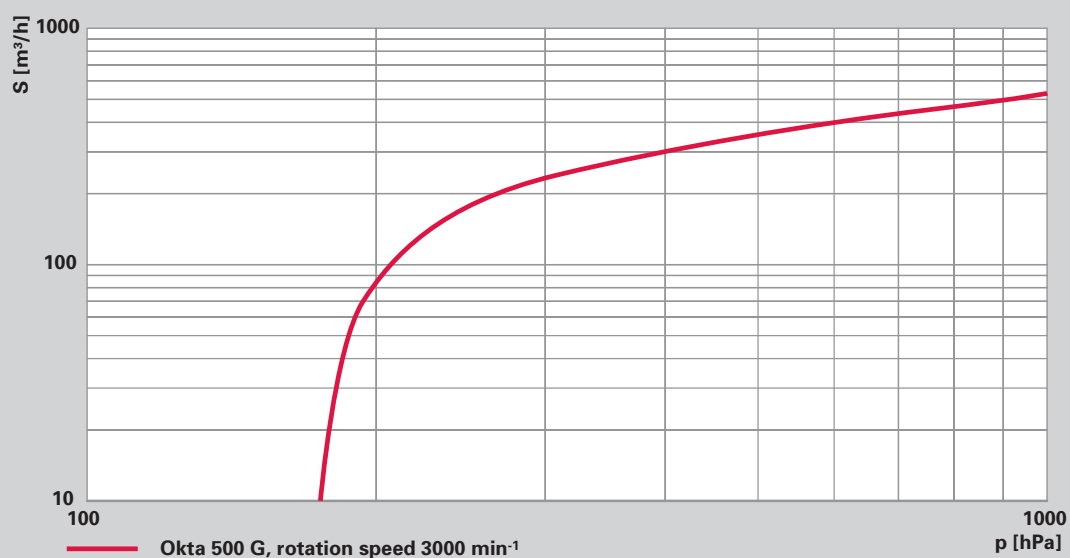




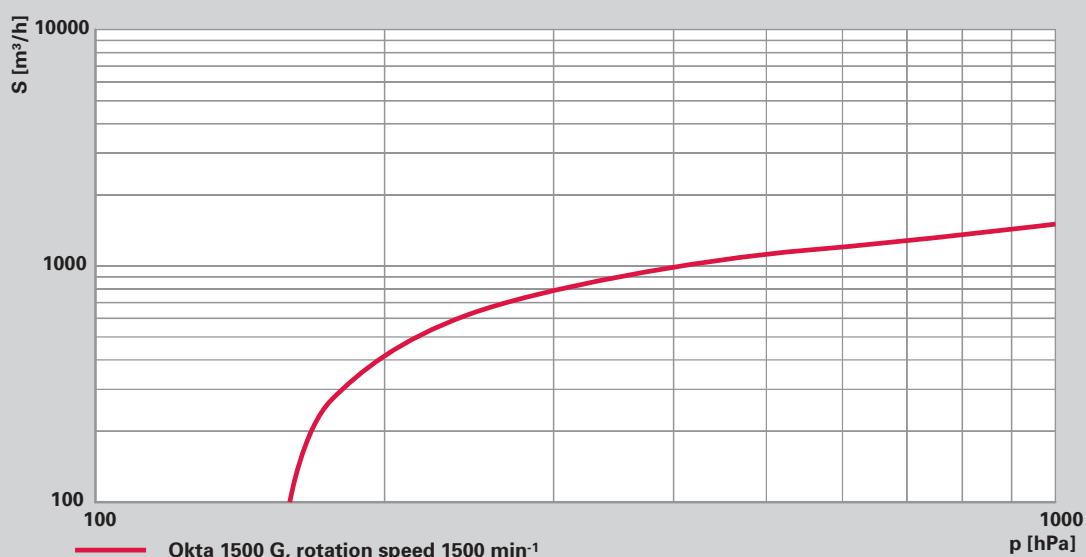
Gas-circulation-cooled – OktaLine G

Pumping speed

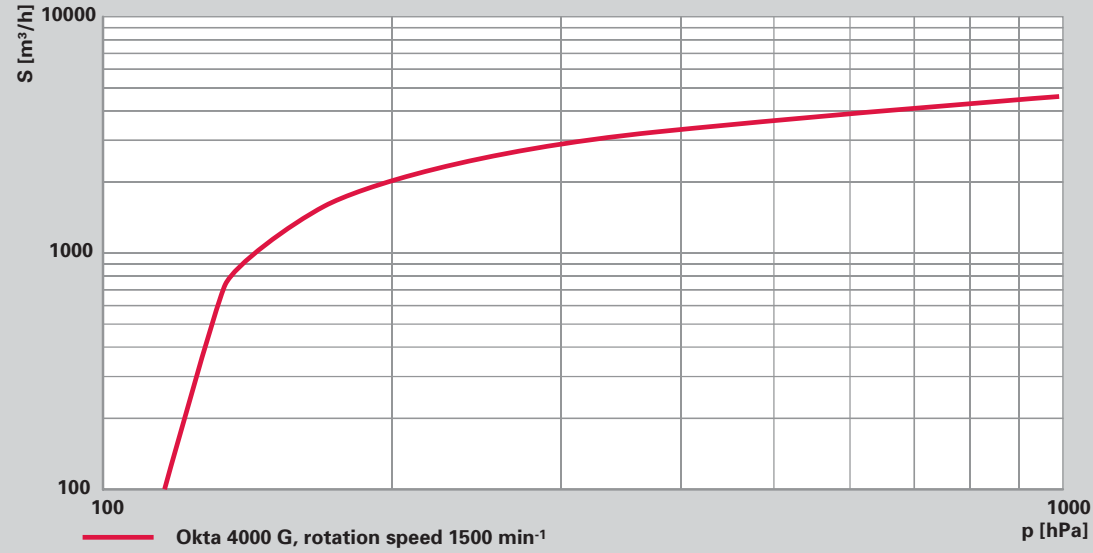
Okta 500 G



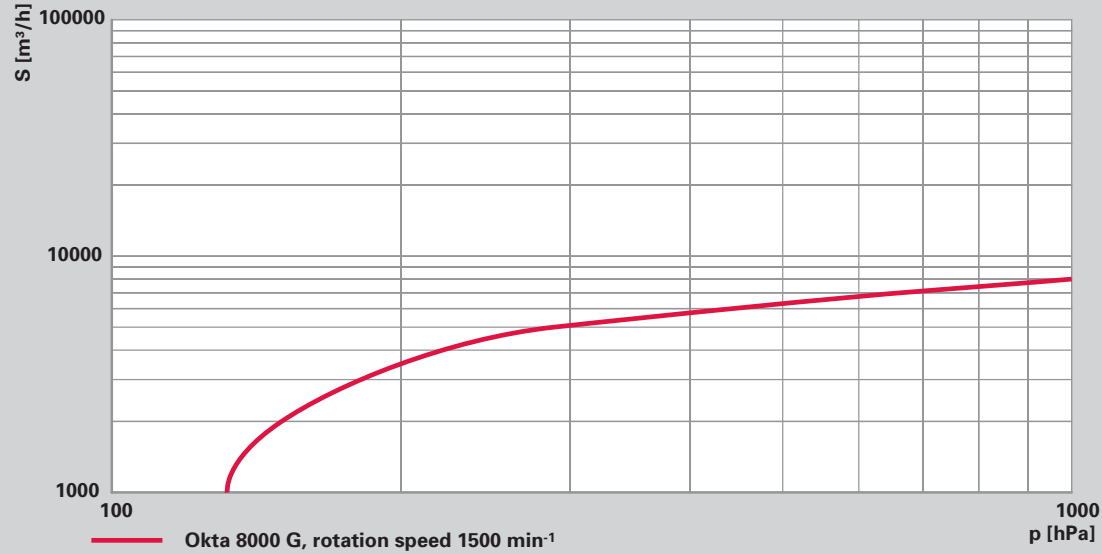
Okta 1500 G



Okta 4000 G



Okta 8000 G





Gas-circulation-cooled – OktaLine G

Technical data

Pump type	Okta 500 G	Okta 1500 G
Flange (out)	DN 100 ISO-F	DN 160 ISO-F
Flange (in)	DN 100 ISO-F	DN 160 ISO-F
Operating fluid ¹⁾	P3	P3
Operating fluid filling	3 l	7 l
Rotation speed	from 1200 to 3600 min ⁻¹	from 750 to 3600 min ⁻¹
Rotation speed max.	3600 min ⁻¹	3600 min ⁻¹
Rotation speed min.	1200 min ⁻¹	750 min ⁻¹
Ultimate pressure without gas ballast	130 hPa	130 hPa
Weight: without motor	125 kg	460 kg
Cooling method, standard	Gas-cooled	Gas-cooled
Cooling gas connection	DN 63 ISO-F	DN 100 ISO-F
Leak rate	1 · 10 ⁻³ Pa m ³ /s	1 · 10 ⁻³ Pa m ³ /s
Motor rating	max. 18.5 kW	max. 2 x 30 kW
Nominal rotation speed at 50 Hz	3000 min ⁻¹	1500 min ⁻¹
Nominal rotation speed at 60 Hz	3600 min ⁻¹	1800 min ⁻¹
Nominal pumping speed	210-630 m ³ /h	750-3600 m ³ /h
Nominal pumping speed at 50 Hz	520 m ³ /h	1500 m ³ /h
Nominal pumping speed at 60 Hz	630 m ³ /h	1800 m ³ /h
Noise level with connected exhaust line	75-105 dB (A)	75-105 dB (A)
Protection category	IP 55	IP 55
Sealing gas	Yes	Yes
Ambient temperature	5-40 °C	5-40 °C

Order number

Okta G	PP G30 001	PP G50 001
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Accessories

Splinter shield für Okta G	PP 030 149 AX	PP 031 114 -X
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¹⁾ Additional equipment and motor voltages available upon request.



Okta 4000 G	Okta 8000 G
DN 250 ISO-F	DN 300 PN 10
DN 250 ISO-F	DN 300 PN 10
P3	P3
21 l	21 l
from 750 to 2250 min ⁻¹	from 750 to 2250 min ⁻¹
2250 min ⁻¹	2250 min ⁻¹
750 min ⁻¹	750 min ⁻¹
130 hPa	130 hPa
1150 kg	1500 kg
Gas-cooled	Gas-cooled
DN 160 ISO-F	DN 150 PN 10
1 · 10 ⁻³ Pa m ³ /s	1 · 10 ⁻³ Pa m ³ /s
max. 132 kW	max. 200 kW
1500 min ⁻¹	1500 min ⁻¹
1800 min ⁻¹	1800 min ⁻¹
2300-6900 m ³ /h	4000-12000 m ³ /h
4600 m ³ /h	8000 m ³ /h
5500 m ³ /h	9600 m ³ /h
75-105 dB (A)	75-105 dB (A)
IP 55	IP 55
Yes	Yes
5-40 °C	5-40 °C

PP G70 001	PP G80 001
PP 031 136 -X	PP 070 315 -U

Explosion-protected – OktaLine ATEX

Magnetic coupled Roots pumps with ATEX certification for low and medium vacuum application.

For processes that take place in explosive environments or for evacuating explosive gases we have developed ATEX certified pumps in accordance with directive 94/9/EC (ATEX 95), which meet the high requirements for explosion protection.

Our Roots pumps offer pumping speeds ranging from 280 to 5,190 m³/h. Depending on the application, you can choose between equipment category 2G or 3G. All pumps are suitable for temperature class T3.

The gear box and bearing area in our Roots pumps are separated from the gas pumping chamber. Because the rotors operate contactfree, dry operation is assured.

A further advantage: Due to convection cooling, operating costs are significantly lower than with water cooling. The pumps can be utilized universally. The design principle of our proven Roots pumps has also been expanded to include magnetic couplings. Thanks to these hermetically sealed pumps we achieve very low leak rates.

For the operation of the pumps, the terms of the operating instructions apply. We are pleased to provide you with the right solution for your application!

Customer benefits

- Explosion safety due to reliable construction and temperature monitoring – installation without additional flame arrester possible
- Pumps are hermetically sealed (leakrate < 10⁻⁶ Pa m³/s) – risk of zone entrainment is minimized
- Pump can be operated without bypass (ATEX protection in case of passive rotation)
- Easiest on-site service even for the motor (can be changed on site thanks to standard ATEX IEC-motors)
- Flexible application due to variable differential pressure and rotational speed* – pump can start against atmospheric pressure
- Pressure surge resistance according to EN 1333, PN level 16

*when using a frequency converter





Applications

- Heat treatment
- Vacuum drying
- Vacuum furnaces
- Biotechnology
- Chemical and process technology

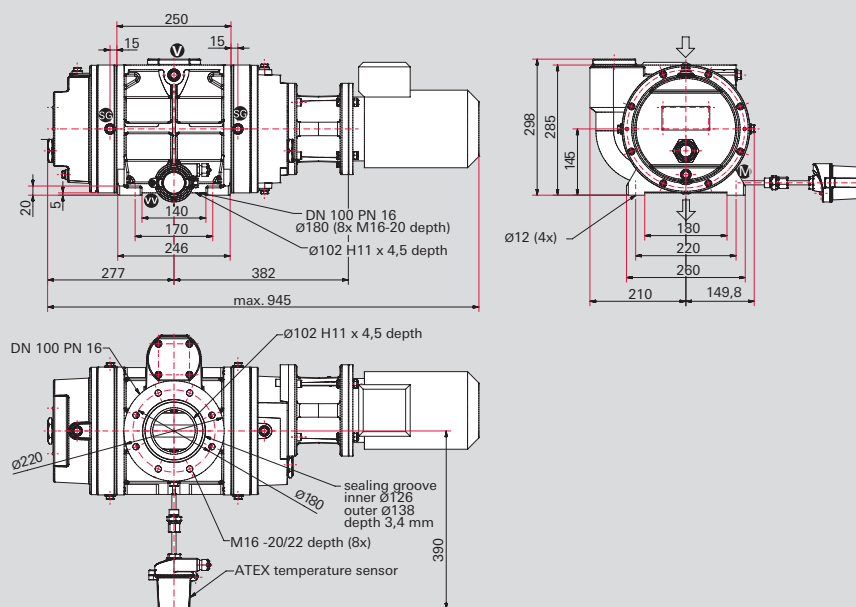




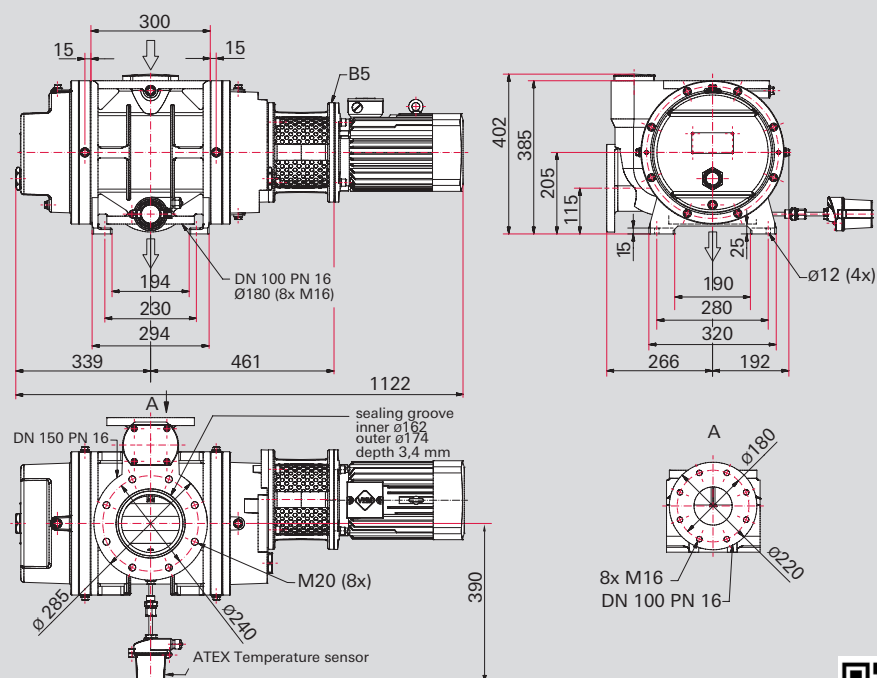
Explosion-protected – OktaLine ATEX

Dimensions

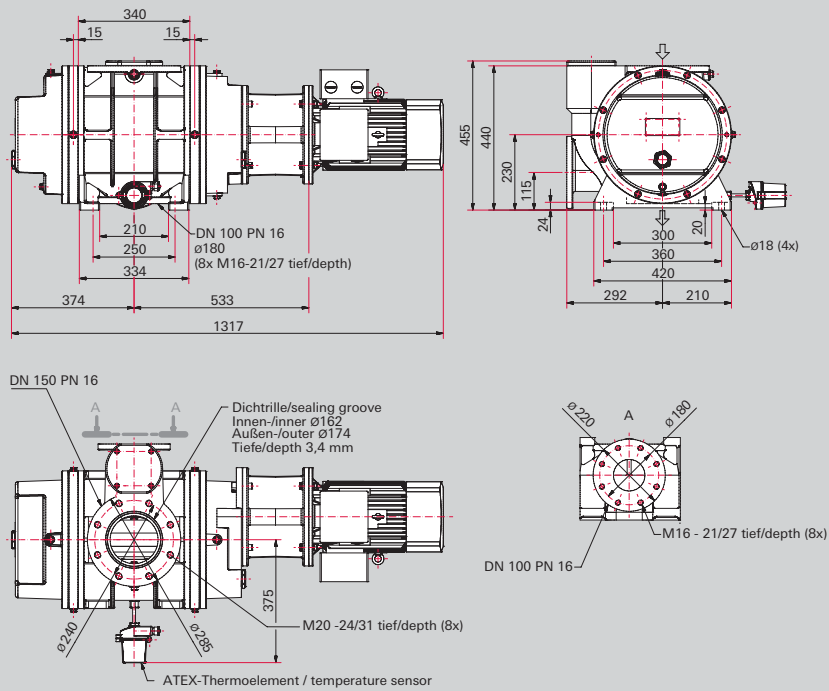
Okta 500 ATEX



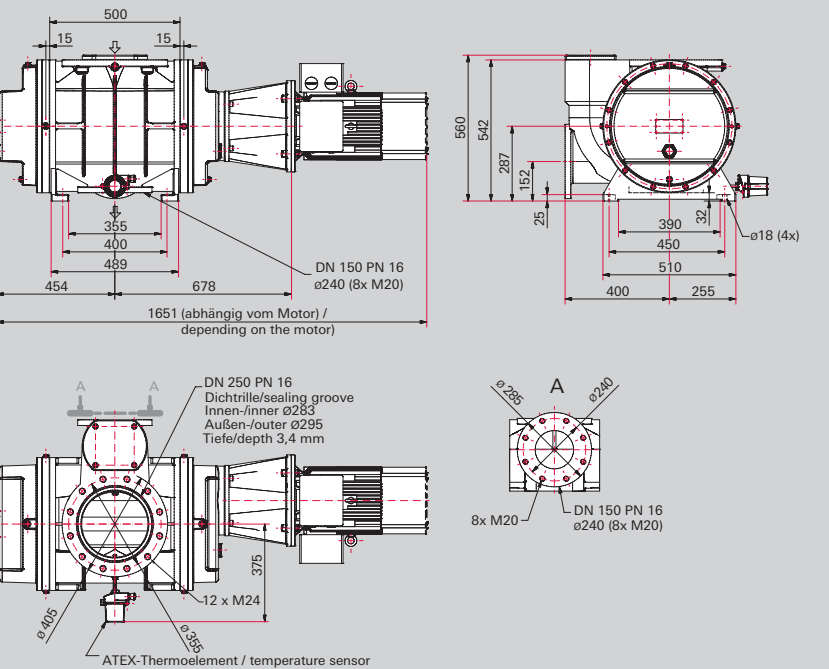
Okta 1000 ATEX



Okta 2000 ATEX



Okta 4000 ATEX

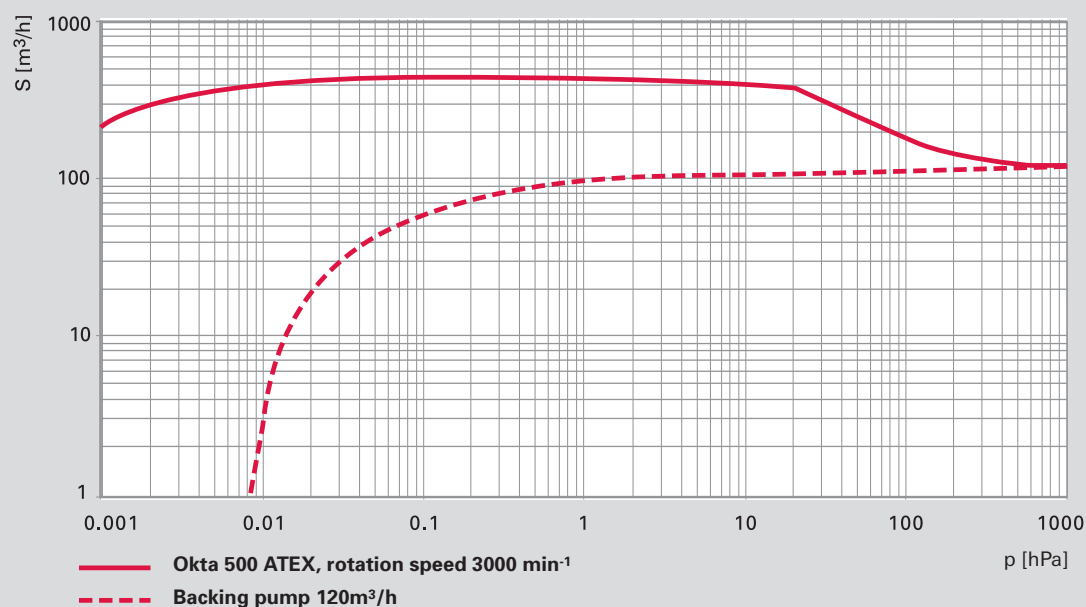




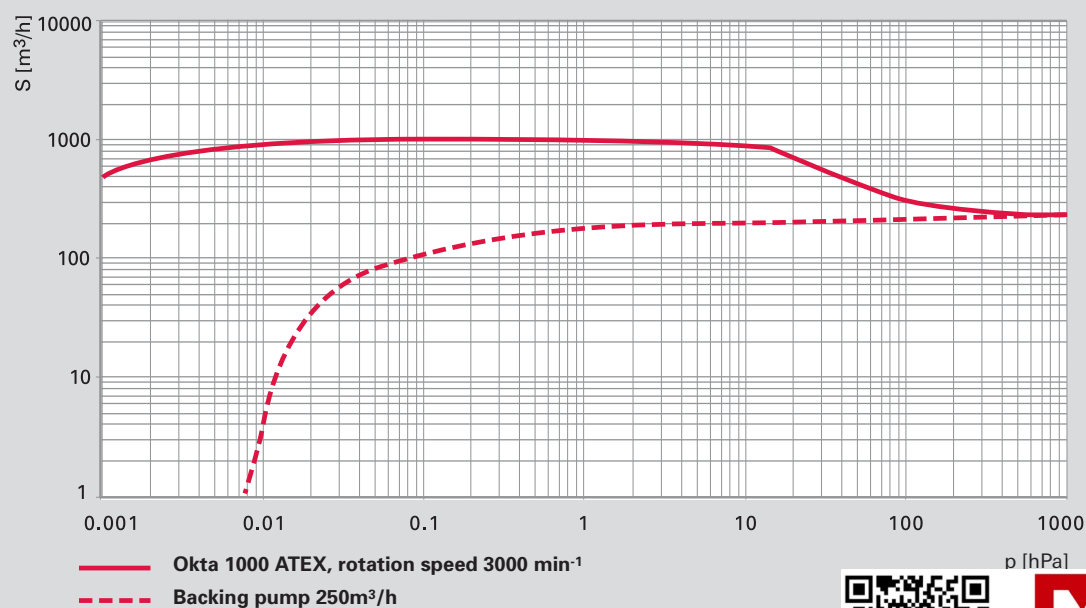
Explosion-protected – OktaLine ATEX

Pumping speed

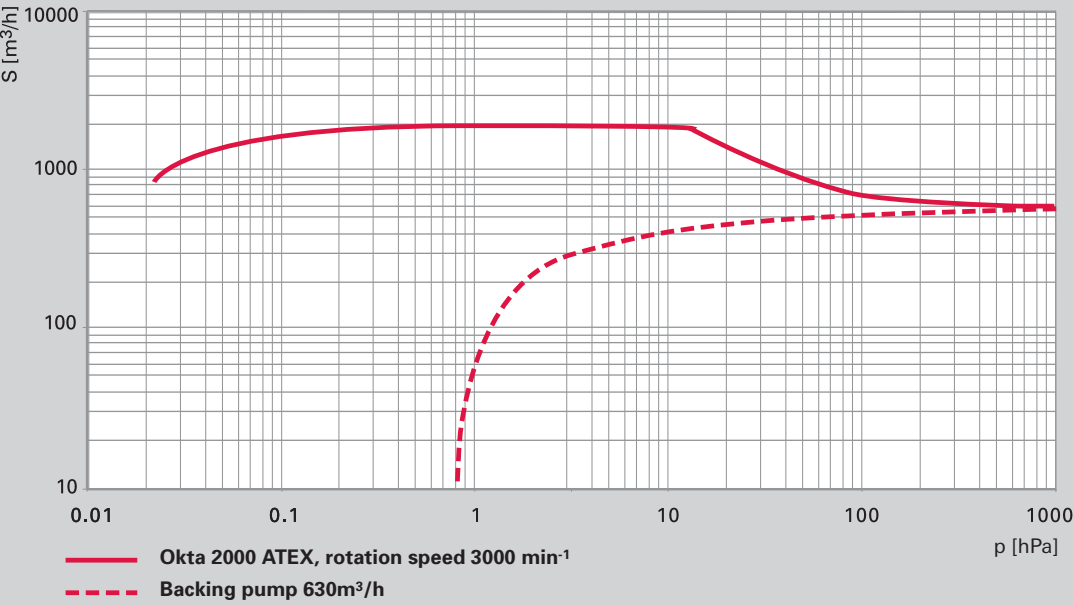
Okta 500 ATEX



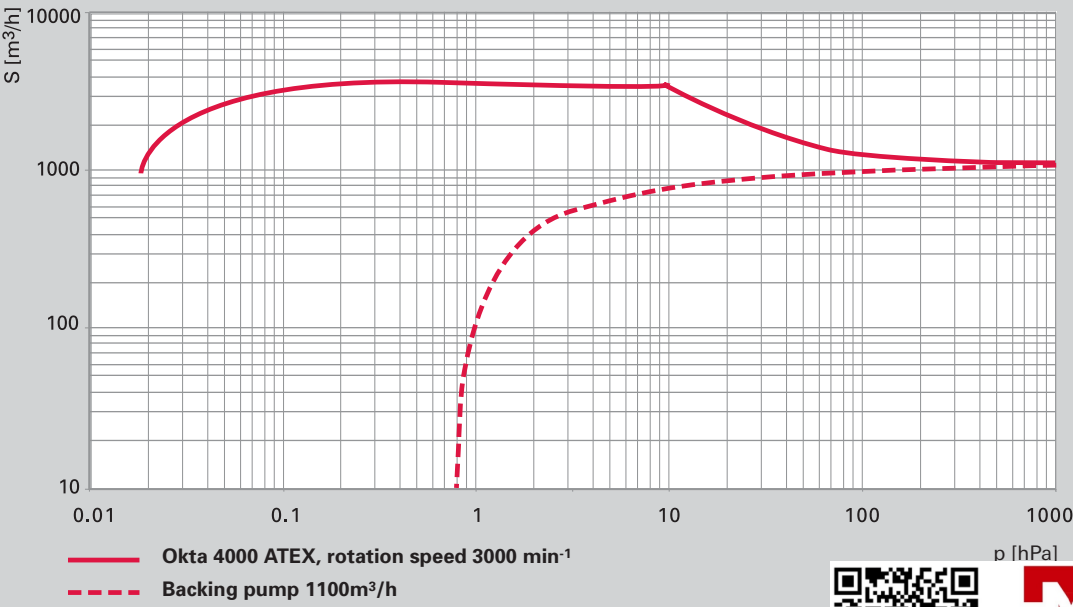
Okta 1000 ATEX



Okta 2000 ATEX



Okta 4000 ATEX





Explosion-protected – OktaLine ATEX

Technical data

Pump type	Okta 500 ATEX	Okta 1000 ATEX
Flange (out)	DN 100 PN 16	DN 100 PN 16
Flange (in)	DN 100 PN 16	DN 150 PN 16
Version	ATEX with motor and magnetic coupling, blocked overflow-valve	ATEX with motor and magnetic coupling, blocked overflow-valve
Equipment category	2G ²⁾ or 3G ³⁾	2G ²⁾ or 3G ³⁾
Operating fluid ¹⁾	P3	P3
Operating fluid filling	1.5 l	2.9 l
Rotation speed	from 1500 to 3600 min ⁻¹	from 1500 to 3600 min ⁻¹
Rotation speed max.	3600 min ⁻¹	3600 min ⁻¹
Rotation speed min.	1500 min ⁻¹	1500 min ⁻¹
Emission sound pressure level (EN ISO 2151) at intake pressure 10 hPa	75 dB (A)	75 dB (A)
Emission sound pressure level (EN ISO 2151) at intake pressure 1 hPa	70 dB (A)	72 dB (A)
Weight: with motor	154 kg	255 kg
Cooling method, standard	Air	Air
Leak rate	1 · 10 ⁻⁶ Pa m ³ /s	1 · 10 ⁻⁶ Pa m ³ /s
Motor protection	3TF	3TF
Nominal rotation speed at 50 Hz	3000 min ⁻¹	3000 min ⁻¹
Nominal rotation speed at 60 Hz	3600 min ⁻¹	3600 min ⁻¹
Rated power 50 Hz	1.5 kW	3.0 kW
Rated power 60 Hz	1.8 kW	3.5 kW
Nominal pumping speed	280-670 m ³ /h	590-1420 m ³ /h
Nominal pumping speed at 50 Hz	560 m ³ /h	1180 m ³ /h
Nominal pumping speed at 60 Hz	670 m ³ /h	1420 m ³ /h
Mains requirement: voltage 50 Hz	230/400 V	230/400 V
Mains requirement: voltage 60 Hz	265/460 V	265/460 V
Protection category	IP 55	IP 55
Ambient temperature	5-40 °C	5-40 °C
Order number		
Okta ATEX (3G ³⁾)	PP W33 300	PP W43 300
Okta ATEX (2G ²⁾)	PP W33 400	PP W43 400

¹⁾ Additional equipment and motor voltages available upon request.

²⁾ According to ATEX directive 94/9/EC: II 2G IIB T3 X + 5 °C ≤ Ta ≤ +40 °C

³⁾ According to ATEX directive 94/9/EC: II 3G IIB T3 X + 5 °C ≤ Ta ≤ +40 °C



Okta 2000 ATEX	Okta 4000 ATEX
DN 100 PN 16	DN 150 PN 16
DN 150 PN 16	DN 250 PN 16
ATEX with motor and magnetic coupling, blocked overflow-valve	ATEX with motor and magnetic coupling, blocked overflow-valve
2G ²⁾ or 3G ³⁾	2G ²⁾ or 3G ³⁾
P3	P3
5 l	7 l
from 1500 to 3600 min ⁻¹	from 1500 to 3600 min ⁻¹
3600 min ⁻¹	3600 min ⁻¹
1500 min ⁻¹	1500 min ⁻¹
75 dB (A)	79 dB (A)
72 dB (A)	74 dB (A)
390 kg	700 kg
Air	Air
1 · 10 ⁻⁶ Pa m ³ /s	1 · 10 ⁻⁶ Pa m ³ /s
3TF	3TF
3000 min ⁻¹	3000 min ⁻¹
3600 min ⁻¹	3600 min ⁻¹
5.5 kW	11 kW
6.3 kW	13 kW
1080-2585 m ³ /h	2160-5190 m ³ /h
2155 m ³ /h	4325 m ³ /h
2585 m ³ /h	5190 m ³ /h
230/400 V	230/400 V
265/460 V	265/460 V
IP 55	IP 55
5-40 °C	5-40 °C
PP W63 300	PP W73 300
PP W63 400	PP W73 400



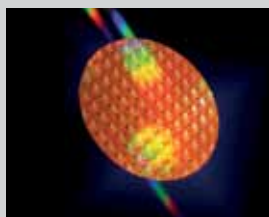
Vacuum solutions from a single source

Market segments and applications

The Vacuum solution

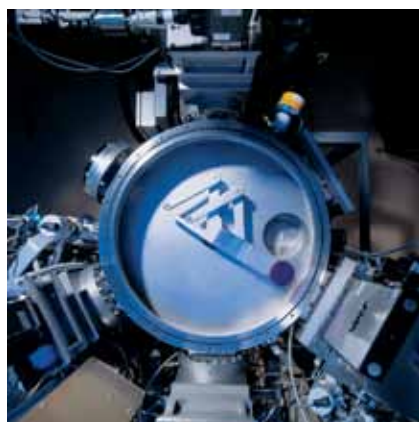
Providing solutions means understanding the customer. One vacuum is not just like another vacuum, the key lies in the specific requirements. Which process should be used with which materials to produce the right results? Under which environmental conditions? Our customers demand sophisticated and intelligent results – and rightly so. Their vacuums have to deliver stability and low-maintenance pumps as well as reduced energy and resource consumption.

A complete vacuum solution covers all processes and steps involved in creating perfect vacuum conditions including consultation, products, accessories, application training programs and service. Our customers' requirements usually involve a high level of complexity. They not only include the precise vacuum requirements but also specific needs covering the entire system, the materials and products to be used and processed as well as process conditions. This is why we develop customized vacuum solutions hand in hand with our customers.



Semiconductor

Sputter system



Customer benefits

- Extra long service intervals
- Low energy consumption of the vacuum pumps
- On-site service for all product lines from a single source



Vacuum solutions from a single source

Market segments and applications

Industry

Leak detection



Customer benefits

- Detection of smallest leakages
- High reproducibility
- High throughput and fast cycle times
- Maximum environmental benefit
- On-site service for all product lines from a single source



Research & Development

Accelerator



Customer benefits

- High reliability
- Special solution for accelerator applications
- Resistant to radioactive radiation
- Easy maintenance
- Highest quality and availability
- On-site service for all product lines from a single source



Vacuum solutions from a single source

Market segments and applications

Coating

Glass coating



Customer benefits

- Unmatched cost of ownership thanks to optimum pump design
- High availability due to robust design
- Largest product range in vacuum technology
- On-site service for all product lines from a single source



Analytics

Mass spectrometry



Customer benefits

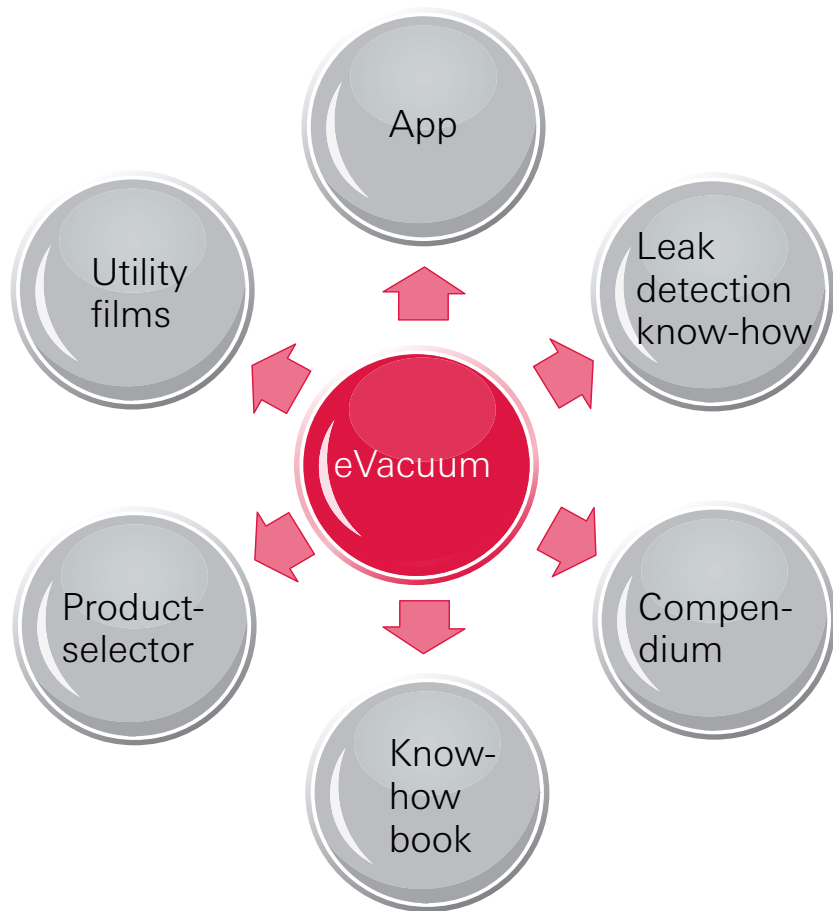
- Specially coordinated component selection
- Common interfaces and easy control
- Synchronization of vacuum generation and -measuring
- On-site service for all product lines from a single source



Vacuum solutions from a single source

Market segments and applications

eVacuum



Customer benefits

- Central point of contact for questions concerning vacuum technology for customers and employees
- Simple, comprehensive and interactive knowledge



Vacuum solutions from a single source

Product overview



Vacuum solutions from a single source

Product overview

Solutions

Consulting competence

Applications



Know-how

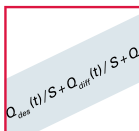


Experience

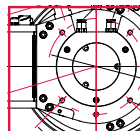


Customer intimacy

Products



Dimensioning



Engineering

eVacuum



Website



App

Vacuum generation

Service solutions

Worldwide quality



Representatives worldwide



Genuine parts



Training courses



Maintenance



...Austausch

Hybrid bearing



HiPace
Pumping speed
10 up to 2,000 l/s

Magnetically levitated



ATH M/HiPace M
Pumping speed
255 up to 2,800 l/s

Multi-stage



SplitFlow
Pumping speed
according to
requirement

Rotary vane pumps

Single-stage



UnoLine Plus
Pumping speed
250 up to 500 m³/h



HenaLine
Pumping speed
25 up to 1,000 m³/h



Pascal
Pumping speed
5.4 up to 15 m³/h



PentaLine
Pumping speed
22 up to 34 m³/h



DuoLine
Pumping speed
1.25 up to 250 m³/h



Pascal
Pumping speed
5.4 up to 60 m³/h

Two-stage

Diaphragm pumps



MVP
Pumping speed
0.25 up to 9.6 m³/h

Screw pumps



Heptal
Pumping
110 up to 1,000 m³/h

Side channel pumps



Vacuum solutions from a single source

Product overview

Vacuum generation

Roots pumps

Air cooled



OktaLine
Pumping speed
250 up to 25,000 m³/h

Gas cooled



OktaLine G
Pumping speed
250 up to 12,000 m³/h

Explosion-protected



OktaLine ATEX
Pumping speed
500 up to 4,000 m³/h

Multi-stage Roots pumps

Light duty



ACP 15-40
Dry and compact



A 100 L
Integrated
load lock pump



ACP 120/ACG 600
Dry, for industrial
application

Medium duty



A3P Serie
Energy efficient
process pump

Harsh duty



A3H Serie
Harsh processes for
semiconductor
industry

Turbo pumping stations

Compact



HiCube Eco
Pumping speed
35 up to 67 l/s

Standard



HiCube Classic
Pumping speed
35 up to 685 l/s

High performance



HiCube Pro
Pumping speed
35 up to 685 l/s,
short pump-down time

Roots pumping stations

With single-stage backing pump



CombiLine WU
Ultimate pressure
up to $2 \cdot 10^{-3}$ hPa

With two-stage backing pump



CombiLine WD
Ultimate pressure
up to $5 \cdot 10^{-4}$ hPa

With dry backing pump



CombiLine WH
Ultimate pressure
up to $2 \cdot 10^{-3}$ hPa

Compact pumping station



LRS
Pumping speed
150 up to 1,000 m³/h

Dry pumping station



DRS
Pumping speed
150 up to 1,000 m³/h

Vacuum measurement

Measurement equipment

Analog



ActiveLine
Total pressure
measurement

Digital



DigiLine
Total pressure
measurement

Modular



ModulLine
Total pressure
measurement for R&D

Residual gas analysis



PrismaPlus
Mass spectrometer
Mass range
1-300 u

Gas analysis



HiQuad
Mass spectrometer
Mass range
1-2048 u



OmniStar
Compact benchtop
analysis system



HPA
High Pressure
Pressure range
up to 50 hPa



Analysis equipment



Vacuum solutions from a single source

Product overview

Leak detection

Leak detectors

Portable	Compact	High performance				Workstation	Modular	Sniffing leak detection
								
MiniTest Mobile, even for harsh environments	ASM 310 Mobile service use	ASM 340 High performance all-rounder	ASM 380 Dry and mobile	ASM 182 T Robust industry standard	ASM 192 T Flexible console devices	ASM 1002 Ergonomical test station	ASI 30 Industrial leak detection systems	ASM 102 S Dry and portable

System technology

Plant construction

Contamination Management Solutions			Multi-stage vacuum process	Coating	Helium leak detection systems	Helium-Recoveryunits
						
APA Monitoring of contamination	APR Removal of contamination	ADPC Detection of contamination	Vacu² For die casting processes	Classic Coating systems	Complete systems	HRU Ballon and wessel systems

Vacuum components

Chambers

Standard	Customized
	
TrinosLine Cubical, horizontal/vertical, modular	TrinosLine Customized for specific customer applications

Components, valves, manipulators

Components	Hoses and flex connectors	Glass elements	Customized elements	Valves	Feedthroughs	Manipulators
						
ISO-KF, ISO-K, ISO-F, CF, COF	ISO-KF, ISO-K, CF	ISO-KF, ISO-K, ISO-F, CF	Customized for specific customer applications	Shut-off valves, gas dosing valves	Current/ fluids, in-combina	



**Vacuum solutions
from a single source**

Pfeiffer Vacuum stands for innovative and custom vacuum solutions worldwide, technological perfection, competent advice and reliable service.

**Complete range
of products**

From a single component to complex systems:
We are the only supplier of vacuum technology
that provides a complete product portfolio.

**Competence in
theory and practice**

Benefit from our know-how and our portfolio of training opportunities! We support you with your plant layout and provide first-class on-site service worldwide.

**Are you looking for a
perfect vacuum solution?
Please contact us:**

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