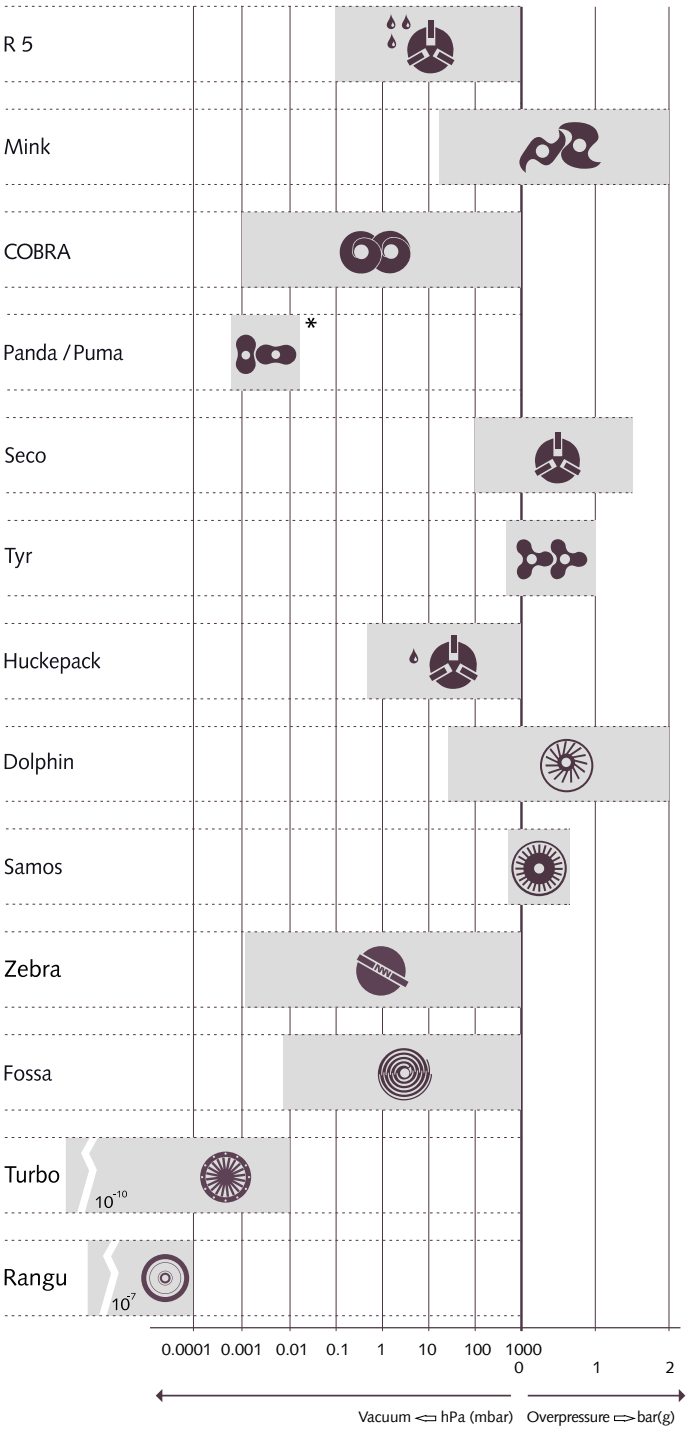
BUSCH
Vacuum Pumps and Systems

Busch Technology
Vacuum and Overpressure Solutions

Overview

Product Range Overview
Vacuum and Overpressure Solutions



** Depending on the backing pump*

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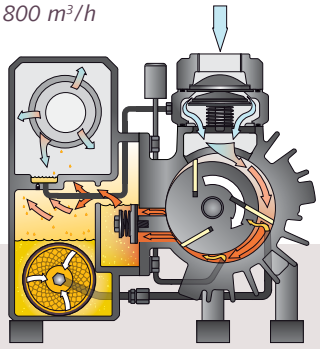
R 5

› Oil-lubricated Rotary Vane Vacuum Pumps

Ultimate Pressure: 0.1 - 20 hPa (mbar)
Pumping Speed 50 Hz: 4 - 1,600 m³/h
Pumping Speed 60 Hz: 4,8 - 1,800 m³/h



The robustness and operational reliability of oil-lubricated R 5 rotary vane vacuum pumps have long made them the industry standard. Every day over 2.5 million R 5 vacuum pumps worldwide provide dependable service under the harshest industrial conditions.

Safe and cost-effective

Rotary vane technology has been continuously developed and optimised by Busch over the decades, with the emphasis on operational reliability and efficiency. R 5 rotary vane vacuum pumps are known throughout the industry for their modern and energy-efficient vacuum generation, in a wide range of applications. Whether for intermittent or continuous use, you can rely on the R 5.

Proven

These compact R 5 vacuum pumps owe their robustness to proven rotary vane technology with recirculating oil lubrication. This guarantees a consistently high vacuum level which can cope with the toughest operating conditions. When fitted with a gas-ballast valve (optional), vapours can be pumped without condensation.

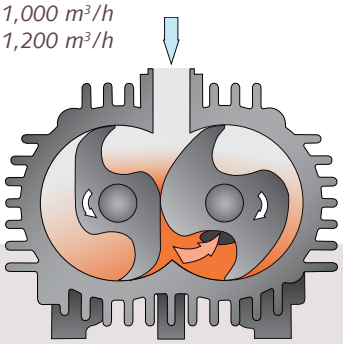
**R 5 – proven and reliable.
Over 2.5 million pumps in operation worldwide.**

R 5 RA 0160 D

Mink

› Claw Vacuum Pumps and Compressors

Ultimate Pressure: 60 - 250 hPa (mbar)
Overpressure: 2 bar(g)
Pumping Speed 50 Hz: 60 - 1,000 m³/h
Pumping Speed 60 Hz: 72 - 1,200 m³/h



Oil- and contact-free operation

Mink claw vacuum pumps have been developed specifically for industrial applications in which constant vacuum, high pumping speed and completely oil-free compression are essential. Mink claw vacuum pumps operate contact-free; neither oil nor operating fluids are required during compression.

Highly efficient

The sophisticated claw technology of Mink claw vacuum pumps permits extremely high efficiency levels to be achieved, reducing energy consumption and increasing performance. These vacuum pumps operate contact-free and require almost no maintenance. In practice, this means 60% lower energy and operating costs compared to conventional vacuum generators.

The same claw technology is also used for Mink compressors. They provide oil-free overpressure at up to 2 bar(g) and volume flows of up to 300 m³/h.

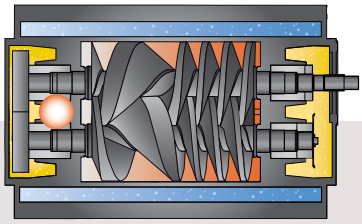
Mink – efficient and reliable vacuum and compressed air generation.

Mink MM 1402 AV

COBRA Industry

› Screw Vacuum Pumps

Ultimate Pressure: 0.01 - 1 hPa (mbar)
Pumping Speed 50 Hz: 100 - 2,000 m³/h
Pumping Speed 60 Hz: 120 - 2,500 m³/h



COBRA Industry dry screw vacuum pumps are highly efficient, and ideally suited to industrial applications which require reliable and contaminant-free extraction of gases and vapours.

Reliable and robust

The asymmetrical screw profile and free gas outlet allow for a high degree of fluid and particle compatibility. Optimum corrosion resistance is ensured by an even temperature distribution.
The outstanding efficiency levels reduce thermal stress and extend the service lifetime of the pump.

Application-orientated

COBRA Industry screw vacuum pumps are available in a range of application-specific versions, and can be finely tailored to suit any requirement. ATEX-certified versions are also available.

COBRA Industry – the robust and reliable solution for applications in medium and rough vacuum ranges.

COBRA NC 0400 B

COBRA Semicon

› Screw Vacuum Pumps

Ultimate Pressure: 0.001 - 0.005 hPa (mbar)
Pumping Speed: 100 - 9,000 m³/h

COBRA Semicon dry screw vacuum pumps are extremely efficient when used in highly demanding processes such as semiconductor, solar module and flat screen production, and in numerous industrial coating applications.

Efficient and reliable

Equipped with high-efficiency motors, COBRA Semicon screw vacuum pumps offer excellent energy savings potential. The simple design incorporates proven Busch screw profiles (optionally with an additional directly flange-mounted vacuum booster), making the COBRA Semicon an extremely powerful, reliable and low-maintenance vacuum generator.

Application-orientated

COBRA Semicon screw vacuum pumps are available in a wide variety of sizes and versions, permitting a perfect match to any process. Their compact construction simplifies installation, even when space is limited. Featuring the highest pumping speed in their class, these pumps offer the largest throughputs (even with hydrogen) and extensive tolerance to particles.

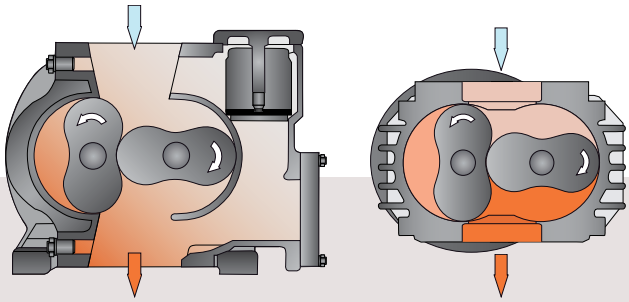
COBRA Semicon – the next level of high capacity harsh duty vacuum pumps.

COBRA DS 8161 D

Panda / Puma

› Vacuum Boosters

Pressure Differential: Δp max. 80 hPa (mbar)
Pumping Speed 50 Hz: 250 - 10,000 m³/h
Pumping Speed 60 Hz: 300 - 12,000 m³/h



Panda and Puma vacuum boosters are dry-running vacuum generators that can be used with a forepump in all rough and fine vacuum processes. In this type of vacuum system, these pumps act as a booster to greatly increase the output of the forepump.

Economical

Panda and Puma vacuum boosters are available in a large number of sizes and versions, allowing pumping speeds and ultimate pressures to be tailored exactly to the process conditions of the application. Their exceptional volumetric efficiency and oil- and contact-free operation ensure highly efficient performance.

Panda vacuum boosters are fitted with an integrated bypass valve, permitting them to be used for all differential pressures.

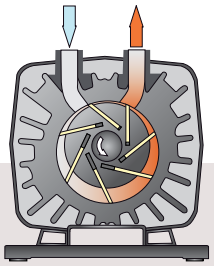
Panda / Puma – the economical performance optimisers.

Panda WV 4500 B / Puma WP 1000 D

Seco

› Dry-running Rotary Vane Vacuum Pumps and Compressors

Ultimate Pressure: 120 - 150 hPa (mbar)
Overpressure: 0.6 - 1.5 bar(g)
Pumping Speed 50 Hz: 3 - 40 m³/h
Pumping Speed 60 Hz: 3,6 - 48 m³/h



Compact, reliable and extremely powerful – these are the stand-out features of dry-running Seco rotary vane vacuum pumps. Their lubricant-free design makes them ideal for industrial applications in which rapid and reliable vacuum services are required.

Application-orientated

Seco rotary vane vacuum pumps are characterised by oil-free operation and high levels of availability and operational reliability. This is a result of design features such as hard-wearing and self-lubricating special graphite rotary vanes, robust construction and lifetime-lubricated bearings.
The compact dimensions of the pump allow installation to be carried out almost anywhere with ease, whilst the energy-efficient drive ensures economical operation.

Easy to service

Maintenance is easy, and can be carried out by the operator. Apart from regular checks and the replacement of rotor vanes and filters at recommended service intervals, no additional maintenance is required. Seco rotary vane technology is also used in compressors: Seco SD rotary vane compressors generate an overpressure of 1.5 bar(g) oil-free.

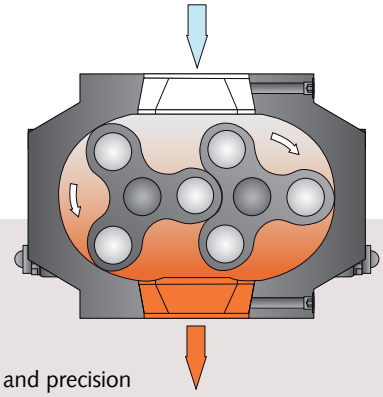
Seco – the dry solution. Compact and powerful.

Seco SV 1010 C

Tyr

› Rotary Lobe Blowers

Ultimate Pressure: 500 hPa (mbar)
Overpressure: 1 bar(g)
Pumping Speed: 150 - 4,380 m³/h



Thanks to their robust design and precision manufacture, Tyr rotary blowers are extremely dependable and operationally reliable. Constant differential pressure in both the vacuum and overpressure ranges is ensured at medium and high pumping speeds.

Application-orientated

Tyr rotary lobe blowers are available as vacuum generators and overpressure generators. The six different sizes can be individually adapted to suit any application perfectly by selecting the drive and varying the speed.
Depending on the version, the innovative noise insulation reduces noise emissions by 4 to 5 dB(A) compared to similar blowers. The acoustic cabinet (accessory) enables the noise level to be reduced by a further 15 to 20 dB(A).

Easy to service

Thanks to the non-contact operating principle, no operating fluid is required in the compression chamber. The operating pressure, filter and gear oil level can be monitored easily via displays on the housing/acoustic cabinet. Belt tensioning between the drive and the blower stage is performed automatically, eliminating the need for inconvenient checks and adjustment of v-belts.

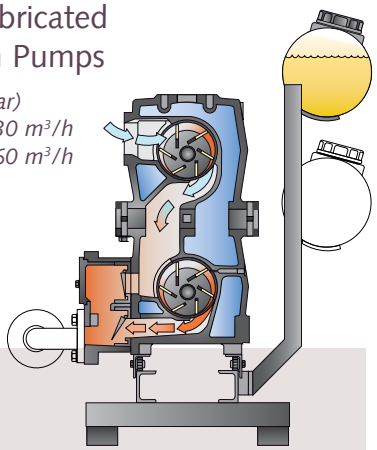
Tyr – powerful and quiet. The modern vacuum and overpressure generator.

Tyr WT 0390 AP

Huckepack

› Once-through Oil-lubricated Rotary Vane Vacuum Pumps

Ultimate Pressure: 0.5 hPa (mbar)
Pumping Speed 50 Hz: 160 - 630 m³/h
Pumping Speed 60 Hz: 190 - 760 m³/h



Huckepack oil-lubricated rotary vane vacuum pumps have proven themselves in the toughest of applications, and have demonstrated their robustness and operational reliability for decades.
All four sizes have a two-stage design. The fresh oil lubrication enables corrosive process gases or vapours to be pumped without problems.

Application-orientated

Huckepack rotary vane vacuum pumps can be optimally adapted to suit any process by choosing between radiator cooling (air cooled heat exchangers) and circuit cooling, and by selecting accessories from our extensive range. We also supply process-compatible lubricants and a range of liquids for vacuum pump flushing after the process has completed.

Easy to service

These two-stage rotary vane vacuum pumps are easy to maintain, thanks to their modular design. A stage can be replaced very quickly.

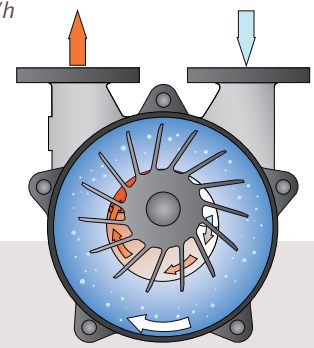
Huckepack – the robust and proven solution for difficult applications.

Huckepack HO 0433 F

Dolphin

› Liquid Ring Vacuum Pumps and Compressors

Ultimate Pressure: 33 - 150 hPa (mbar)
Overpressure: 2 bar(g)
Pumping Speed: 25 - 10,000 m³/h



Dolphin pumps are the robust and proven liquid ring vacuum pumps from Busch. They are available as single or two-stage pumps with a directly flange-mounted motor, or assembled on a base plate. Their proven operating principle allows them to be used in all industrial sectors. Even critical applications such as the evacuation of saturated gases and vapours are easily managed by Dolphin liquid ring vacuum pumps.

Reliable

Dolphin liquid ring vacuum pumps impress with their robust design. Thanks to the modular design of the base plate versions, custom systems can be produced easily to match specific processes.

Application-orientated

Dolphin liquid ring vacuum pumps are designed for continuous operation. Several sizes and versions are available, and the wide range of accessories and different workshop options allow vacuum pumps to be adapted to any process. Dolphin LX liquid ring vacuum pumps are also available in ATEX versions. Dolphin liquid ring technology can also be used for overpressure generation: Busch supplies Dolphin liquid ring compressors for overpressures of up to 2 bar(g).

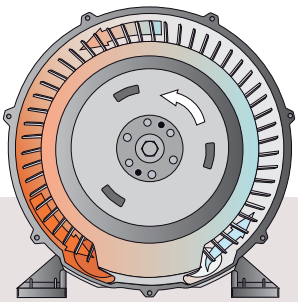
Dolphin – robust and compact. Ideal for difficult applications.

Dolphin LA 0906 A

Samos

› Side Channel Blowers

Pressure differential: Δp max. 500 hPa (mbar)
Pumping Speed 50 Hz: 45 - 2,200 m³/h
Pumping Speed 60 Hz: 54 - 2,600 m³/h



Samos side channel blowers may be used in all areas where pulsation-free vacuum and pressure services are required. Units may be installed horizontally or vertically. This is a very robust product.

Maintenance-free

Sealed-for-life bearings, a fan-cooled drive and a non-contact impeller all ensure that the Samos side channel blower is maintenance-free.

Environmentally safe

Samos side channel blowers are exceptionally environment-friendly, as they require no operating fluids. An internal silencer allows the Samos to run very quietly, whilst the drive has energy-efficient motors.

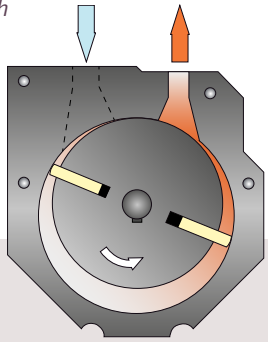
Samos – the economical solution for vacuum and overpressure applications.

Samos SI 1150 E

Zebra

› Oil-lubricated Rotary Vane Vacuum Pumps

Ultimate Pressure: 2 · 10^{-3} hPa (mbar)
Pumping Speed 50 Hz: 5,7 - 30,2 m^3/h
Pumping Speed 60 Hz: 6,8 - 36,4 m^3/h



Zebra is our series of two-stage rotary vane vacuum pumps for medium vacuum. Busch also offers proven technology for higher vacuum levels: the Zebra series two-stage rotary vane vacuum pumps for the fine vacuum sector.

Operationally reliable and cost-effective

Rotary vane technology has been continuously developed and optimised by Busch for 50 years. There has been a constant focus on both efficiency and operational reliability, resulting in highly efficient and economical products.

Application-orientated

Zebra vacuum pumps are characterised by high pumping speeds, even in low-pressure ranges, resulting in rapid evacuation times. The two-stage compression with circulating oil lubrication achieves ultimate pressures of $2 \cdot 10^{-3}$ hPa (mbar).

Easy to service

Apart from oil changes at the usual service intervals, additional maintenance is not required. Small flange connections allow simple and fast integration into the process.

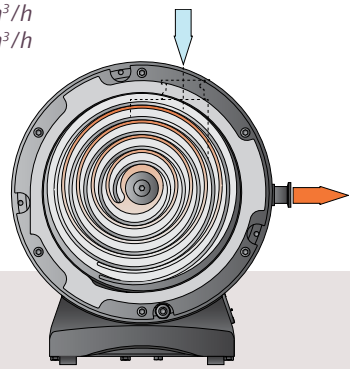
Zebra – reliable medium vacuum for demanding applications in industry and research.

Zebra RH 0021 A

Fossa

› Scroll Vacuum Pumps

Ultimate Pressure: 0.01 - 0.075 hPa (mbar)
Pumping Speed 50 Hz: 15 - 35 m^3/h
Pumping Speed 60 Hz: 18 - 42 m^3/h



Hermetically sealed and with completely dry compression, Fossa scroll vacuum pumps are ideal for pumping air or conveying gases without leakage or contact between the pumping medium and the ambient air.

Featuring two sizes, 15 and 35 m^3/h pumping speed, consistently high vacuum levels and very low noise and vibration levels, these vacuum pumps are everything that is expected from modern fine vacuum generation systems. Thanks to their compact design, Fossa scroll vacuum pumps require no special mounting and if required can be moved quickly for use at another location.

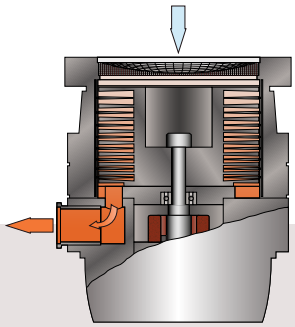
The low noise and vibration levels make the Fossa scroll vacuum pumps suitable for use directly in the workplace, for example in laboratories. They have no shaft seals and are equipped with lifetime-lubricated bearings as standard, consequently they require very little maintenance. Their high efficiency ensures maximum pumping speed with low energy consumption. A gas-ballast valve enables vapours to be pumped.

Fossa – hermetically sealed. Quiet and low vibration levels.

Fossa FO 0015 A

› Turbomolecular Vacuum Pumps

Ultimate Pressure: >1 · 10^{-10} - 1 · 10^{-8} hPa (mbar)
Pumping Speed: 1,080 - 2,200 l/s



Turbo is the product line of Busch turbomolecular vacuum pumps. Turbo vacuum pumps were developed for high vacuum industrial applications.

Oil-free

Turbo vacuum pumps are designed for high vacuum applications up to 1·10^{-10} hPa (mbar) and high pumping speeds or gas throughputs. Gases are conveyed without using any operating fluids.

Application-orientated

The high pumping speed of Turbo vacuum pumps is not compromised by high loads or unintentional gas break-ins. The innovative design of the ceramic bearing is completely free of oil and other possible contaminants. These vacuum pumps may be operated at any installation location.
The compact rotor design is unmatched in its class, and combines the highest possible throughput with the smallest possible dimensions.

Operationally reliable and safe

The drive and control unit is fully integrated into the pump housing, and features flush connecting gas seals as standard.

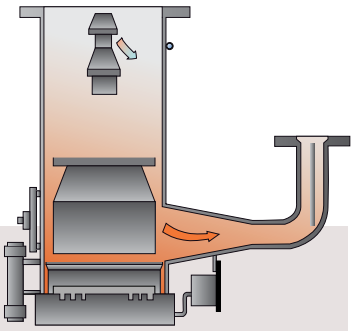
Turbo – for maximum power in industrial high vacuum processes.

Turbo TM 1600 A

Rangu

› Diffusion Vacuum Pumps

Ultimate Pressure: >1 · 10^{-7} hPa (mbar)
Pumping Speed: 10,000 - 28,000 l/s



Vacuum Systems

Tailored to Your Needs

› Innovations for tomorrow.

We design vacuum systems to meet the specific requirements of our customers' processes. 50 years of experience and the combined know-how from thousands of installations in many sectors enable us to provide our customers with the best possible vacuum or overpressure solution.
Close collaboration between design teams throughout the global Busch network ensures that the latest technological advances and many years of experience are consistently applied to the development and implementation of our vacuum systems, creating technologically optimal and efficient solutions.

The individual design teams at Busch comprise specialists from several different fields of expertise. In this way we can ensure that Busch specialists worldwide have a thorough understanding of the industry, the applications and vacuum technology.
All our vacuum systems are planned, designed and manufactured specifically for each customer within the company.
The development process is made faster and easier, and customers have just one contact to deal with.

Vacuum systems by Busch
– tailored to your needs!

Customised vacuum system

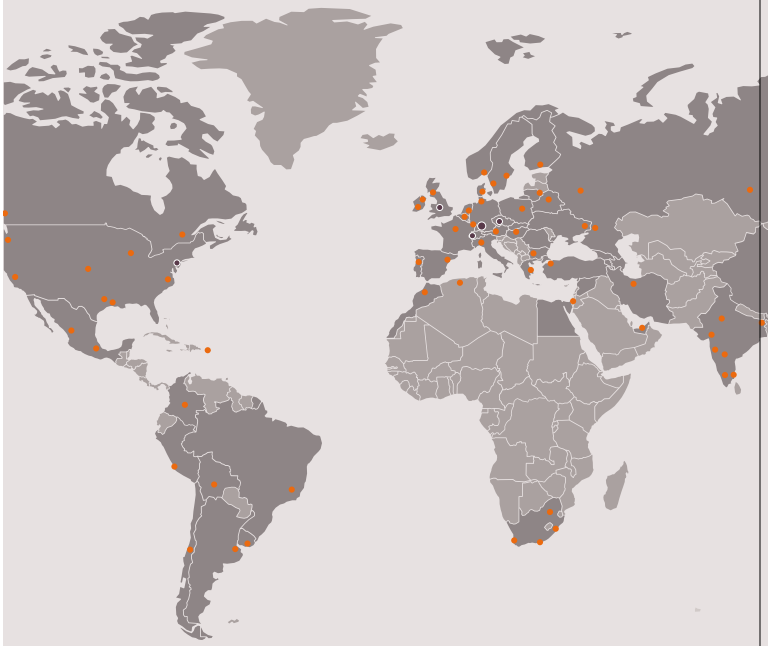
Service

Optimise the Performance, Efficiency and Life Cycle of Your Vacuum Pumps, Systems, Compressors and Blowers

› Professional. Fast. Reliable.

We have more than 50 years of experience, and employ service teams with their own service centres or mobile service units in more than 40 countries worldwide. This means that Busch runs one of the largest and most extensive global service networks for the maintenance and repair of vacuum pumps, compressors and blowers. Busch service technicians receive regular training in maintenance and repair work for all the vacuum pumps, compressors and blowers currently on the market.
They also have the training and certificates required to undertake service work in dangerous working environments. Vacuum pumps and systems used in processes involving hazardous or environmentally harmful substances can be maintained by specialist Busch teams and service centres worldwide.
Our services will help your vacuum pumps, systems, compressors and blowers to deliver the best possible performance.

- **› Field Service**
- **› Active Service Contract**
- **› Warranty Plus**
- **› Service Exchange**
- **› Rental Service**
- **› Installation and Start-up Service**
- **› Vacuum Consultancy**
- **› Remanufacture**
- **› Decontamination**
- **› Training**
- **› Genuine Spare Parts**



Accessories and Spare Parts

Genuine accessories and spare parts worldwide
Quality matters, especially where spare parts and accessories are concerned. Only Busch original spare parts guarantee optimum performance and reliability for your vacuum pumps, compressors and blowers.

Our well-organised spare parts depots provide our customers with Busch original spare parts, and third party original spare parts if required. We also stock all types of vacuum oils and other maintenance materials. All parts ordered are ready for dispatch within a day, and can be delivered anywhere in the world.

Be on the safe side – Genuine Accessories and Spare Parts by Busch!

Busch Vacuum Pumps and Systems

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