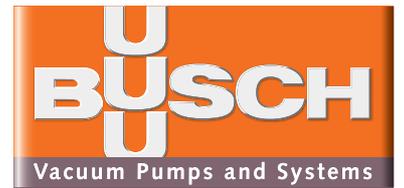


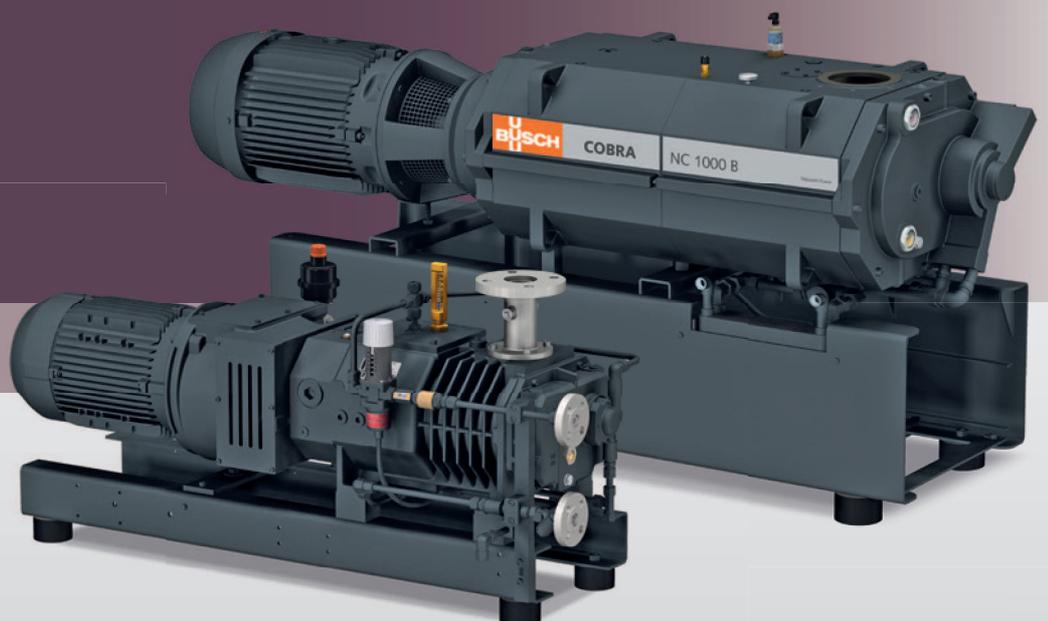
COBRA NC

Screw Vacuum Pumps – Industry

the Robust and Flexible Solution for Demanding Applications



Screw Vacuum Technology
by Busch





Dry Vacuum Without Compromises – the Flexible Solution

› Advanced Screw Design

› Efficient:

low energy consumption, minimal maintenance, minimized operating costs

› Robust:

high vapour and particle tolerance, self-draining

› High Performance:

high pumping speed at all inlet pressures

› Flexible:

air cooling and various sealing and coating configurations available

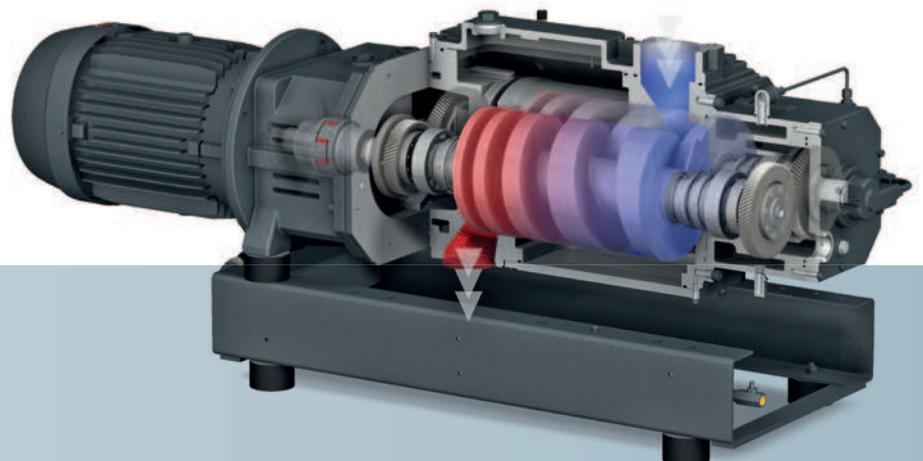
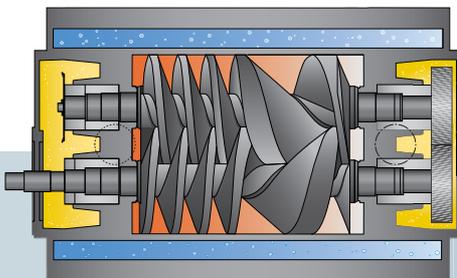
The COBRA NC is a series of high-performance and robust dry screw vacuum pumps for demanding applications with maximum flexibility and modularity for process changes. These vacuum generators are in use wherever gases and vapours need to be pumped reliably. The proven, completely dry screw vacuum technology allows the COBRA NC to run without operating fluids in the compression chamber. In practice this means no contamination of the pumped medium, and no environmental emissions. In addition, no costs arise for the purchase, replacement and disposal of operating fluids. Maintenance tasks such as oil changes or filter replacement are no longer required or are reduced to a minimum.

Vacuum pumps of the COBRA NC series are robust, extremely reliable and highly efficient – and the most advanced screw vacuum pumps on the market today. They operate efficiently throughout their

vacuum range, and deliver constantly high pumping speeds.

COBRA NC dry screw vacuum pumps feature dry compression, a specially developed screw profile, and unimpeded gas discharge. The result is a high degree of vapour and particle tolerance. Their design guarantees an even heat distribution over the whole pump stage, reducing thermal stress and increasing service life. The screws are manufactured from a single-piece casting avoiding any gaps, making the ingress of process fluids or particles impossible, and thereby preventing corrosion.

COBRA NC screw vacuum pumps are available in a range of application-specific versions, and can therefore be adjusted to suit any requirement. ATEX certified versions are available, which are suitable for transporting explosive gases or operation in explosion hazard areas.



Technical specifications

Two screw rotors inside the cylinder of the COBRA NC rotate in opposite directions. The pumped medium is trapped between the cylinder and screw chambers, compressed, and transported to the gas outlet. During the compression process the screw rotors do not come in contact with each other or the cylinder. Thus, no lubricants or operating fluids are required in the compression chamber. COBRA NC series vacuum pumps use efficient water cooling resulting in an even temperature distribution throughout the pump body, and guaranteeing thermal stability throughout the process.

Product Overview

COBRA NC Series Type



> COBRA NC 0100/0200/0300 B

50 Hz Ultimate pressure: ≤ 0.05 hPa (mbar)
Pumping speed: 110–320 m³/h

60 Hz Ultimate pressure: ≤ 0.01 hPa (mbar)
Pumping speed: 130–385 m³/h



> COBRA NC 0400/0600/0630/1000 B/C

50 Hz Ultimate pressure: ≤ 0.01 –0.5 hPa (mbar)
Pumping speed: 350–840 m³/h

60 Hz Ultimate pressure: ≤ 0.01 –0.1 hPa (mbar)
Pumping speed: 420–1000 m³/h



> COBRA NC 2500 B

50 Hz Ultimate pressure: ≤ 1.0 hPa (mbar)
Pumping speed: 2000 m³/h

60 Hz Ultimate pressure: ≤ 1.0 hPa (mbar)
Pumping speed: 2500 m³/h



> COBRA NC 0200/0300 B VR

50 Hz Ultimate pressure: $< 0,05$ hPa (mbar)
Pumping speed: 220–320 m³/h

Special versions for vapour recovery



> COBRA NC 0630/1000/1500/2000 B/C/F VR

50 Hz Ultimate pressure: < 20 hPa (mbar)
Pumping speed: 580–2100 m³/h

60 Hz Ultimate pressure: < 20 hPa (mbar)
Pumping speed: 680–2600 m³/h

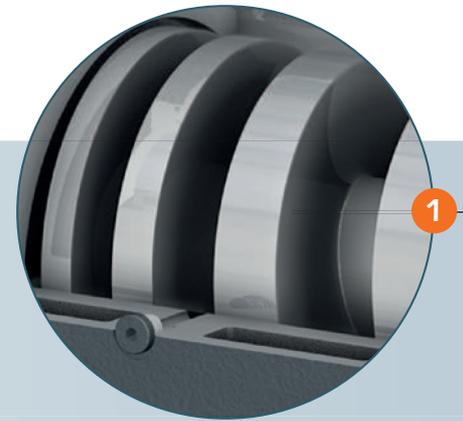
Special versions for vapour recovery



> COBRA NC – the flexible solution for industrial vacuum applications.



Technical Features COBRA NC



1 Excellent performance

Advanced screw design

- Single-stage, twin screw vacuum pumps
- Shorter evacuation time and high gas flow
- Robust construction – longer service lifetime, lower life cycle costs
- High pumping speed with low energy and cooling water consumption
- No contamination of process medium or gear oil
- Unique patented Busch screw design
- Anti-corrosive coatings available

2 Adaptable

Industry standard motor

- No control electronics required, making installation easy
- Variable speed drive (option) – further energy savings
- Energy-saving motors of efficiency class IE3



3 Robust

Optimized gas flow

- Ideal for wet processes and particle handling
- Self-draining

4 Efficient

Reduced maintenance costs

- Only gear oil requires replacement
- Easy maintenance – lower life cycle costs

5 Optimal fit

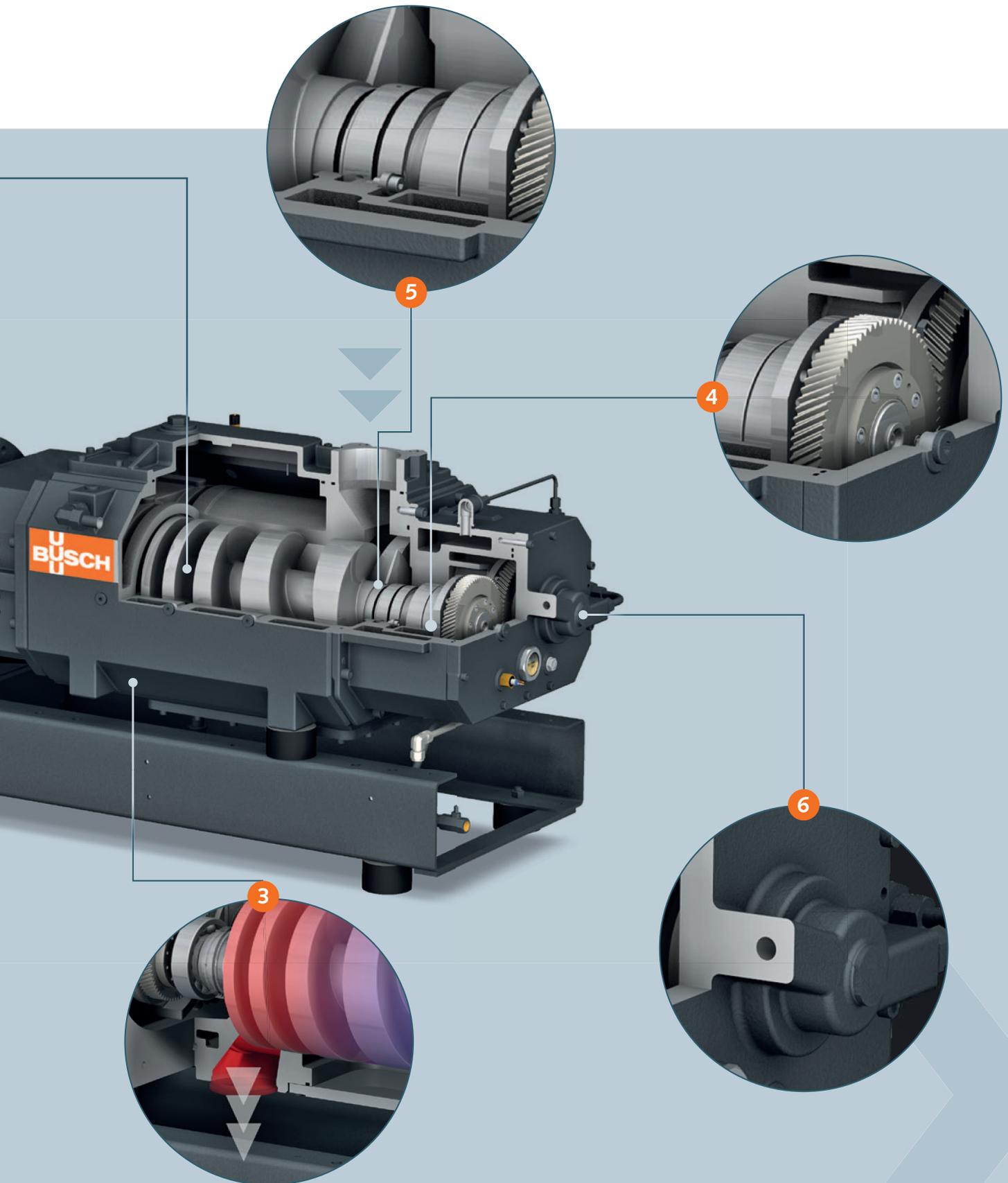
Shaft seals

- Various sealing configurations to suit process requirements

6 Flexible

Cooling system

- Water or air cooling
- Precise temperature control by advanced cooling water system, including separate water recirculation pump
- High vapour tolerance





The Robust and Flexible Solution for Demanding Applications

Vacuum distillation

COBRA NC vacuum pumps are ideal for vacuum distillation in various industries. Examples of COBRA NC in distillation processes:

- Crude oil distillation – to separate out individual hydrocarbons
- Solvent recovery – to recover solvents from a process medium
- Vacuum-supported distillation – in pharmaceutical or chemical applications

Vacuum drying

Vacuum drying is used to dry items rapidly at low temperatures and without thermal damage. For example, it is employed in the drying of foodstuffs in order to preserve food flavour. The high vapour tolerance of COBRA NC vacuum pumps makes them ideal for drying processes with high humidity. Examples of applications are:

- Freeze drying
- Cleaning / Drying of industrial parts

Evacuation

The evacuation of vessels, such as the extraction of air or gas from closed vessels, is one of the most widespread applications

of vacuum technology. These applications are consequently highly diverse. Common evacuation applications are:

- Mould evacuation
- Transfer chambers
- Process chambers
- Heat treatment
- Space simulation

Degassing of steel

The mechanical vacuum technology of the COBRA NC is ideal for high vapour / gas temperatures and elevated dust levels, as found in steel degassing processes. The energy efficiency of the COBRA NC is superior to all other technical solutions.

Forming, pressing and laminating

Forming, pressing and laminating with vacuum are important processes in many branches. Examples of applications are:

- Thermoforming
- Veneer pressing
- Vacuum assisted resin transfer moulding (VRTM)
- Flat panel display lamination
- Solar panel lamination

Coating

Vacuum is a key part of many coating processes, creating specific atmospheric conditions to improve surfaces and component properties. COBRA NC screw vacuum pumps are the optimal solution for coating processes as key part of a vacuum system. Examples of applications are:

- Plasma enhanced deposition
- Physical vapour deposition
- Chemical vapour deposition

Vapour recovery

The COBRA NC is the optimal vacuum pump for vapour recovery processes, due to its innovative cooling system which ensures very low gas temperatures. Areas of usage are:

- Storage tank systems
- Rail tanker filling systems
- Road tanker filling systems
- Loading and unloading stations for tanker ships
- Vapour recovery during production processes

... and many more!



Design Options COBRA NC

ATEX certification

COBRA NC screw vacuum pumps are designed to comply with EU directives relating to explosion hazard areas (ATEX). COBRA NC models are available in different ATEX versions and temperature classes.

1/2 ATEX-1/2
Certification acc. to regulation 2014/34/EU:
Ex II 1(i)/2(o) G IIB3(i)/IIB(o)

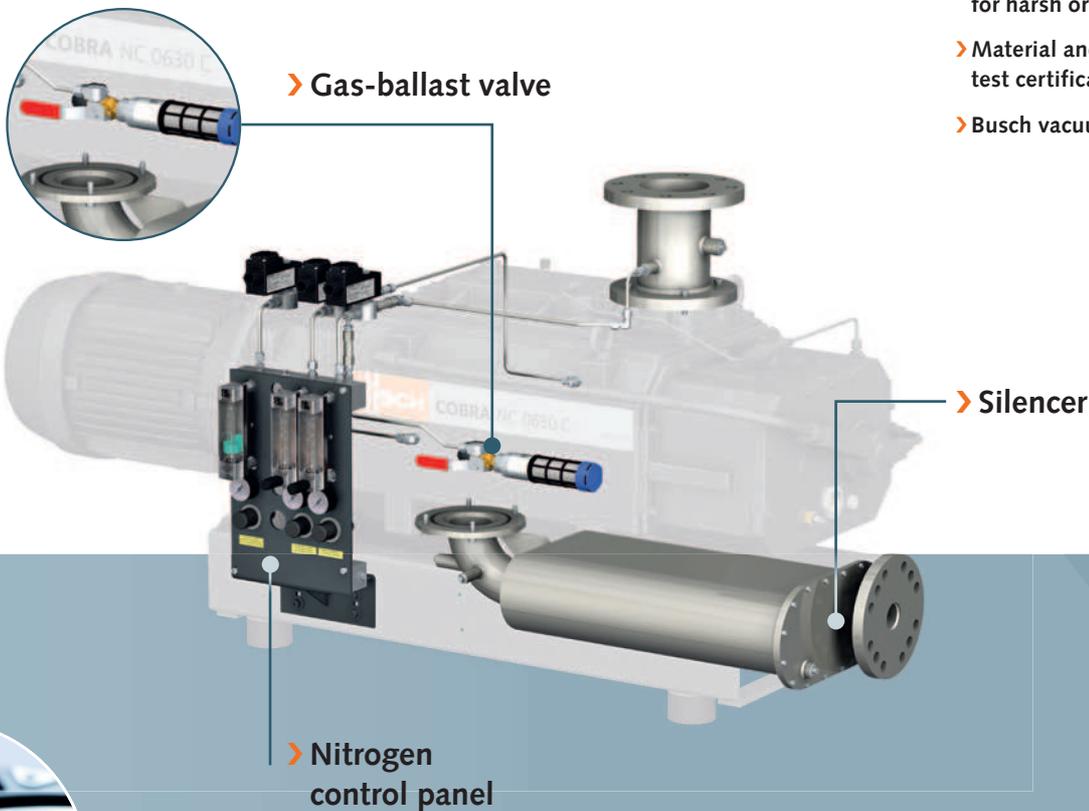
2/2 ATEX-2/2
Certification acc. to regulation 2014/34/EU:
Ex II 2(i)/2(o) G IIB(i)/IIB(o)
Ex II 2(i)/2(o) G IIC(i)/IIC(o)

3/3 ATEX-3/3
Certification acc. to regulation 2014/34/EU:
Ex II 3(i)/3(o) G IIC(i)/IIB(o)

ATEX certifications	1/2	2/2	3/3
COBRA NC 0100 B	●	●	●
COBRA NC 0200 B	●	●	●
COBRA NC 0300 B	●	●	●
COBRA NC 0400 B	●	●	●
COBRA NC 0600 C		●	●
COBRA NC 0630 C			●
COBRA NC 2500 B		●	

Accessories and Spare Parts

- > Standard motors meeting IEC or NEMA criteria, IE3
- > ATEX motors
- > Vacuum booster adapters
- > Nitrogen control panel
- > Gas-ballast valve for humid applications
- > Seal gas system for harsh applications
- > Purge gas and liquid flushing system for vacuum pump cleaning and inertization
- > Exhaust silencer
- > Air-cooled version
- > Anti-corrosion coatings
- > Double and single mechanical seals for harsh or toxic processes
- > Material and vacuum pump test certificates
- > Busch vacuum pump oils and coolants



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Technical data is subject to change. Created in Germany. MG STB COBRANC Len 09/2018 8Aa