

# Screw vacuum pumps for the semiconductor industry



## COBRA BOB

BA 0100/BB 0100/BC 0100



BC 0100

The COBRA BOB (Busch On Board) series of vacuum pumps are aimed at vacuum applications in the semiconductor industry where on-board capabilities are required or space is limited. The pumps can be used for load lock and transfer chamber evacuation as well as for medium and harsh processes. The pumping mechanism is using the well proven twin screw technology resulting in a single stage vacuum pump with short gas path and deposition resistive mechanical design. Using the variable screw shape and the internal compression mechanism this dry screw pump has low power consumption. Due to this effect the cooling water consumption is also low.

The vacuum pump design prevents gases and by-products from contacting shaft seals and bearings.

The COBRA BOB series comes with three models:

### BA 0100

is air cooled with a fan at the motor side. No cooling water is required. This model can fully replace oil sealed rotary vane pumps in the range of up to 130 m<sup>3</sup>/h pumping speed. Cost consuming supply lines are not required. There is no electronic control of the pump. Seal and dilution N<sub>2</sub> can be connected.

### BB 0100

is based on BA 100 and water cooled, also without electronic control, but with connection for seal and dilution purge.

### BC 0100

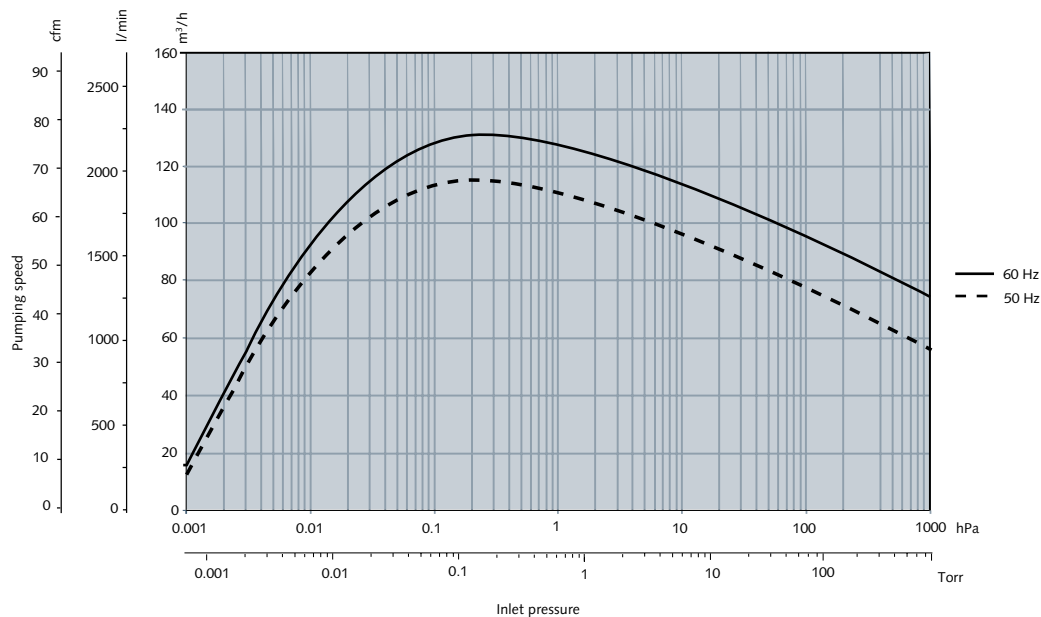
is fully equipped with the control electronics for motor current, casing temperature, oil level, exhaust pressure, etc. It also incorporates the capability of idle mode, running then at low rotation speed whilst saving energy.

### Screw profile

The well proven twin screw pump design is used. The screw mechanism minimizes sliding areas inside the pump and thus has optimum restart capabilities. This feature results in lower electric energy consumption compared to standard screw designs and in lower heat load of the compressed gas. Using the indirect cooling principle the whole pump body is working at a uniform temperature level. There are no cold spots, and thus condensation is reduced to a minimum.

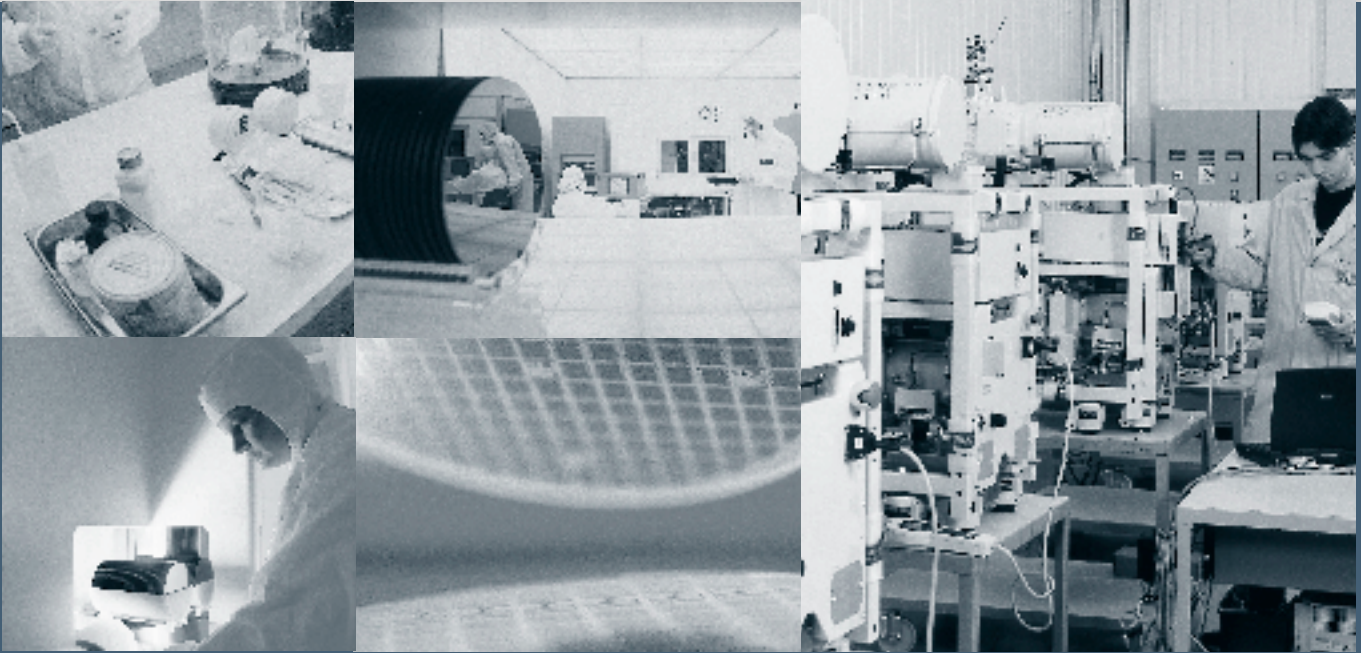
# Screw vacuum pumps for the semiconductor industry

## Technical data



Technical data		BA 0100	BB 0100	BC 0100
Pumping speed 60 Hz (50 Hz)	m³/h	130 (110)	130 (110)	130
	cfm	77 (65)	77 (65)	77
Base pressure hPa	1/min <sup>-1</sup>	0.01	0.01	0.01
Rotation speed 60 Hz (50 Hz)		3600 (3000)	3600 (3000)	3600
Inlet flange		DN 50 KF	DN 50 KF	DN 50 KF
Exhaust flange		DN 40 KF	DN 40 KF	DN 40 KF
Weight	kg	120	120	120
Noise level	dB(A)	< 59	< 59	< 59
<b>Electrical</b>				
Power supply		3Ph/200V/50 (60 Hz)	3Ph/200V/50 (60 Hz)	3Ph/200V/50 (60 Hz)
		3Ph/400V/50 (60 Hz)	3Ph/400V/50 (60 Hz)	3Ph/400V/50 (60 Hz)
Nom. power	kW	1.87	1.8	1.8
Power at 1 mbar pressure 60 Hz (50Hz)	kW	1.47 (1.27)	1.4 (1.2)	1.4 (1.2) idle: 0.65
<b>Lubrication</b>				
Oil capacity	l	0.12	0.12	0.12
Oil type		PFPE	PFPE	PFPE
Grease type		PFPE	PFPE	PFPE
<b>Cooling water</b>				
Connection, quick coupling		Not applicable	3/8" NPT	3/8" NPT
Pressure max.	bar	Not applicable	5	5
Pressure difference min.	bar	Not applicable	2	2
Flow min.	l/min	Not applicable	1	1
Water temperature	°C	Not applicable	10-20	10-20
<b>Nitrogen</b>				
Supply pressure min.	bar	1.5	1.5	1.5
Dilution flow 60 Hz (50 Hz)	slm	0-5 (2)	0-5(2)	0-5(2)

## Applications



### Types COBRA BOB BA 0100/BB 0100/BC 0100

### Applications COBRA BOB BA 0100/BB 0100/BC 0100

### Advantages COBRA BOB BA 0100/BB 0100/BC 0100

#### BA 0100

- Air cooled
- Compact
- Simple to install
- No control unit

#### BB 0100

- Water cooled
- No control unit
- Flowmeters for N<sub>2</sub> and CW

#### BC 0100

- Water cooled
- Control unit
- Electronic sensors
- Digital I/Os
- RS232/Ethernet
- Idle-Mode

- Load lock
- Transfer chamber
- PVD
- Implant
- Pre-Clean
- Etch
- CVD
- PECVD

- Reduced footprint
- Field proven dry screw technology
- Reduced facility consumptions
- Process tool integration
- Low noise/vibration levels
- Reduced foreline installation
- No cooling water (BA 0100) or N<sub>2</sub> supply line
- Clean room compatible

# Busch Semiconductor Vacuum Group

Europe  
Busch Semiconductor  
Vacuum Group B.V.  
Breudijk 2 NL 3481 LP Harmelen  
info@buschsvg.nl  
www.buschsvg.nl

USA  
Busch Semiconductor  
Vacuum Group Inc.  
18430 Sutter Blvd.  
Morgan Hill, CA 95037  
info@buschsvg.com  
www.buschsvg.com

Taiwan  
Busch Semiconductor  
Vacuum Group Corp.  
1F, Building D, No. 120  
Jhonghua Road  
Hsin Chu Industrial Park  
Hukou Township,  
Hsin Chu County 303  
semicon@busch.com.tw  
www.buschsvg.com

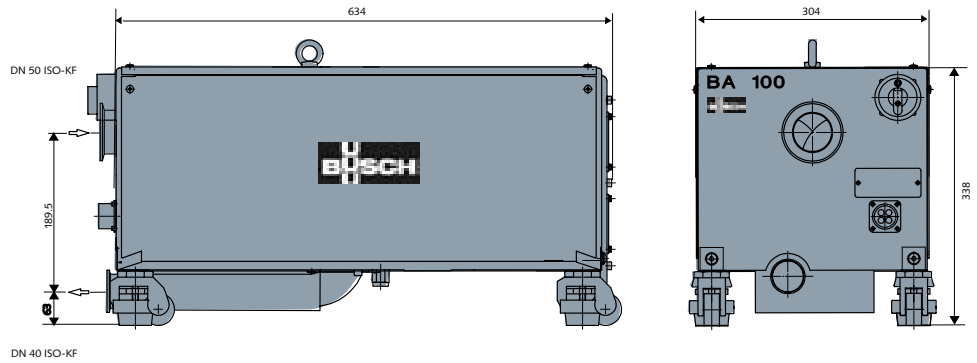
Korea  
Busch Korea Ltd.  
392-1 Yangji-Ri, Yangji-Myun,  
Yongin-City, Kyunggi-Do  
449-823 South Korea  
busch@buschkorea.co.kr  
www.buschkorea.co.kr

Japan  
Nippon Busch K.K.  
1-23-33, Megumigaoka  
Hiratsuka City, Kanagawa  
Japan 259-1220  
info@busch.co.jp  
www.busch.co.jp

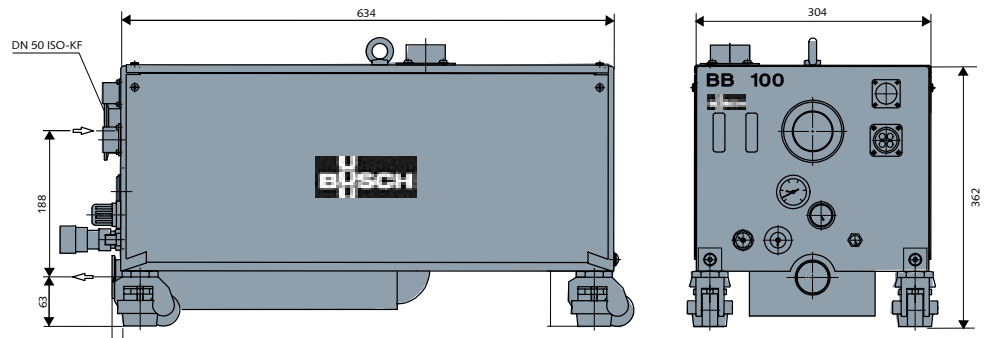
Singapore  
Busch Vacuum Singapore Pte. Ltd.  
20 Shaw Road  
Unit 01-03  
Singapore 367956  
www.busch.com.sg

China  
Busch Vacuum Shanghai Co.,Ltd.  
18 Binyang Road  
Shanghai 200235  
PRC  
busch@busch-china.com

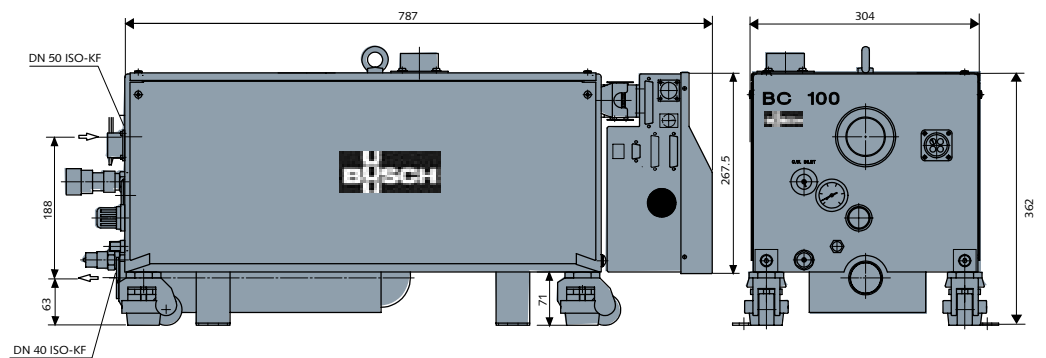
## BA 0100



## BB 0100



## BC 0100



Busch – all over the world in Industry  
Busch – au coeur de l'industrie dans le monde entier  
Busch – weltweit im Kreislauf der Industrie

