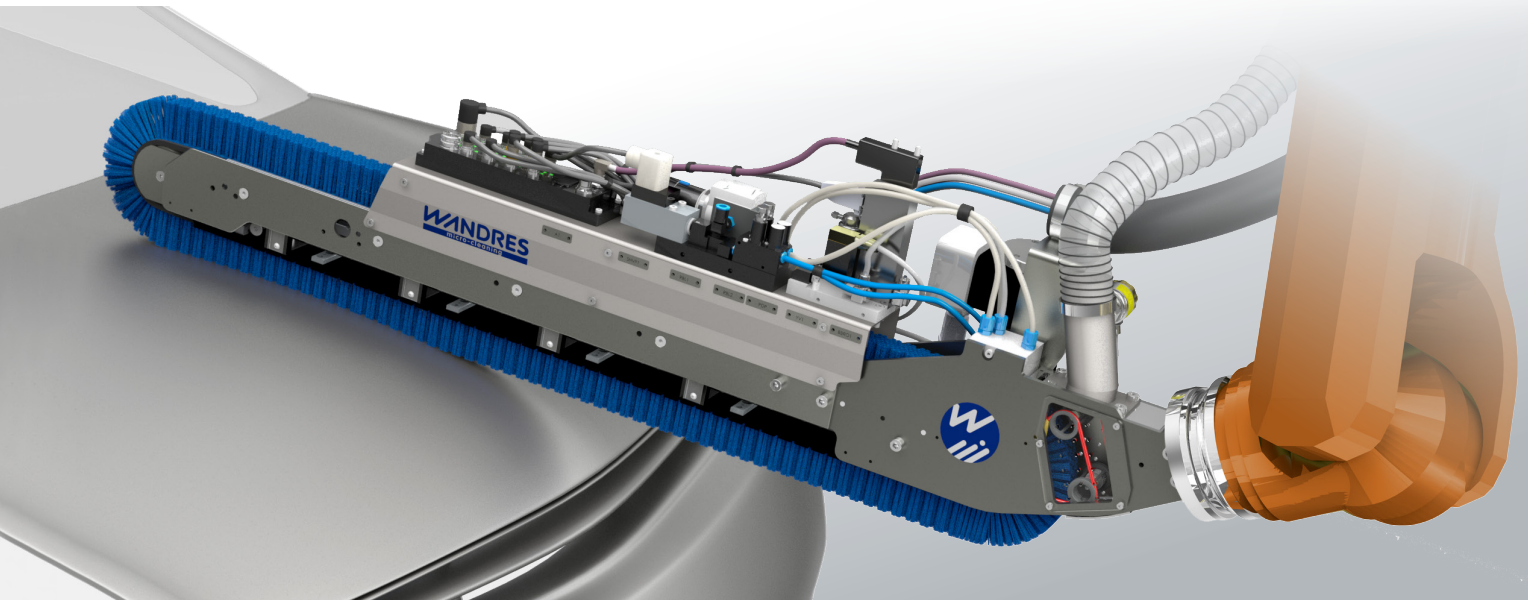




## Robot Sword Brush BIR 46/1/1000



### Brief description

The Robot Sword Brush BIR 46/1/1000 is ideal to clean objects with complex geometries that have concave or convex surfaces. It may be used to clean car bodies or plastic molded parts before lacquering, printing or converting processes.

The contact area of the circulating linear brush is mounted on a flexible, compressed air controlled pressure buffer. In the centre of the working area, the linear brush may adapt to different surface contours of up to -30 mm / + 10 mm in relation to a flat surface.

The brush filament tips are micro-moistened with an antistatic cleaning agent (Ingromat). This will ensure that even the most minute dust particles are removed effectively. The material surface will remain dry during the process. A field bus system controls the Ingromat and compressed air supply. It also monitors the exhaust air volume flow, the circulating movement of the linear brush and the distance to the material surface (crash monitoring function).

### Technical features

- 1 x Sword Brush BIR 46... with flexible pressure buffer that is controlled pneumatically
- 1 x Ingromat measuring and regulating unit for a precise micro-moistening of the filament tips
- 1 x field bus system (e.g. Profibus)
- 1 x three-phase alternomotor without ventilator (suitable for Clean Rooms)
- 1 robot flange according to customer's specification
- 2 x grip handle and lay down brackets

### Options and accessories

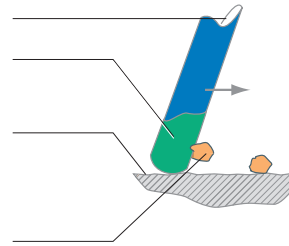
- 2 x teach-in plug gauge including support
- Test gauge: Welded frame to accommodate robot flange

## Functioning of Robot Sword Brush

BIR.. 46/1/1000..



Individual brush filament  
Ingromat® micro-moistening  
(shown green for clarity)  
The material surface remains  
dry and is cleaned effectively  
Capillary attraction will bind minute  
particles to the brush filaments



### Suction system with flow meter

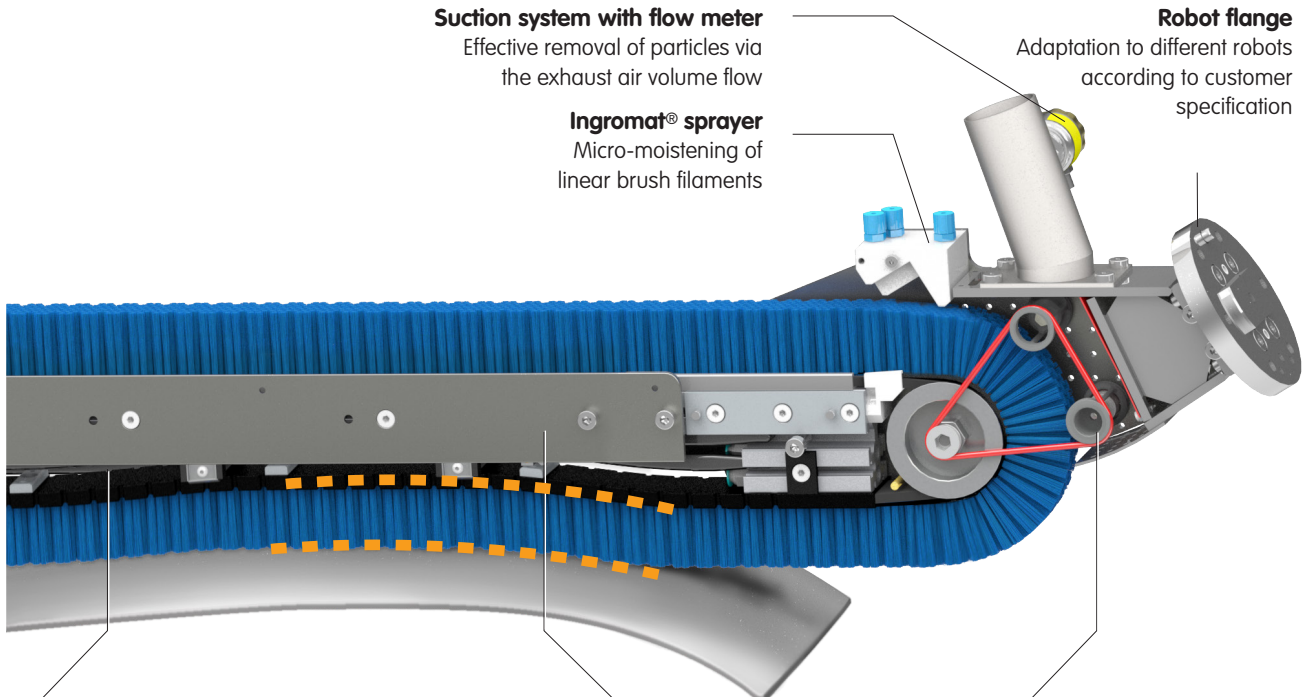
Effective removal of particles via  
the exhaust air volume flow

### Ingromat® sprayer

Micro-moistening of  
linear brush filaments

### Robot flange

Adaptation to different robots  
according to customer  
specification



### Flexible pressure buffer

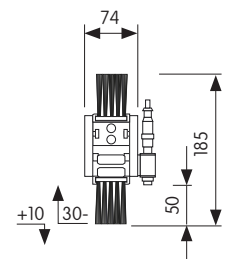
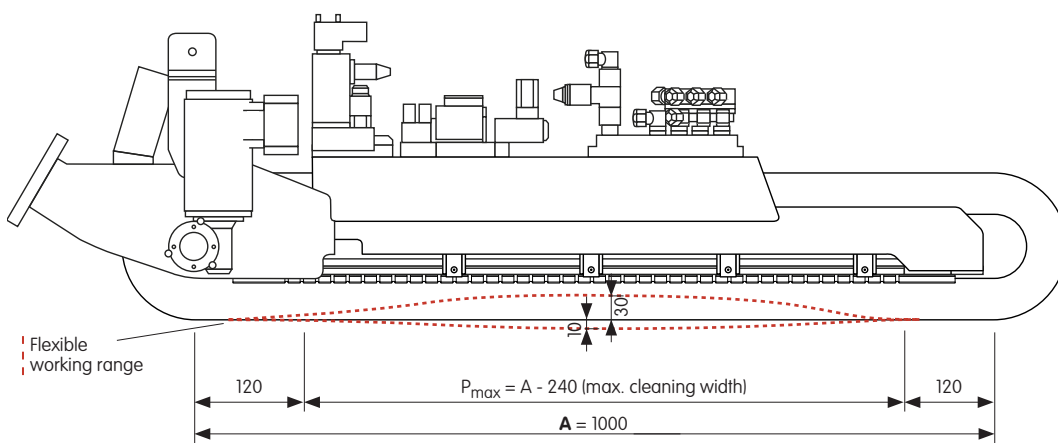
Provides effective cleaning of  
concave and convex surfaces  
as linear brush can adapt to  
surface contours.

### Crash sensor system

6 inductive sensors monitor possible crash  
situations. They react as soon as the linear  
brush is pressed too hard onto the product or  
if the distance to the material is too small.

### Self-cleaning mechanism

Two roto-racks and com-  
pressed air driven nozzles  
clean the brush filaments.



**BIR.. 46/1/1000..**

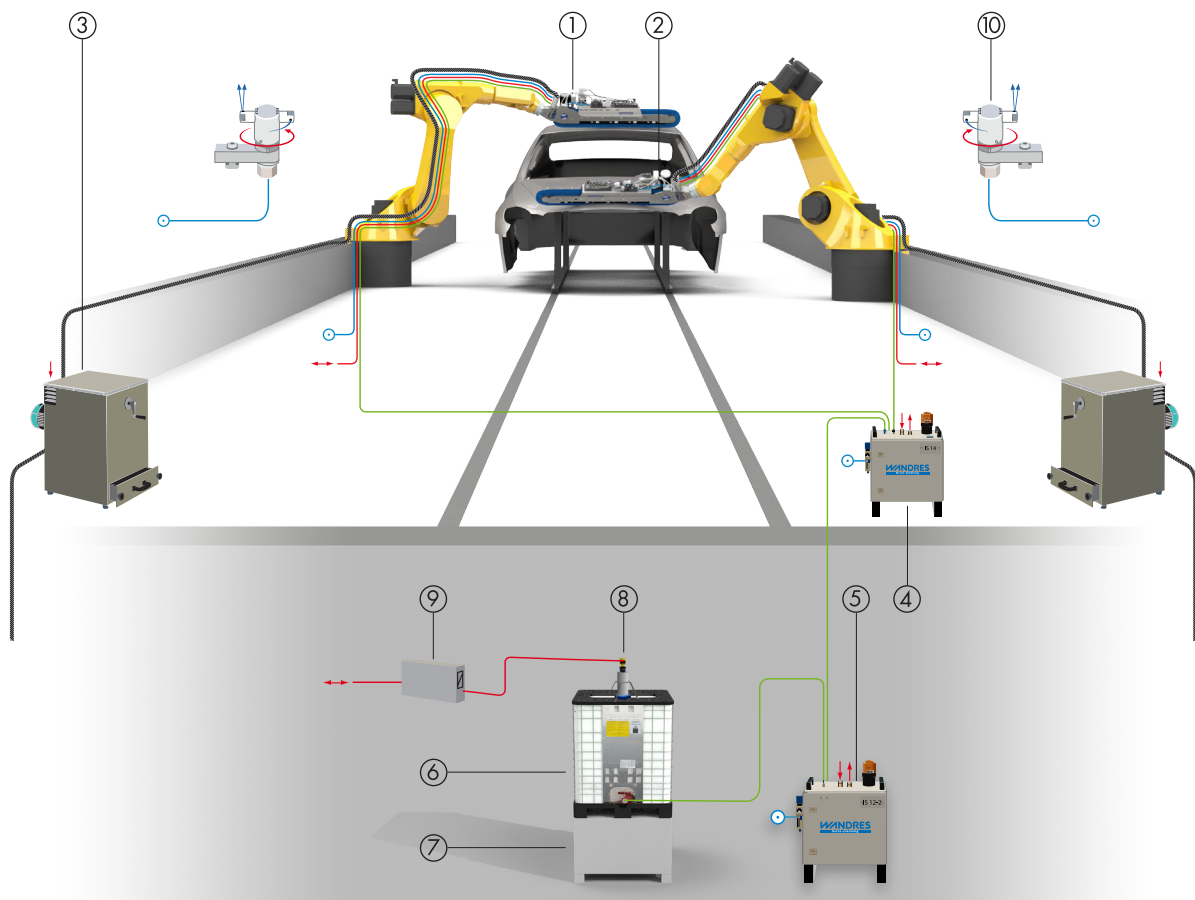


### Ordering example

The motor of the Robot Sword Brush may either be installed to the right or to the left of the flange.  
Order no. 1376-007 describes a Robot Sword Brush BIR 46/1/1000 with motor position C, i.e. the motor is positioned to the left of the flange.

Order no. BIR 46/..		
	Description	Motor position
1376-007	BIR 46/1/1000	C (to the left of the flange)
1377-007	BIR 46/1/1000	B (to the right of the flange)

### Typical installation



- ① Robot Sword Brush (B position)
- ② Robot Sword Brush (C position)
- ③ Suction filter
- ④ Ingromat central supply pump IS 14
- ⑤ Ingromat central supply pump IS 12
- ⑥ Ingromat 1000 litre container
- ⑦ Collecting tray (option)
- ⑧ Liquid level monitoring with ultrasonic sensor
- ⑨ Separating element for liquid level sensor
- ⑩ Tornado Nozzle e.g. TN 36/90/1.6 to cyclically clean the Robot Sword Brush
- ⊙ Compressed air
- ↔ Electrical signals
- Ingromat

## Technical details

BIR.. 46/1/1000..



### Electrical

#### Brush drive motor

Voltage

3 phase alternomotor without ventilator, suitable for Clean Rooms, UL-version

400 V  $\pm$  10%; 3 PH + PE; 50 Hz

480 V  $\pm$  10%; 3 PH + PE; 60 Hz

Output

0.12 kW

Type of protection

IP 55

### Pneumatic

Compressed air consumption

0.230 Nm<sup>3</sup>/min, 6 bar (continuous operation)

Required quality for compressed air

Category 5 according to DIN ISO 8573-1

Particle:

max. size 40  $\mu$ m

max. density 10 mg/m<sup>3</sup>

Water:

pressure condensation point 7°C

Oil:

residual oil 25 mg/m<sup>3</sup>

Required compressed air connection

6 bar, Ø 8 mm

### Suction

Suction connection

1 x Ø 50 mm

Required suction volume

1 x 5 m<sup>3</sup>/min

Required vacuum

min. 500 Pa

### Acoustic emission

Approx. 75 dB (A)

### Liquid

Ingromat hose connection

1 x Ø 6 mm

Ingromat consumption

0.2 – 0.5 l/h

### Linear brush

Type of linear brush

Quadro

Filament material

Polyamide 6.12

Filament length

50 mm

Filament diameter

0.2 mm

Special features (option)

Soft Touch: Rounded filament tips for delicate surfaces  
(e.g. acrylic material, polycarbonate)

Plasma version: plasma cleaned linear brush for delicate subsequent  
processes such as coating or lacquering

[Options: see brochure Options/Accessories](#)

This information is subject to technical changes.