

Robot Sword Brush BIR 46..



Brief description

The Robot Sword Brush BIR 46.. 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).

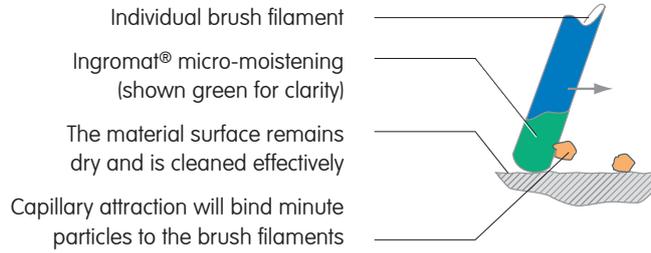
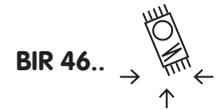
Technical features

- 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 including calliper gauge

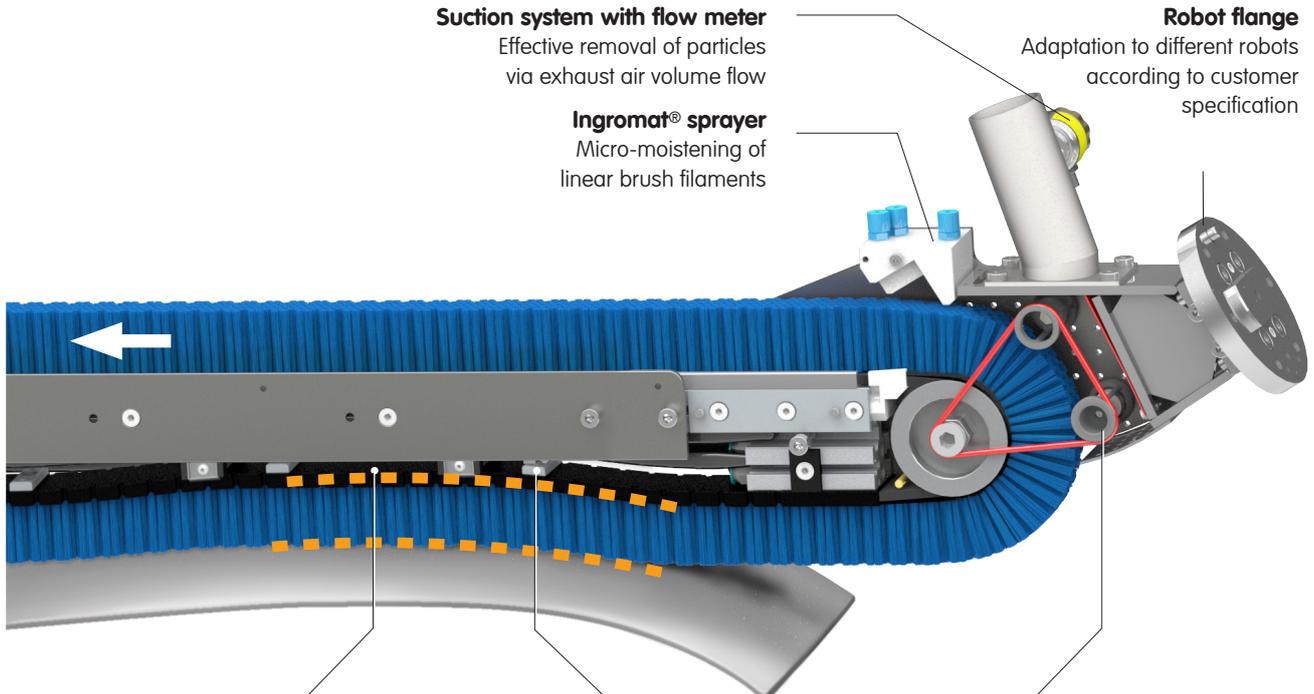
Functioning of Robot Sword Brush



Suction system with flow meter
Effective removal of particles via exhaust air volume flow

Ingromat® sprayer
Micro-moistening of linear brush filaments

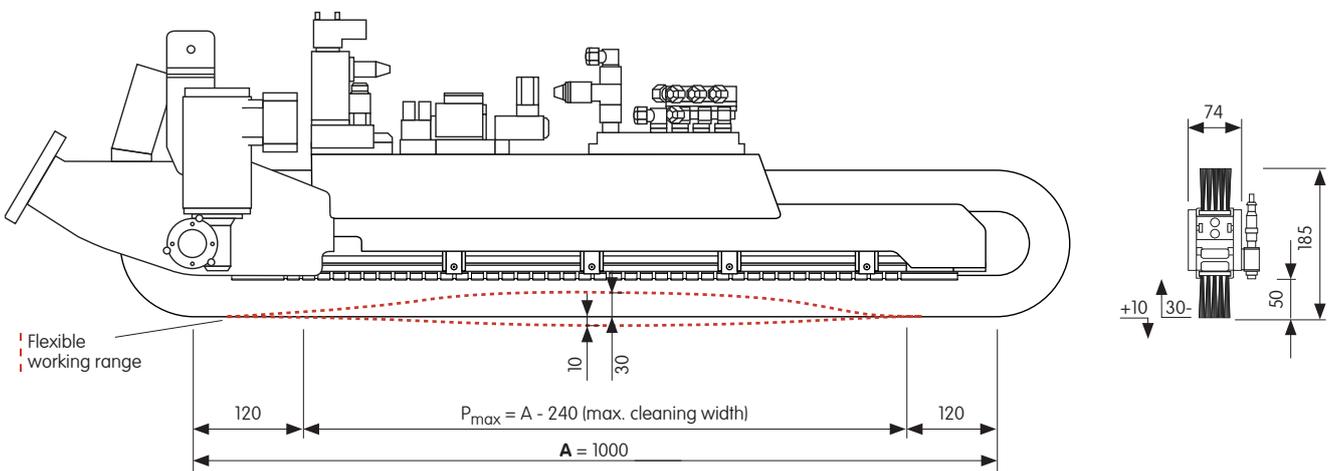
Robot flange
Adaptation to different robots according to customer specification



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 compressed air driven nozzles clean the brush filaments.



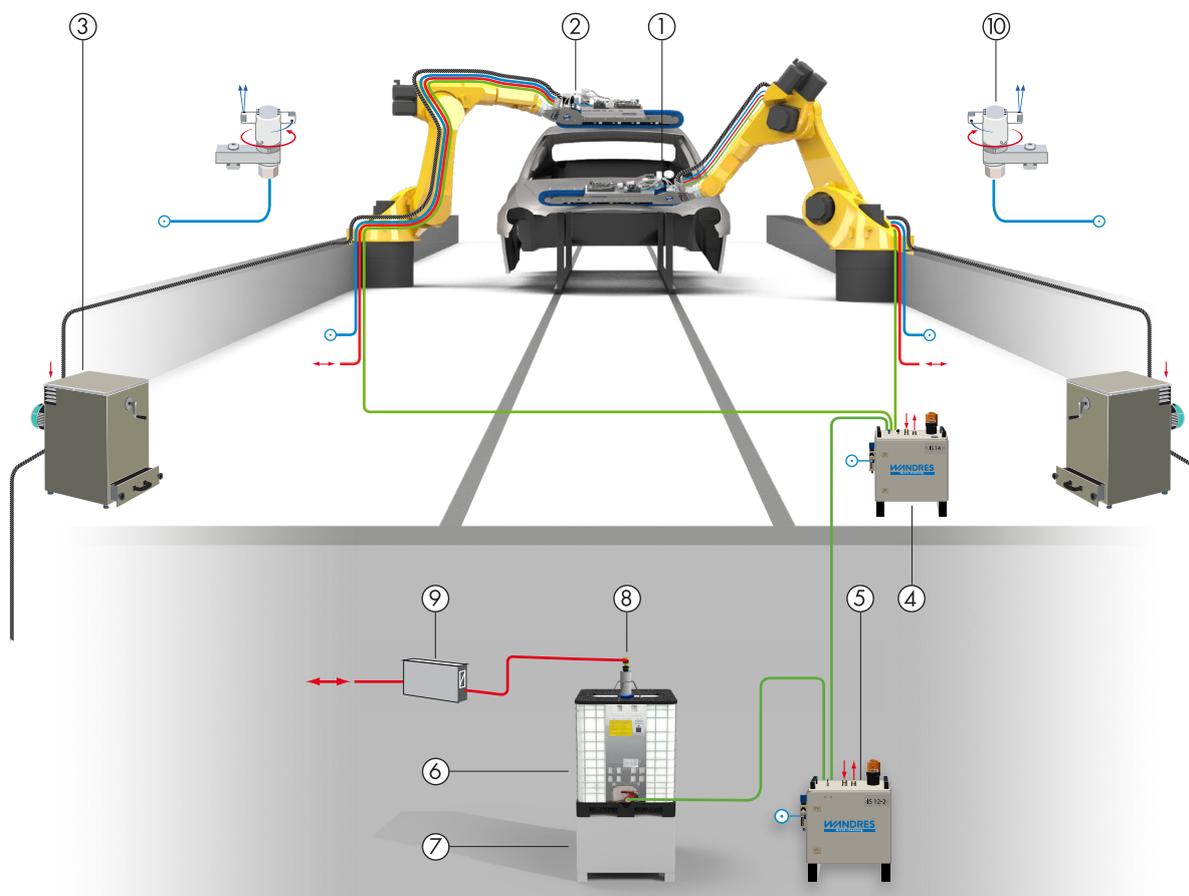


Ordering example

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.

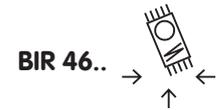
Order no. BIR 46/..	Description	Motor position
1376-007	BIR 46/1/1000	C (to the left of the flange)
1377-007	BIR 46/1/1000	B (to the right of the flange)

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
- ⑧ Liquid level monitoring with ultrasonic sensor
- ⑨ Separating element for liquid level sensor
- ⑩ Tornado Nozzle to cyclically clean Robot Sword Brush e.g. TN 36/90/1.6
- ⊕ Compressed air
- ↔ Electrical signals
- Ingromat

Technical details



Electrical

Brush drive motor	3 phase alternomotor without ventilator, suitable for Clean Rooms, UL-version
Voltage	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	230 l/min, (continuous operation)
Compressed air quality	filtered (max. particle size < 40 μ m), oil free (residual oil < 1.5 mg/m ³ at 24° C)
Required compressed air connection	\varnothing 8 mm, 6 bar

Suction

Suction connection	1 x \varnothing 50 mm
Suction capacity	3 m ³ /min. (recommended flow velocity 25 m/s)

Acoustic emission

Approx. 75 dB (A)

Liquid

Ingromat [®] hose connection	1 x \varnothing 6 mm
Ingromat [®] consumption	0.2 – 0.5 l/h

Linear brush

Type of linear brush	Quadro R 7 with sanded and rounded filament tips
Filament material	Polyamide 6.12
Filament length BL	50 mm
Filament diameter G	0.2 mm
Equipment	plasma degreased linear brush for delicate, subsequent processes such as converting or lacquering; brushes are packed twice

Technical information is subject to changes

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