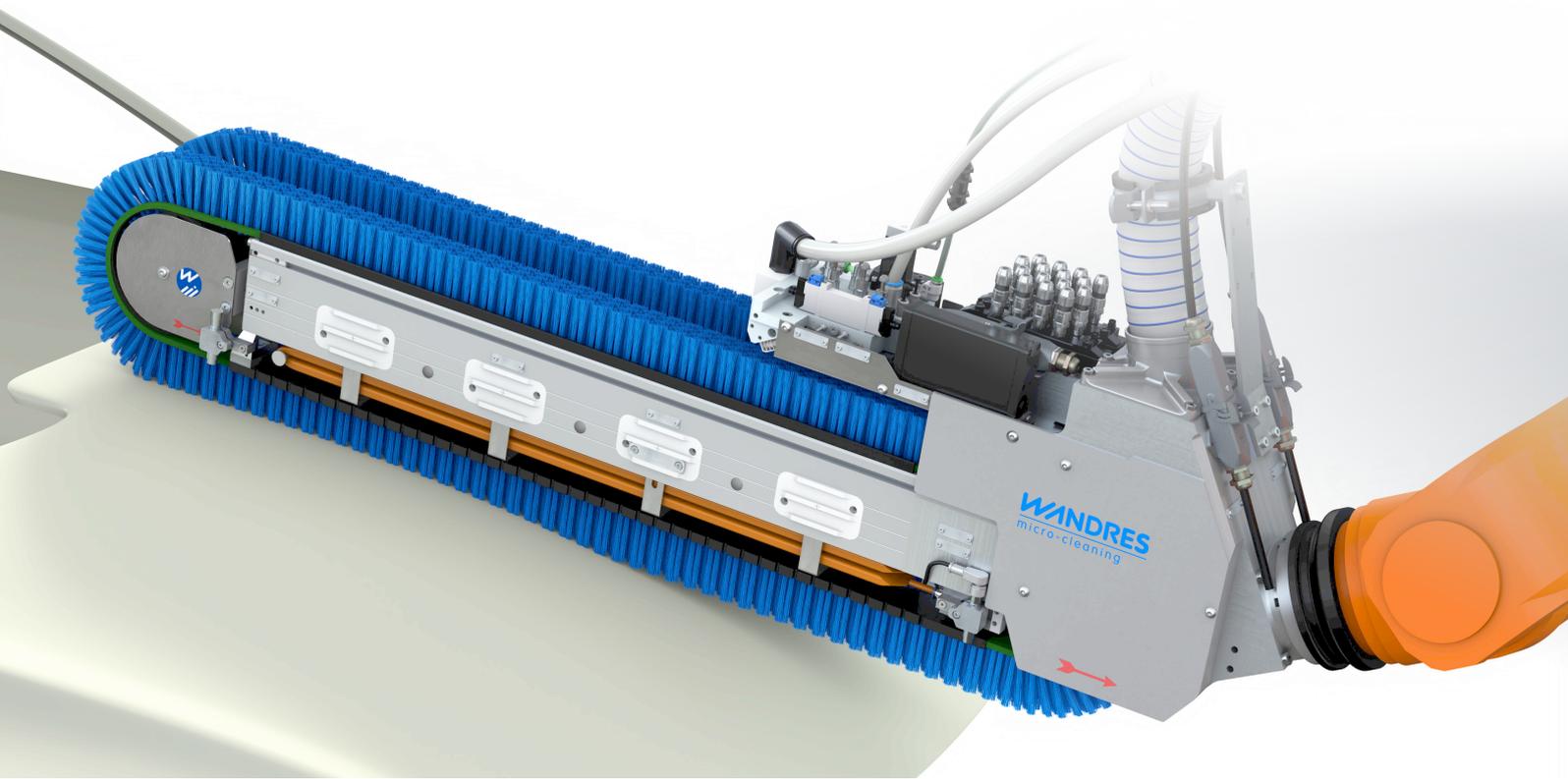




# Robot Sword Brush Laura 160..

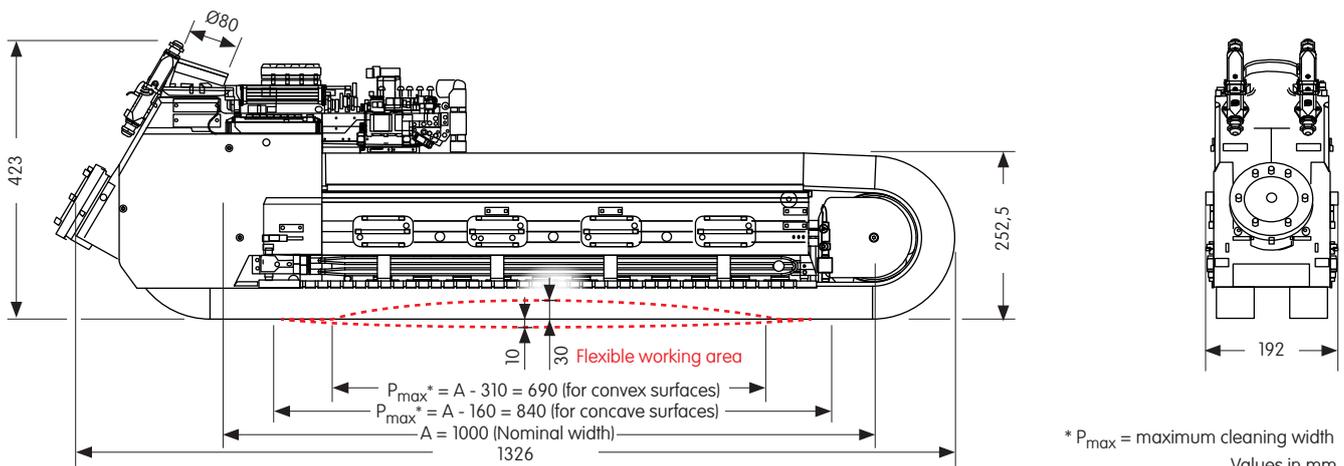


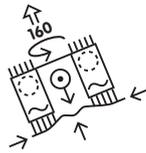
## Brief description

The Robot Sword Brush Laura 160..cleans complex geometrical surfaces such as car bodies, support structures or plastic moulded parts prior to painting or coating. It features two parallel linear brushes that are mounted on a flexible contact area. They have micro-moistened filament tips that allow them to remove very fine dust particles without dampening the subject surface. Tornado nozzles of the Janus 50 D type use a jet of compressed air to remove particles from recesses. They are mounted between the two linear brushes. The combination of brushes and nozzles provides for an excellent cleaning result and allows fast cycle times.

## Technical details

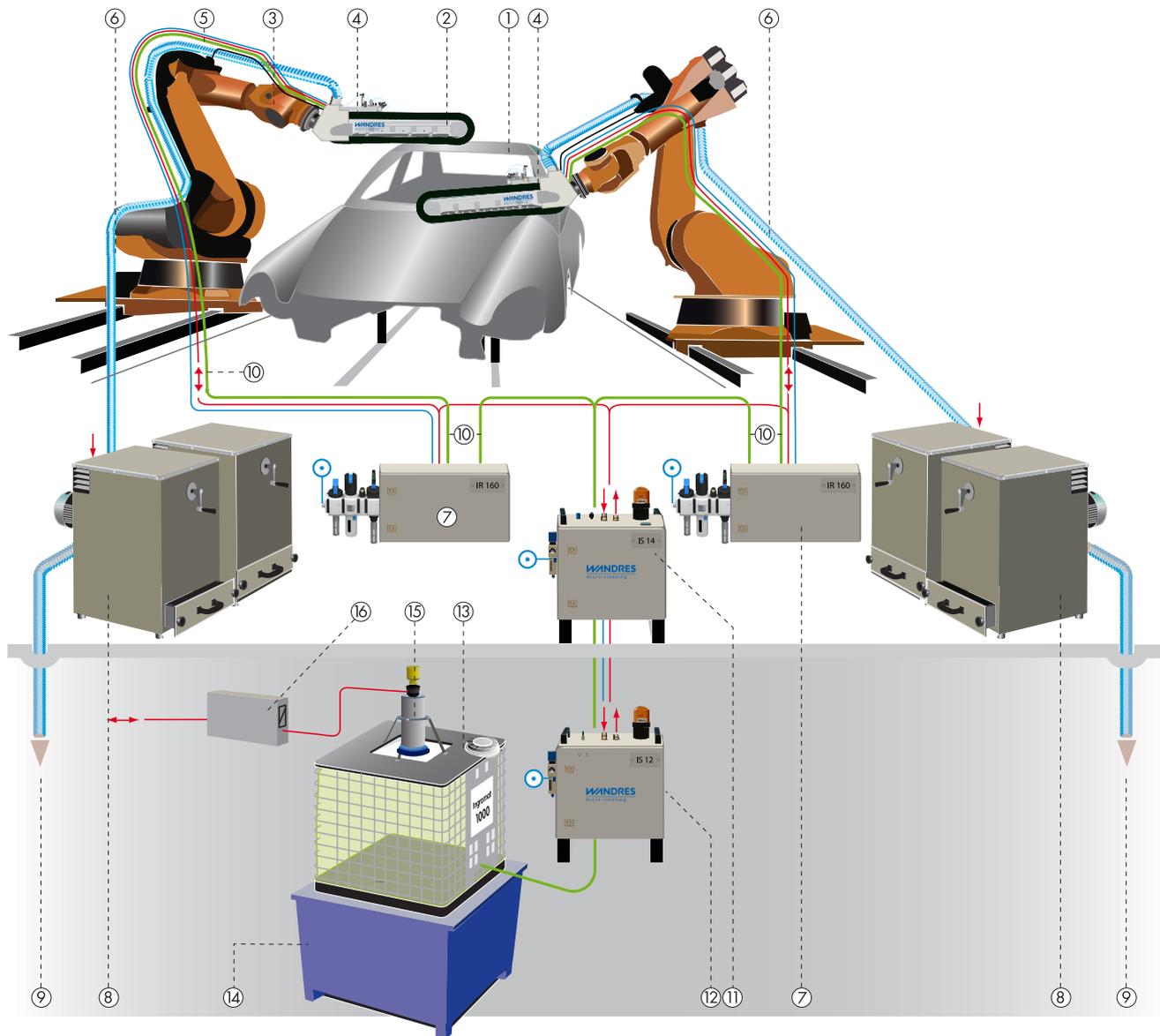
- 2 x linear brush Quadro L with flexible pressure buffer that is controlled pneumatically
- Ingromat®-System
- 11 rotating Tornado nozzles Janus 50 D
- Crash sensors, standstill monitor, flow meter
- Fieldbus system (e.g. Profinet)
- Compact hub drive
- Robot flange with quick change system





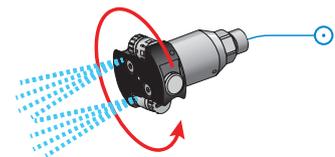
## Typical system configuration

Laura 160/1M/1000 Order no. 1594-007

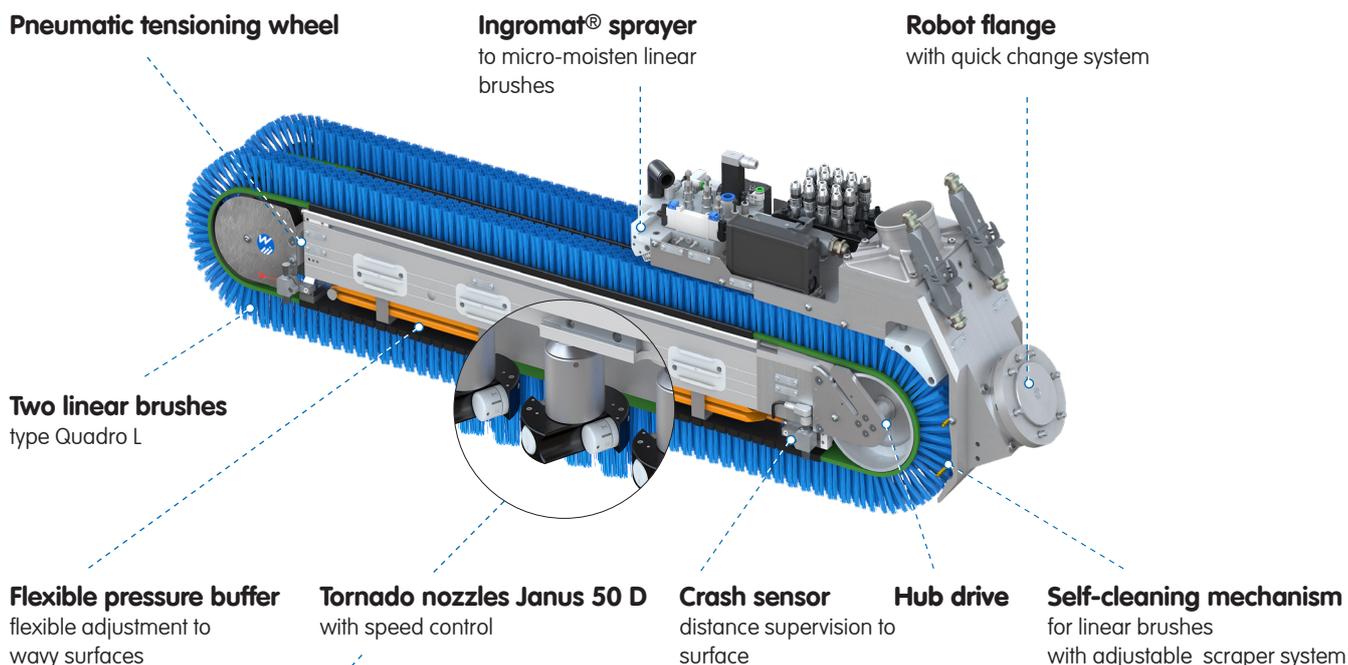


- |  |  |
|--|--|
| ① Subject car body                               | ⑧ Suction filter                                 |
| ② Robot Sword Brush                              | ⑨ Suction hose                                   |
| ③ Cleaning robot                                 | ⑩ Ingotmat® hose                                 |
| ④ Motor control                                  | ⑪ Ingotmat® central supply pump IS 14            |
| ⑤ Hose cable package                             | ⑫ Ingotmat® central supply pump IS 12            |
| ⑥ Suction hose                                   | ⑬ Ingotmat® storage container 1000 litres        |
| ⑦ Ingotmat® regulator and monitoring unit IR 160 | ⑭ Collecting tray                                |
|  | ⑮ Liquid level monitoring with ultrasonic sensor |
|  | ⑯ Isolating module Vegatrenn                     |

Tornado nozzle **Janus 50 D**  
for cyclical cleaning

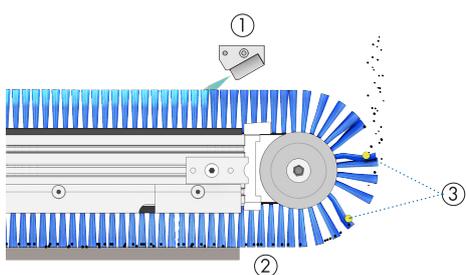


- Compressed air
- Electrical signals
- Ingotmat® anti-static cleaning agent



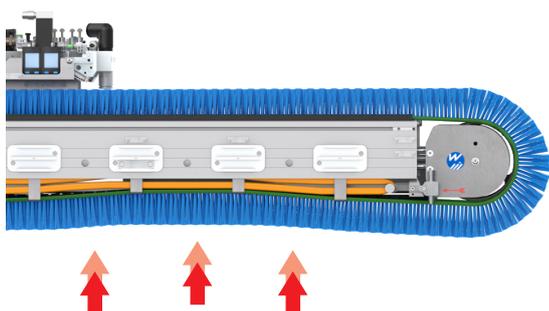
### Compressed air assisted cleaning

Compressed air exits the Tornado nozzles of the Janus 50 D type with several times the speed of sound. This jet of air thoroughly removes any particles and dust debris from recesses, roof seams and grip recesses. The nozzle bore diameters are adjustable. Adjustment range is from 0 to 1.6 mm.



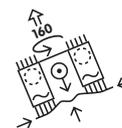
### Ingromat® system

- ① Micro-moistening of brush filaments with antistatic cleaning agent Ingromat®
- ② Brush cleaning of product surface: Particles cling to brush filaments and are transported towards suction system
- ③ Mechanical self-cleaning of circulating linear brush: Particles are detached from brush filaments and eliminated by suction system



### Flexible pressure buffer

The flexible pressure buffer is controlled pneumatically. The contact area of the linear brushes is mounted on this flexible device. Possible excursion of linear brushes at the centre of the flexible working area is -30 mm up to +10 mm. Brushes may thus adapt themselves effectively both to convex and concave surfaces.



## Technical data

## Laura 160..

### Electrical details

Drive of Laura 160..	Hub drive; IP 54; stabilised 10 A power supply unit necessary 48 V DC; 10 A; 0.35 kW
Sensor system	24 V DC; 4 A; 0.1 kW
Suction system	380-480V AC; 50/60 Hz; 5.1 kW

### Pneumatic details

Compressed air consumption	170 l/min (without Tornado nozzles Janus 50 D), 1560 l/min (with Tornado nozzles Janus 50 D)
Compressed air quality	filtered (particle size < 40µm), oil free (residual oil < 1.5 mg/m <sup>3</sup> at 24° C)
Compressed air connection	6 bar; 1 x Ø 12 mm (Sword Brush); 1 x Ø 16 mm (Tornado nozzles Janus 50 D)

### Suction

Suction connection	1 x Ø 80 mm
Suction capacity	12 m <sup>3</sup> /min (at recommended flow velocity 40 m/s)

### Acoustic emission

Approx. 78 dB (A) without Tornado nozzles Janus 50 D,  
Approx. 90 dB (A) with Tornado nozzles Janus 50 D  
Acoustic emission depends on surface features and the dimensions  
of the subject surface.

### Fluidics

Ingromat® hose connection	1 x Ø 6 mm
Ingromat® consumption	0.4 – 1 l/h

### Linear brush

Type of linear brush	Quadro L with sanded and rounded filament tips
Filament material	Polyamide 6.12
Filament length BL	50 mm
Filament diameter G	0.2 mm
Features	plasma cleaned linear brush for delicate subsequent processes (lacquering, coating) Linear brushes are packed twice

Technical data are subject to change

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