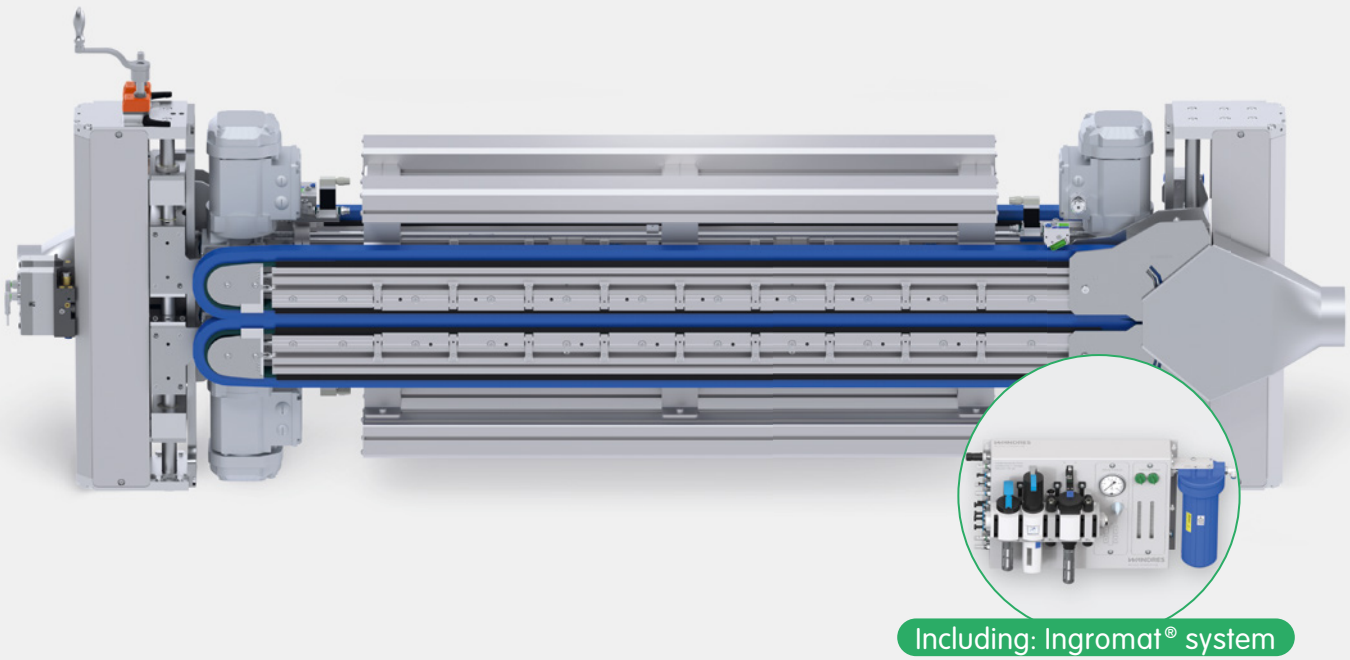
F-Line

Web Sword Brush
Una WB 146



Including: Ingromat® system

For the cleaning of fast running paper, foil and cardboard webs

- Double-sided cleaning
- Pressure buffer
- Lifting of linear brushes at material edges
- Micro moistening
- Pneumatic quick-adjustment

Optional:

- Air-assisted pre-cleaning

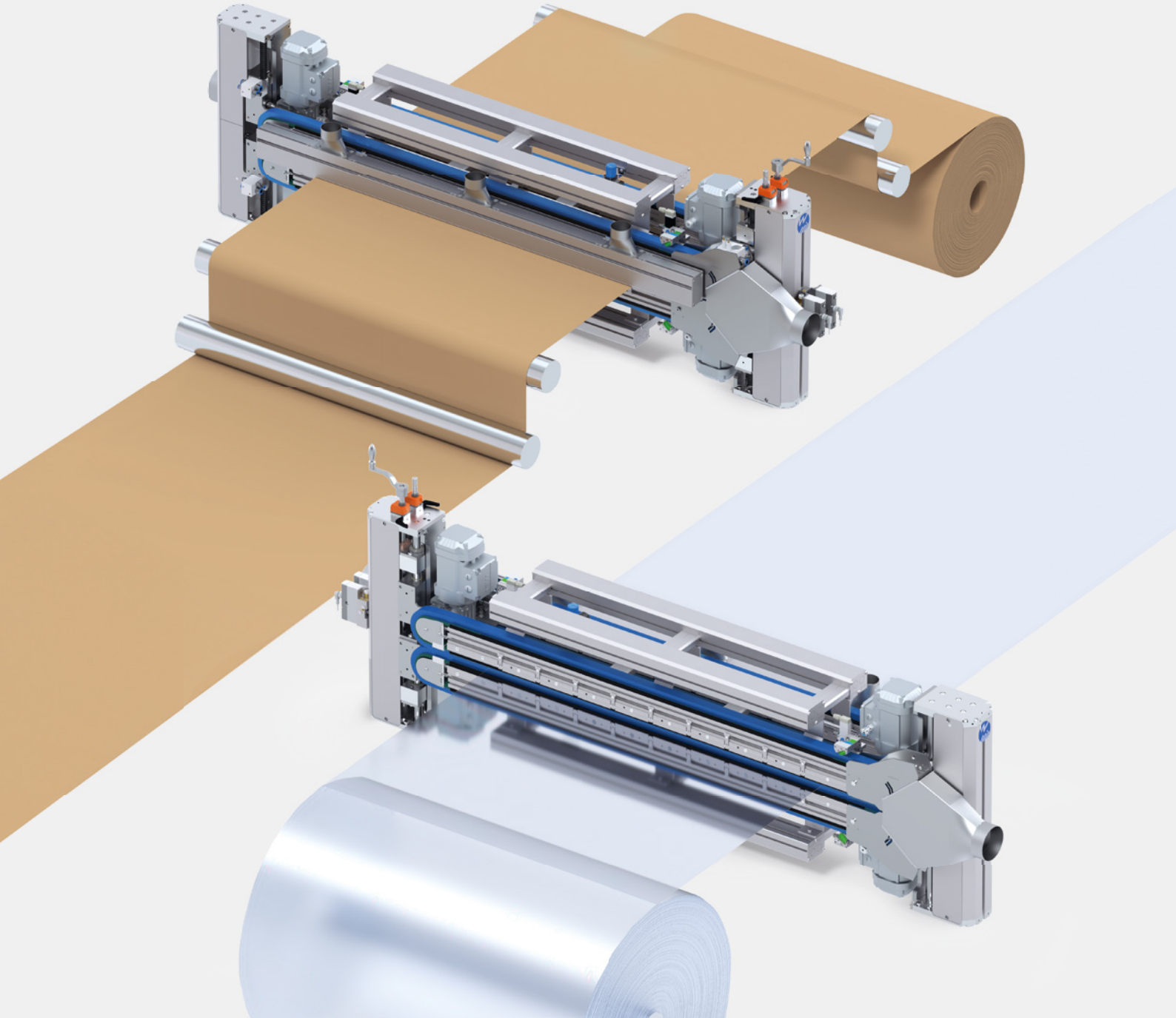
Surface Cleaning Technology

WANDRES micro-cleaning

High-performance cleaning at high web speed

The **Web Sword Brush Una WB 146** provides for a gentle, but effective cleaning process of upper and lower surfaces of fast moving web materials. The machine is ideal to clean both paper and cardboard webs as well as delicate plastic films.

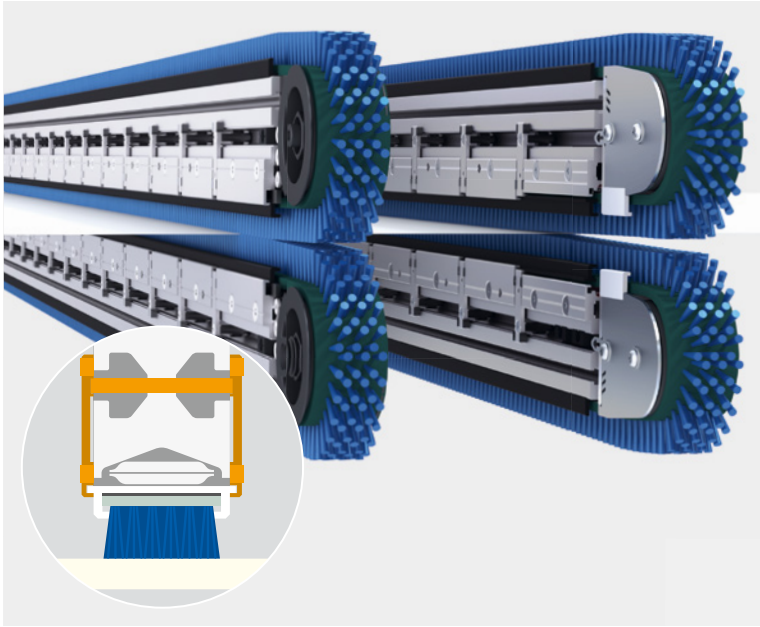
Before printing, the cleaning process avoids particle-related flaws within the printing image and reduces rejection rates considerably. After trimming, the removal of cut particles and paper dust provides for an increase in quality and process reliability.



High web speed

Parallel brush guides

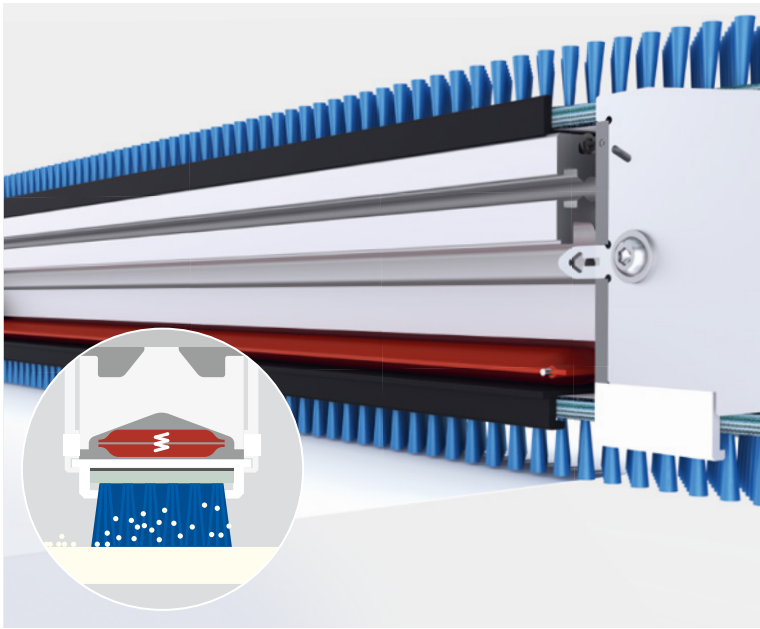
Four Sword Brushes clean very effectively the upper and lower surfaces of the fast moving web. Both sets of Sword Brushes wipe transversally across the web in opposite directions. The linear brushes run in parallel brush guides. This guarantees that linear brushes remain in a stable position on the surface even at high production speed and increases their industrial life.



Consistent wiping pressure

Pressure buffer

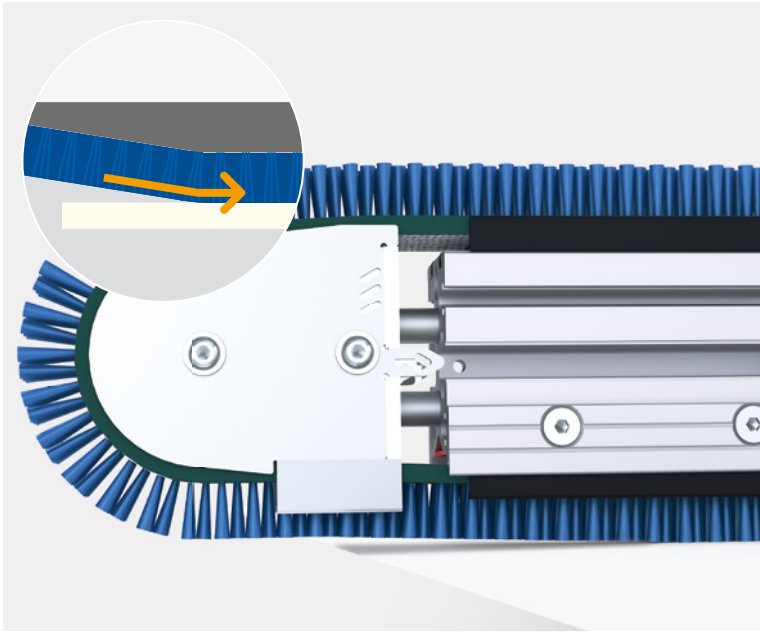
The linear brushes are mounted flexibly on a pressure buffer. The pressure buffer compensates for any material unevenness or thickness variation that may occur. Brush filaments will remain in a vertical position. This allows for a consistent wiping pressure and particles are always removed effectively from the surface.



Gentle wiping of surfaces

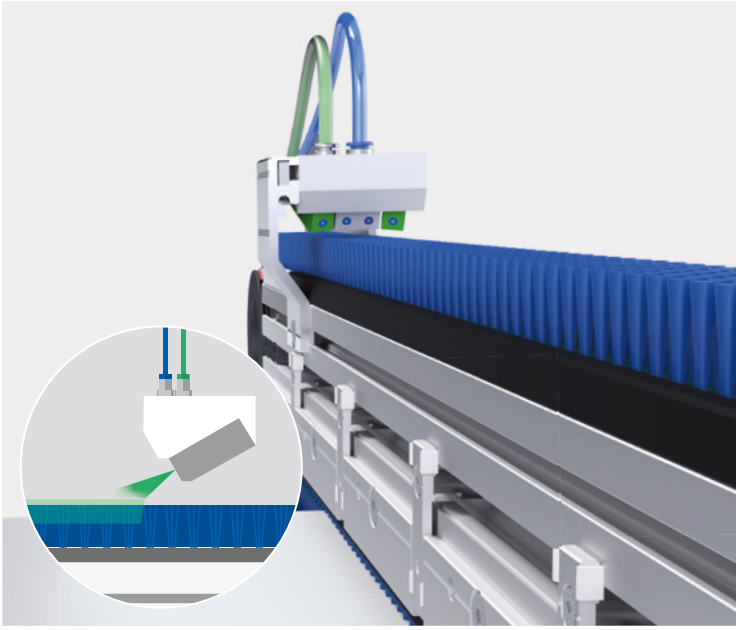
Lifting of linear brushes

Linear brushes are lifted slightly at the edges. They will touch the web surface only after having passed the web's edges. This prevents a folding or a damaging of the web's edges and flattens the material towards the edges. As the Sword Brushes at the infeed wipe in opposite direction to the Sword Brushes at the outfeed, the complete surface will be cleaned - even if the linear brushes are lifted at the edges.



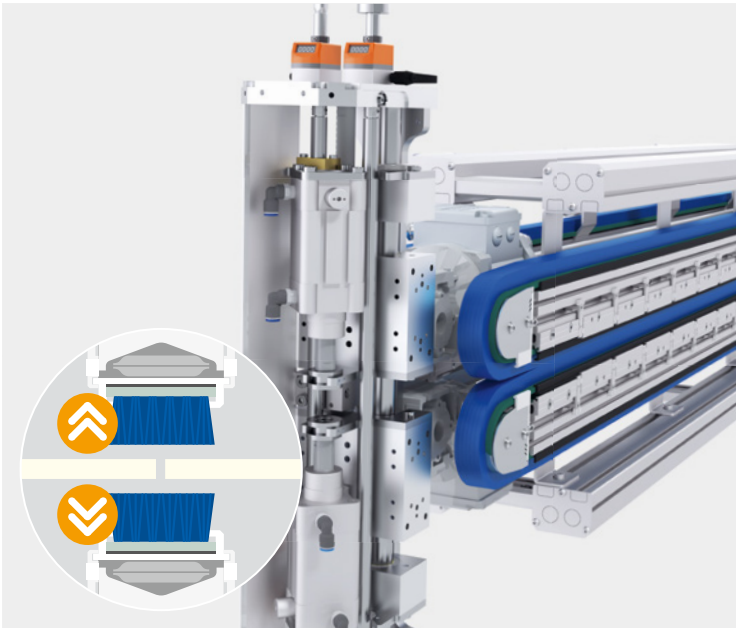
Micro moistening
Ingromat® sprayer

The sprayer applies a thin film of the antistatic cleaning agent Ingromat® in running direction onto the filament tips of the linear brushes. Ingromat® is food-safe, in keeping with FDA regulations and helps to remove electrically charged particles from the surface. The micro-moistening causes even very fine dust particles to cling to the brush filaments that transport them safely towards the suction system.



Rapid height adjustment
Pneumatic cylinder / HVP

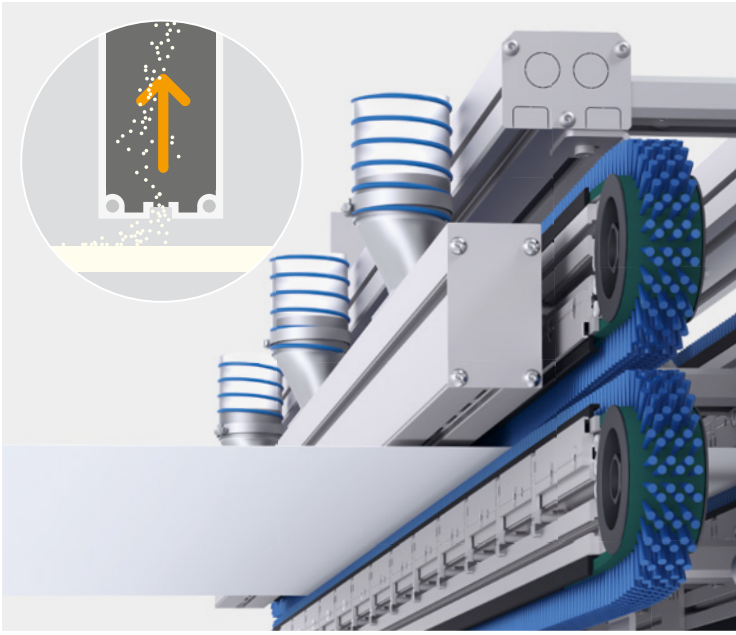
The adjustment frame VEG 125 provides for both a mechanical and a pneumatic height adjustment (HVP). If the web stops, if a junction between two webs passes the cleaning machine or if a new web needs to be threaded, the pneumatic height adjustment HVP removes the Sword Brush modules rapidly by ± 25 mm from the material surface.



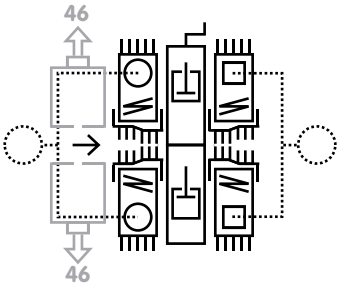
Optional

Contactless cleaning
Trans-Vac-Unit TKL 46

If there is a high amount of dust on the surface, an additional Trans-Vac-Unit TKL 46 may be installed at the infeed of the Web Sword Brush. This suction channel absorbs large quantities of particles without touching the surface and disburdens the Sword Brush modules significantly. The Trans-Vac-Unit TKLU 46 may also be installed for the air-assisted pre-cleaning of the lower surface of the web.



Technical details and dimensions



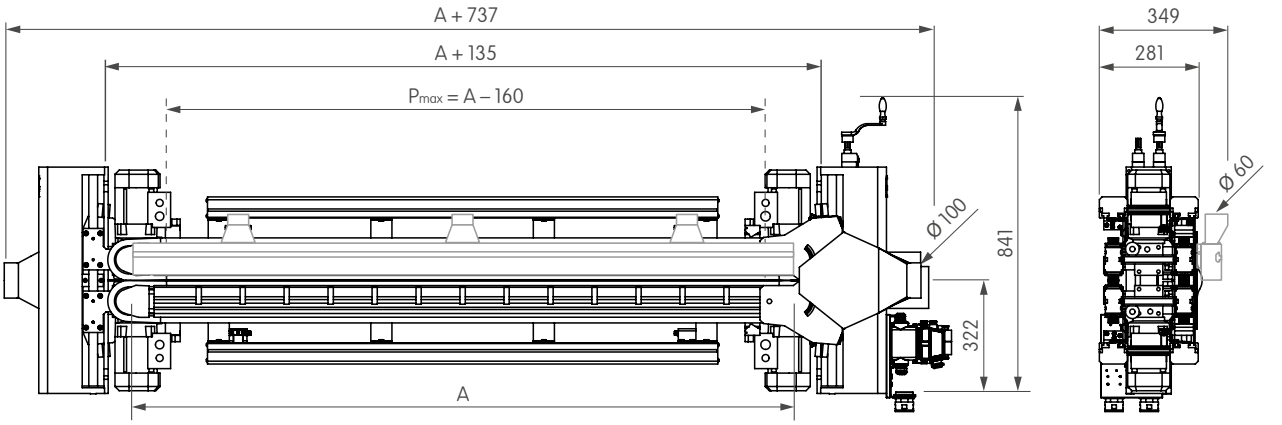
Una WB 146

4 x **Sword Brush BIW 52**
with parallel guide of linear brushes, pressure buffer and Ingromat® system for micro-moistening

2 x **Horizontal collective suction**
including two suction connections with Ø 100 mm

1 x **Adjustment frame VEG 125**
including pneumatic quick adjustment to rapidly remove the brushes from the material surface (± 25 mm)

Trans-Vac-Unit TKLO 46 / TKLU 46
Suction channel for the air-assisted pre-cleaning (option)



A Nominal width of Sword Brush = Distance between deviation roller shafts.
P_{max} max. cleaning width = A – 160 mm

A in mm	520	650	700	850	900	1000	1100	1200	1300	1400
A in inches (rounded)	20	26	28	33	35	39	43	47	51	55
N° of suction sockets TKL 46 (N)	1	1	2	2	2	2	2	2	2	3

A in mm	1500	1650	1700	1900	2000	2100	2200
A in inches (rounded)	59	65	67	75	79	83	87
N° of suction sockets TKL 46 (N)	3	3	3	3	4	4	4

Technical data

Electrical details

Sword Brush drive motor	4 x 0.25 kW SEW motor, IP 54, compatible UL + CSA 50 Hz; △ 220 – 240 V; 1.14 A; ⅄ 380 – 415 V; 0.66 A 60 Hz; △ 240 – 266 V; 1.03 A; ⅄ 415 – 480 V; 0.6 A
Main valve (at IR unit)	2/2 control valve; 1 x 24 V DC; 1.5 W
Ingromat valve	4 x 2/2 control valve: 4 x 24 V DC; 2 W
Pneumatic quick adjustment (HVP)	2 x 5/3 control valve: 4 x 24 V DC; 2.4 W

Pneumatic details

Compressed air quality	filtered (particle size < 40 µm), oil free (residual oil < 1.5 mg/m³ at 24°C)
Compressed air connection	1 x G ½" female thread; 6 bar
Total compressed air consumption	930 l/min (at 1.013 bar and 20°C)

Fluidics

Ingromat® hose connection	1 x Ø 8 mm
Ingromat® consumption	4 x 0.2 – 0.8 l/h

Suction

Suction Sword Brushes	2 x Ø 100 mm; 2 x 820 m³/h
Suction Trans-Vac-Unit TKL 46 (option)	N x Ø 60 mm; N x 300 m³/h (N = see table p. 5)
Operating parameter	min. –500 Pa vacuum; min. 28 m/s (at suction connection)

Acoustic emission

Sound pressure level LpA	ca. 79 dB (A) – depending on surface structure of subject material

Linear brush

Linear brush type	Quadro R6
Filament material	Polyamide 6.12
Filament length	19 mm
Filament-Ø	0.15 mm (standard), optional: 0.127 mm; 0.2 mm

Transport speed

Max. transport speed	600 m/min

Cleaning width

Max. cleaning width	P_{max} = A – 160 mm

Technical data are subject to changes

Wandres GmbH micro-cleaning
www.wandres.com

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