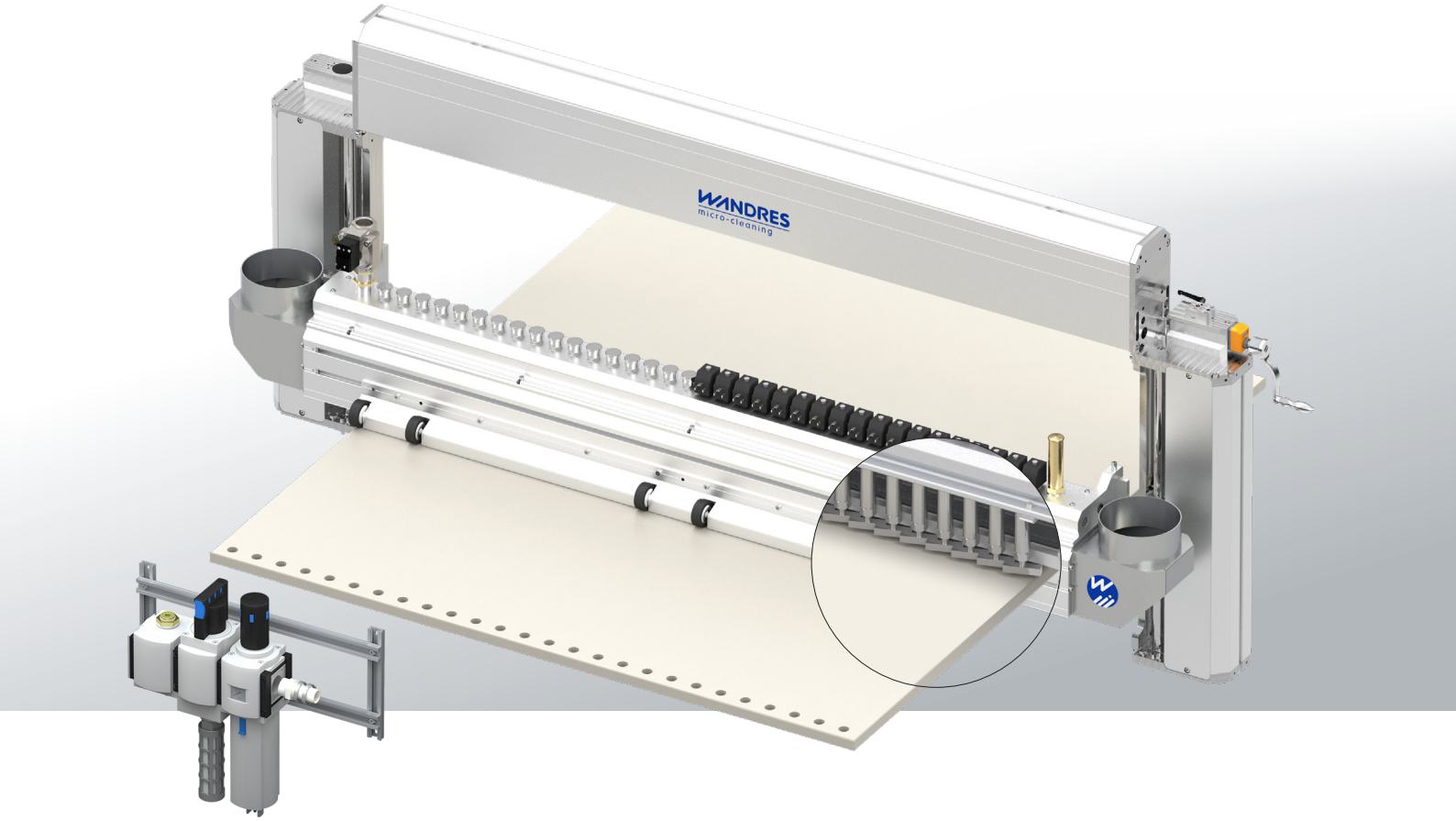
Combi Tornado Channel Una H-TKF 200..

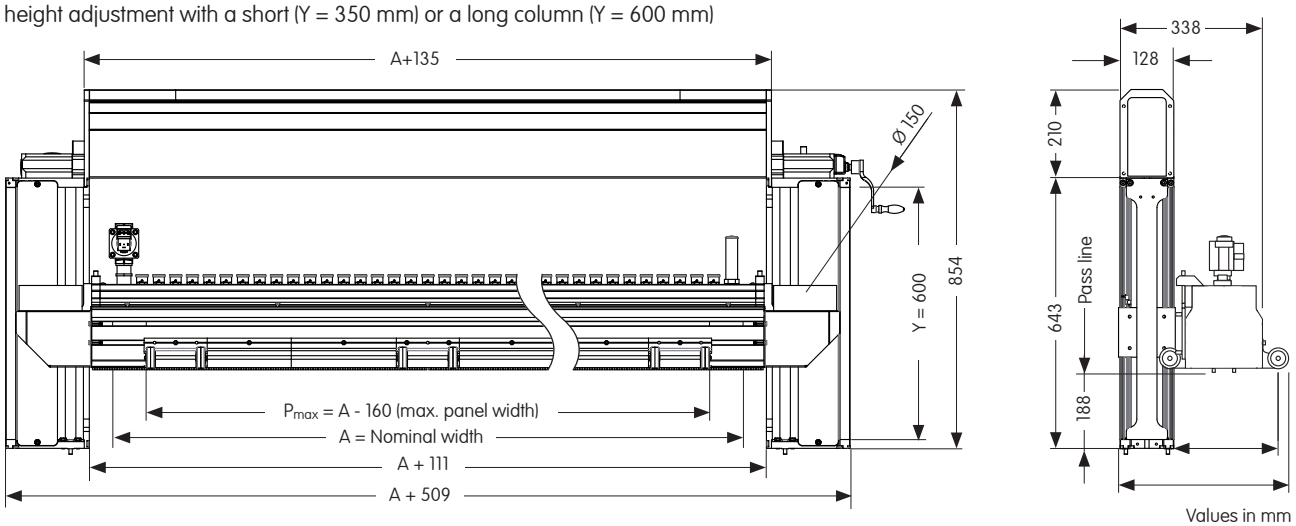


Brief description

The Combi Tornado Channel Una H-TKF 200.. is ideal for the air-assisted contactless cleaning of panels with through holes, blind holes or saw cuttings. Compressed air driven Power nozzles blow onto the surface at a slight angle thus removing particles from the panel and its bore holes. A compressed air tank ensures that compressed air can be instantly supplied to all activated Power nozzles simultaneously right across the board. Wandres recommends to control the magnetic valves via a PLC so that only the Power nozzles near bore holes are activated for a split second. This arrangement will reduce compressed air consumption dramatically.

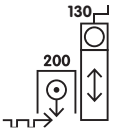
Technical details

- U shaped channel with angles and spacer rollers at the infeed and the outfeed, integrated air tank with pressure relief valve
- Fixed Power nozzles with mechanical or electrical valves
- 1 or 2 suction connections Ø 150 mm facing upwards
- Incoming compressed air regulator with filter, pressure regulator and on-off valve for the compressed air supply (standard). Electrical/pneumatic cabinets are available as an option.
- Adjustment frame VEG 130 with mechanical height adjustment, optionally with electrical and/or pneumatic height adjustment with a short (Y = 350 mm) or a long column (Y = 600 mm)

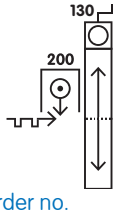


Values in mm

Una H-TKF 200/350..



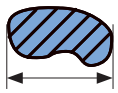
Una H-TKF 200/600..



* with 6 bar compressed air supply if all Power nozzles are activated intervalic for 0.5 seconds per minute

Order no. 2536-	Order no. 2537 -	Nominal width A in mm	Nominal width A in inches	Number of Power nozzles	Number of Suction connections	Number of Pressure rollers	Compressed air consumption m³/min*	
- 003	- 003	400	15.75	7	1	-	0.02	
- 004	- 004	520	20.47	10	1	-	0.03	
- 005	- 005	650	25.59	13	1	6	0.04	
- 058	- 058	700	27.55	15	1	6	0.04	
- 006	- 006	850	33.46	18	1	8	0.05	
- 045	- 045	900	35.43	20	1	6	0.05	
- 007	- 007	1000	39.37	22	1	6	0.06	
- 008	- 008	1100	43.31	25	1	6	0.07	
- 031	- 031	1200	47.24	27	1	6	0.07	
- 009	- 009	1300	51.18	30	1	6	0.08	
- 030	- 030	1400	55.11	32	1	8	0.09	
- 010	- 010	1500	59.05	35	2	8	0.09	
- 011	- 011	1650	64.96	38	2	8	0.10	
- 059	- 059	1700	66.92	40	2	8	0.11	
- 012	- 012	1750	68.89	41	2	8	0.11	
- 032	- 032	1900	74.80	45	2	8	0.12	
- 013	- 013	2000	78.74	47	2	8	0.13	
- 033	- 033	2100	82.67	50	2	8	0.13	
- 014	- 014	2200	86.61	52	2	10	0.14	
- 056	- 056	2300	90.55	55	2	10	0.15	with profile reinforcement
- 015	- 015	2500	98.42	60	2	10	0.16	
- 050	- 050	2700	106.29	65	2	12	0.17	
- 016	- 016	2750	108.20	66	2	12	0.18	
- 060	- 060	2800	110.23	67	2	12	0.18	
- 036	- 036	2900	114.17	70	2	12	0.19	
- 017	- 017	3000	118.11	72	2	12	0.19	
- 018	- 018	3200	125.98	77	2	14	0.21	
- 039	- 039	3400	133.85	82	2	14	0.22	

suitable for particles with max. feret diameter 7 mm

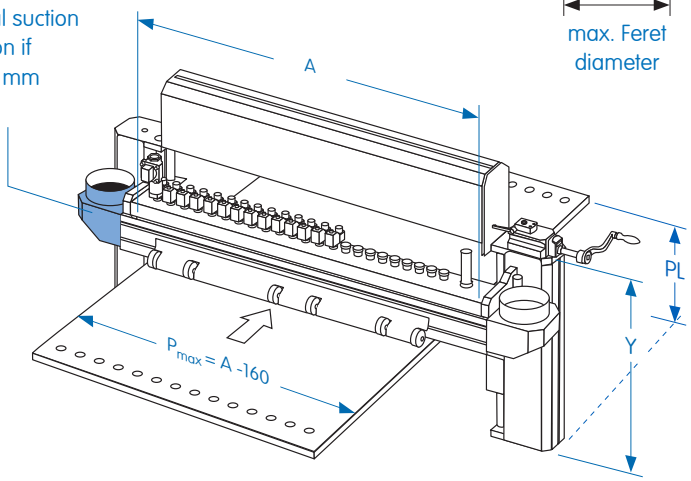


max. Feret diameter

Ordering example

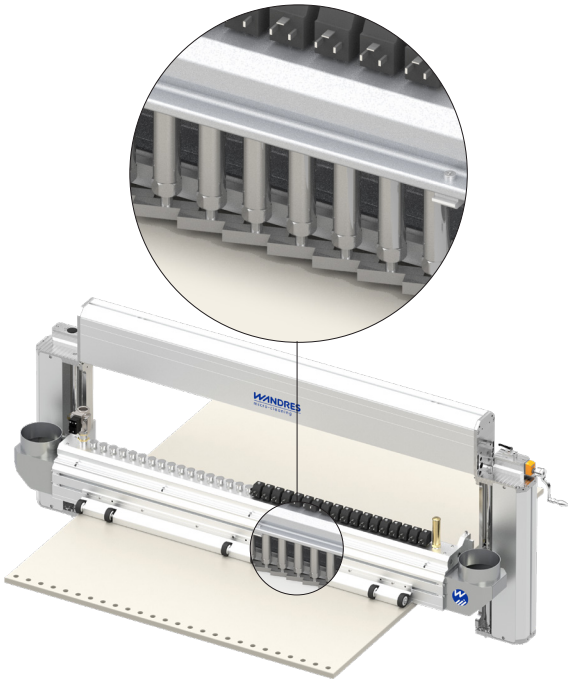
The subject panel has a max. width of
P_{max} = 1300 mm
Minimum nominal width of Tornado Channel:
$A_{min} = P_{max}$+ 160 mm = 1460 mm
The most suitable Combi Tornado Channel has a nominal width of A = 1500 mm.
Order no. 2451-010
describes Una H-TKF 200/600/1500

additional suction connection if A = 1500 mm or bigger



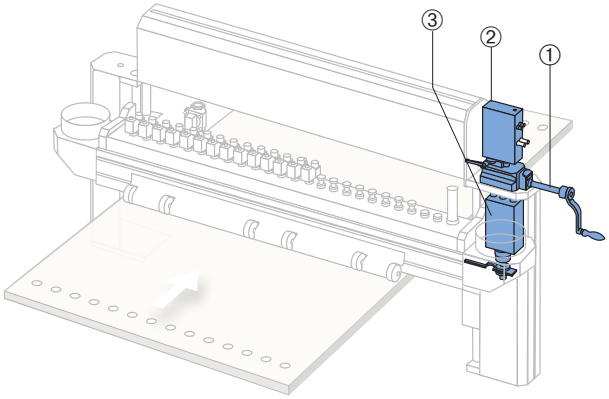
Explanation

A	Nominal width A
PL	Pass line = distance between mounting area and lower panel surface
P_{max}	max. panel width = A - 160 mm
Y	Nominal measure of adjustment frame



Functional description

The Power Nozzles clean the surface with compressed air. It is blown onto the surface at a slight angle. Adhesive particles are detached from bore holes and saw notches, deflected and sucked off. A customized control of the magnetic valves reduces compressed air consumption to a minimum while providing a highly efficient contactless cleaning procedure. Ideally, compressed air impulses are only given for a fraction of a second at areas where bore holes or saw notches occur.
The individual control of the electrical valves yields very efficient air-assisted cleaning results and reduces compressed air consumption.



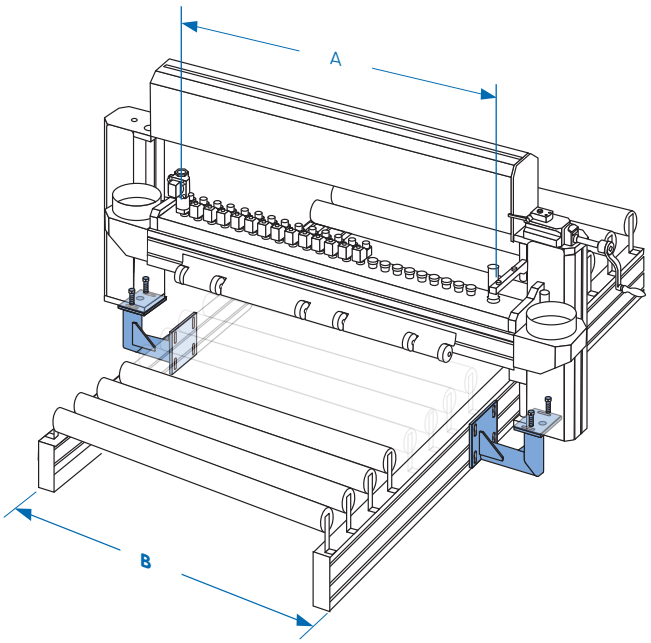
Height adjustment

An adjustment frame provides for a simple adjustment of the Tornado Channel to the panel's thickness.

① HVM: Manual adjustment
via a crank (standard)

② HVE: An electrical actuator (option) provides for an automatic thickness adjustment
in combination with the overall control of the line.

③ HVP: This is an additional option where pneumatic cylinders remove the cleaning unit rapidly from the subject surface e.g. in crash situations. Both the mechanical and the electrical height adjustment may be combined with this pneumatic quick adjustment.



Integration into roller conveyors

The Combi Tornado Channel can be integrated easily into existing roller conveyors made by Homag. The cleaning system is attached to the roller conveyor via mounting brackets (4160483) that can be supplied as an option.

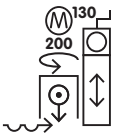
Nominal width of the Tornado Channel
depends on the roller conveyor width B.:

B = A – 300 (–40/+25) mm

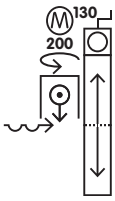
If you have a roller conveyor width of 1200 mm, you should choose a Tornado Channel with nominal width A=1500 mm, i.e.
order no. 2451-010
Una H-TKF 200/600/1500

Technical details

Una H-TKF 200/350



Una H-TKF 200/600



Electrical details

Main valve Tornado Channel	2/2 directional valve; 1 x 24 V DC; 11 W
Magnetic valves Power nozzle	24 V DC; 0.5 A each
Electrical height adjustment (HVE)	24 V DC; 150 W (AG 02); 35 W (PSE); control via PLC
Pneumatic quick adjustment (HVP)	5/3 directional valve; 2 x 2.4 VDC; 2.4 W

Pneumatic details

Compressed air quality	filtered (particle size < 40µm), oil free (residual oil < 1.5 mg/m³ at 24° C)
Compressed air connection	1 x 1" female thread; 6 bar
Compressed air consumption	320 l/min per Power nozzle; total see table on page 2 For a short period of time, all nozzles may be activated. For continuous operations, no more than 36 nozzles should be activated simultaneously!

Suction requirements

Suction connection	**A** < 1500 mm	**A** ≥ 1500 mm
	1 x Ø 150 mm	2 x Ø 150 mm
Suction air volume flow	1 x 30 m^3/min	2 x 30 m^3/min
Operating parameters	min. -500 Pa vacuum; min. 28 m/s (measured at suction connection)	

Acoustic emission

Max. sound pressure level	approx. 86 dB(A) if all Power nozzles are activated; depends on the number of activated nozzles, the surface features and the geometry of the subject panel.

Transport speed

Max. transport speed	30 m/min if speed exceeds 30 m/min, some particles may remain in smaller bore holes

Dimensions

Min. panel length	L_{min} = 300 mm
Panel width	P_{max} = A – 160 mm; P_{min} = 75 mm (upon request)
Bore hole Ø	min. 4 mm
Bore hole depth	max. 12 mm
Distance Tornado Channel to surface	TCD = 5 mm

Technical information is subject to changes

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