Pero

Water based cleaning

KDA TUNNEL PLANT

COMPACT CLEANING PLANT FOR WATER BASED MEDIA

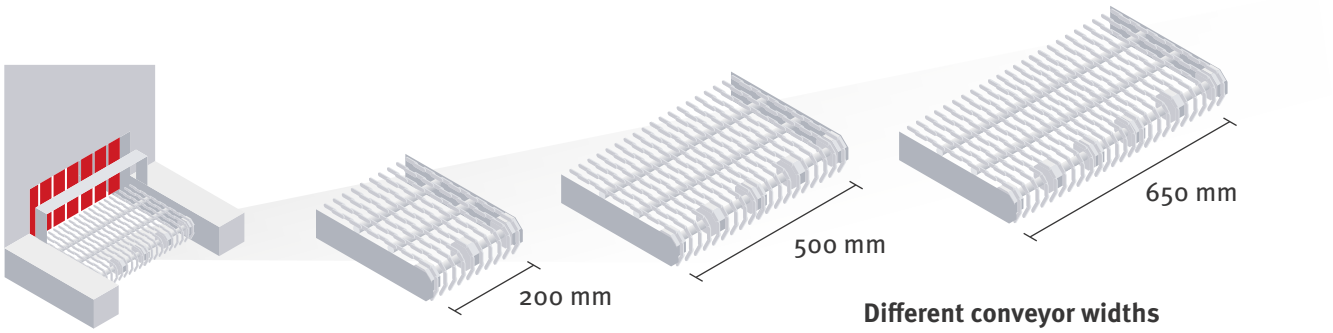
TOUGH AND INDIVIDUAL

Exemplary illustration

TOUGH AND INDIVIDUAL

The compact KDA tunnel plants enable a high throughput and prove their excellent cleaning and drying results.

They are suitable for the cleaning of diverse parts with different geometries and sizes. Our plants stand out for a high reliability and longevity.



Different conveyor widths

With different conveyor widths (200/500/650 mm) and diverse equipment versions, the various cleaning tasks can be perfectly achieved.

The technical cleanliness is reached with water based media in a slightly acidic, neutral or alkaline pH range.

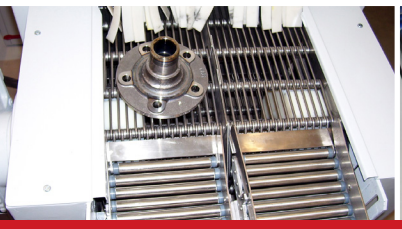
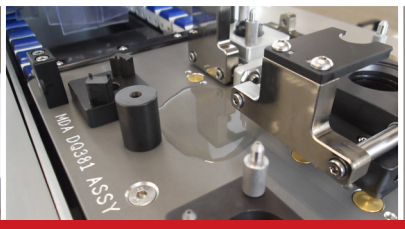
EFFICIENT MEDIA CARE

Media care is designed according to the individual application.

The tunnel cleaning plants are equipped with basket filters (with stainless steel screen) as standard. The cleaning medium flows through them back into the media tanks. Optionally, bag filters or magnetic cartridges are also available for the filters, which extend the filters‘ service life considerably.

Optional bath care units can significantly extend the service life of the cleaning media. This avoids maintenance, reduces costs and increases availability.

+ Prepared for connecting oil separator, separators, micro- and ultra-filtration
+ The control of the optional oil separator is integrated

FUNCTIONAL ZONES

The proven process technology makes use of the diverse functionality of compactly constructed chambers.

+ High degree of technical cleanliness by spray cleaning
+ The special spray nozzles can be flexibly adapted to the parts geometry
+ The spray pressure above and below is independently adjustable from one another

WASHING

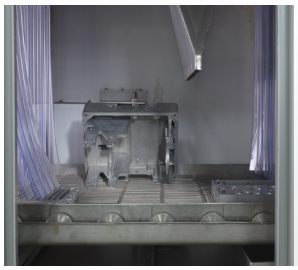
+ Aqueous cleaning medium
+ Different nozzles optionally selectable

+ Removing contamination

RINSING

+ Different nozzles optionally selectable

+ Removing residues and cleaning media

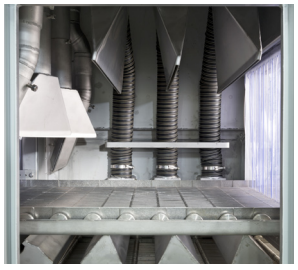


NEUTRAL

+ Height of upper blowing nozzles adjustable

+ Reducing transmission of the cleaning medium

+ Dripping off; reduce energy requirement for drying



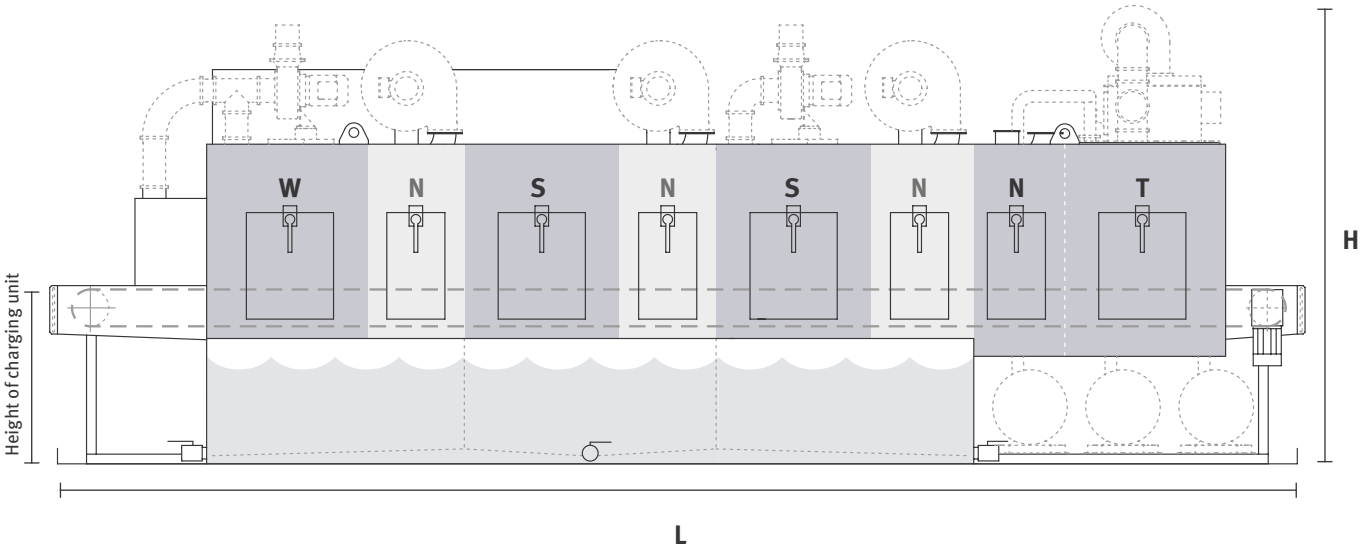
DRYING

+ Optionally with lateral canal compressor or compressed air
+ Blowing off and drying with hot air

+ Optimal drying of the workpieces

TECHNICAL DETAILS

WSSNT-Configuration

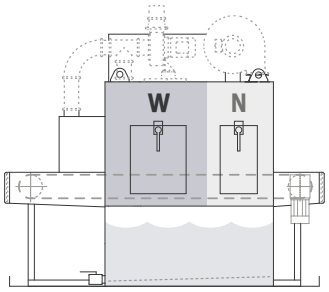


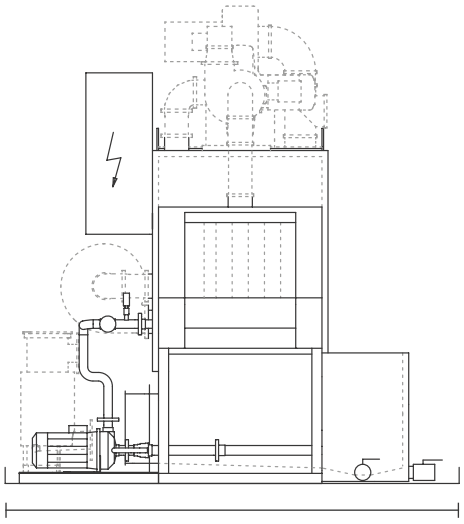
Explanation of the different zones

W=Washing N= Neutral S=Rinsing T=Drying

Transport / Goods carriers	KDA 20			
Conveyor width	200 mm			
Passage height	300 mm			
Conveyor load, max.	40 kg/m*			
Height of charging unit	900 mm			
Conveyor speed	0.4 – 2.8 m/min **			
Performance data	**W**	**WT**	**WSNT**	**WSST**
Heating output baths	24 kW	24 kW	42 kW (24 + 18)	66 kW (24+18+24)
Heat output dry zone (option)	–	10 kW		
Volume flow cleaning (pressure)	160 l/min (2.0 bar)			
Volume cleaning bath	300 l	300 l	300 l	300 l
Volume rinsing bath 1 (rinsing bath 2)	–	–	340 l	330 (350) l
External plant dimensions	**W**	**WT**	**WSNT**	**WSST**
Length L	2.5 m	3.3 m	5.1 m	5.9 m
Width W	1.7 m	1.7 m	1.7 m	1.7 m
Height H	2.3 m	2.3 m	2.3 m	2.3 m

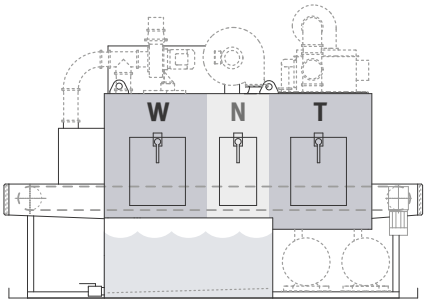
W-Configuration



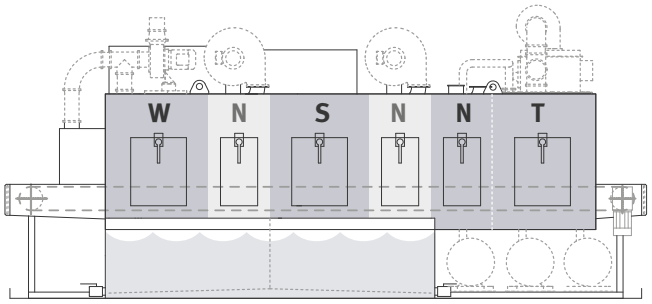


W

WT-Configuration



WSNT-Configuration



KDA 50				KDA 65		
500 mm				650 mm		
300 mm				400 mm		
40 kg/m*				40 kg/m*		
900 mm				1,000 mm		
0.4 – 2.8 m/min **				0.4 – 2.8 m/min **		
W	WT	WSNT	WSSNT	WT	WSNT	WSSNT
42 kW	42 kW	78 kW (36 + 42)	108 kW (36 + 30 + 42)	36 kW	78 kW (36 + 42)	108 kW (36 + 30 + 42)
–	18 kW			20 kW		
280 l/min (1,8 bar)				520 l/min (2.0 bar)		
515 l	515 l	455 l	455 l	530 l	530 l	510 l
–	–	515 l	500 (515) l	–	575 l	550 (570) l
W	WT	WSNT	WSSNT	WT	WSNT	WSSNT
2.5 m	3.3 m	5.1 m	6.4 m	3.4 m	5.4 m	6.8 m
2.1 m	2.1 m	2.1 m	2.1 m	2.4 m	2.4 m	2.4 m
2.3 m	2.3 m	2.3 m	2.3 m	2.6 m	2.6 m	2.6 m

* Higher weights on request
** Reduction to 0.12 m / min or increase to 7 m / min optionally possible
*** Behind every washing and rinsing zone there is always a neutral zone. This reduces transmission

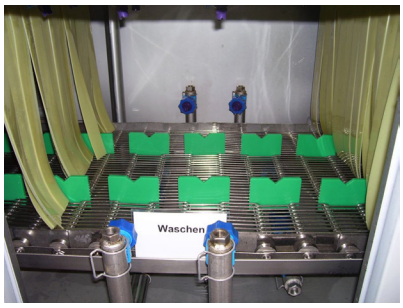
All the data are approximate figures - Errors and omissions reserved

FLEXIBLE CONVEYOR DESIGN

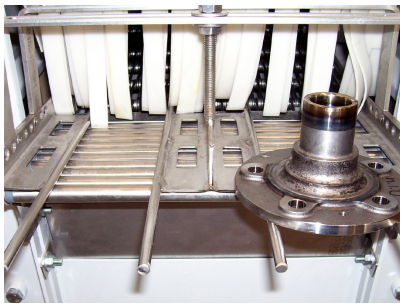
In a KDA, components with different geometries and dimensions can be cleaned. This high flexibility is achieved, among other things, by the customer-specific adaptation of the conveyor belt.

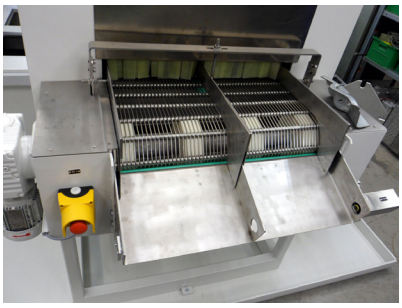
The implementation of a compact KDA tunnel plant in a connected working process is done by transfer plate or rollers. Loading and unloading with a robot can be carried out as required.

Below, some examples of such conveyor belts are presented. (Further variations on request)



Prism guide

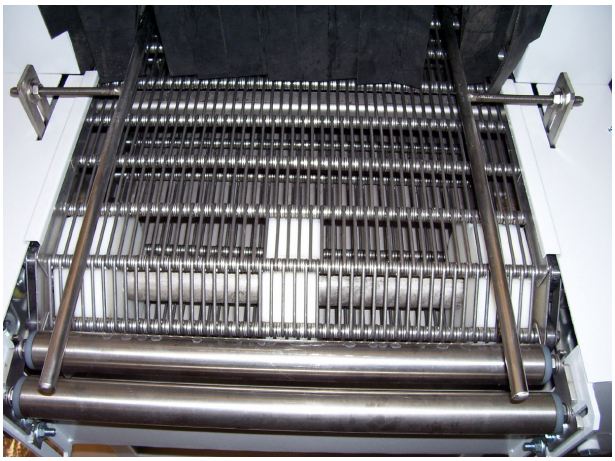

Round bar support


Two-lane tape guide

Wire eyelet link belt (standard)

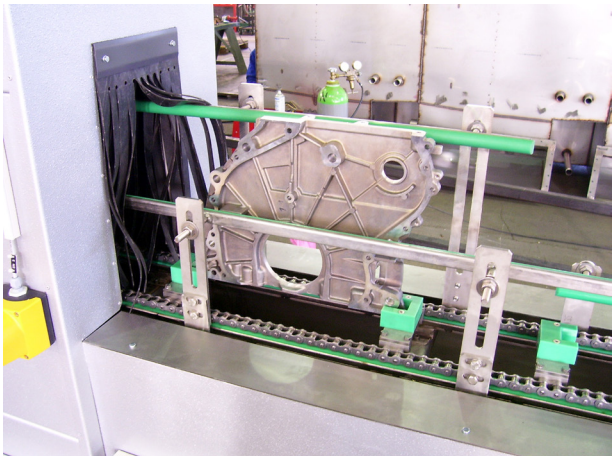
On the robust and durable wire eyelet link belt, components of different geometries, quantities and weight can be transported in any order.

Different gap widths, ducts, extension links and prism mounting enable direct positioning on the conveyor. (Further versions on request)



Chain conveyor

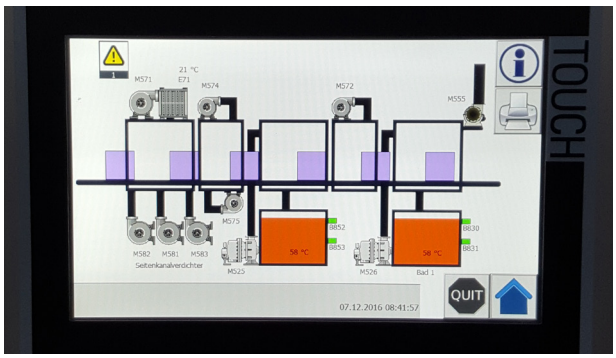
A wide range of goods carriers can be used on the conveyer, with the option to return the goods carriers to the start position.



RELIABLE PROCESS CONTROL

The modern SPS control of the plant coordinates the functions of the single aggregates and supervises the processes.

+ The intuitive operation is effected over a modern colour display with touch function
+ The weekly timer ensures the operational availability
+ A signal exchange with external aggregates is possible
+ Optionally, the filter pressure is monitored



Process visualisation

Display on the swivel arm (optionally available)

RELIABLE DRYING

Workpieces are dried reliably thanks to an optimum airflow.

+ The strong extraction fan evacuates the steam
+ The airflow can be flexibly adapted to the parts geometry
+ The optional hot-air heating in the dry zone is working with circulating air and if needed, with individually adjustable rate of fresh air
+ Optional lateral canal compressors for blowing off the residual moisture in the recesses and complexly shaped components
+ Sensor-controlled drying with compressed air optionally available

UNI oil separator – separates oils and greases floating up

Air heater with blowing nozzles – dries the workpiece

Water cooled vapour condenser (option) – extraction and condensation of the steam

Lateral canal compressor (option) – optimised drying results

COMPETENCE CENTRE

FOR THE TECHNICAL CLEANLINESS OF COMPONENTS

More than **15 demonstration machines** available in our 1,100 square meter Competence Centre, allowing you together with our Pero engineers to develop the optimum cleaning process for your company.

Cleaning process with

Water based media

+ Batch facilities for quality carriers up to 660 x 480 x 300 mm
+ Tunnel cleaning plants
+ Cleaning systems for large components up to a width of 2,100 mm and a weight of 1,500 kg

Solvents

+ Comparing different media
+ Testing alternative cleaning processes
+ Seeing the appropriate handling of parts

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MAKING USE OF STRONG PERFORMANCE

+ Free cleaning tests on original dirty party including documentation
+ Evaluations and analyses of cleanliness according to VDA 19 in **our laboratory**
+ Technological insight and valuable data for your company

Even before you have decided about the investment, assessing the profitability of the future process can be carried out. The defined technical cleanliness of the components reliably reached and maintained.

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