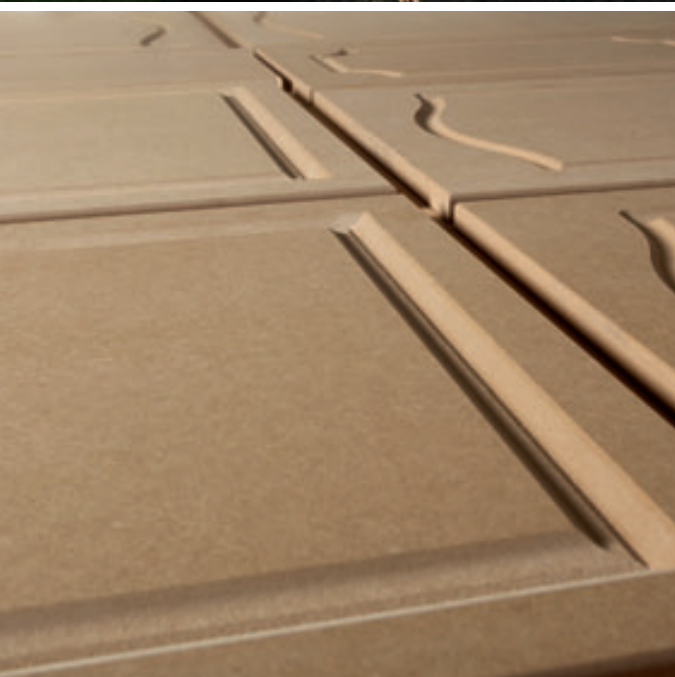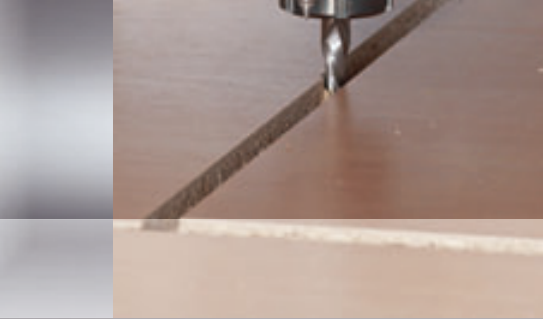# Nested Based CNC-Router
Vantech 480 | 510 | 512 | 612

Vantech 480 | 510 | 512 | 612

Nesting technology means to „nest" workpieces in order to achieve optimum material utilization by using cutting optimization.
Nesting offers the opportunity to significantly improve yield particularly when processing a large variety of shaped parts.

The magic always
lies in the detail...

Theodor Fontane

Content

Basic Machine

BASIC
PACKAGE

FUTURE
PACKAGE

PERFORMANCE
PACKAGE

MATRIX

power
Touch

Choose your system in two easy steps:

1

| First: Choose your automation level		
A Basic Machine (BM)	=	stand alone | Concept BASIC HANDLING
B BM with Outfeeding	=	finished parts moved out automatically | Concept Outfeed
C BM with Infeeding + Outfeeding	=	full board moved in automatically and finished parts moved out automatically | Concept 1| Concept 2
D BM with Infeeding + Labelling + Outfeeding	=	full board moved in automatically and be labelled (e.g. barcode) and finished parts moved out automatically | Concept 3

detailed Concept overview on page 20/21

2

| Secondly: Choose your power processing level:		
I. BASIC PACKAGE	=	compatibel with **A**
II. FUTURE PACKAGE	=	compatibel with **A** | **B** | **C** | **D**
III. PERFORMANCE PACKAGE	=	compatibel with **A** | **B** | **C** | **D**
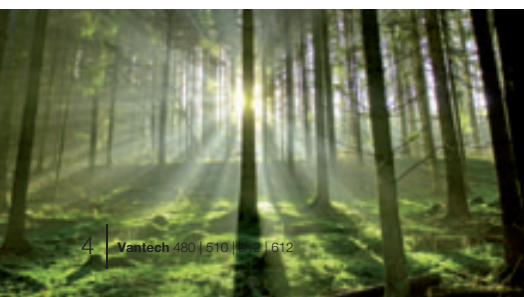
Choose your power processing level:

BASIC
P A C K A G E
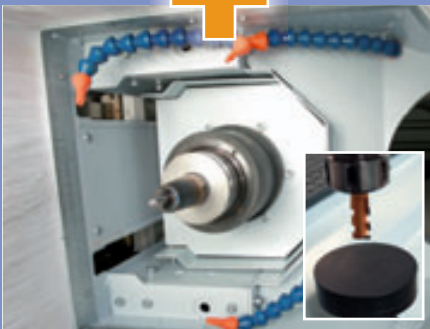
- 7 vertical drilling spindles
- Tool changing system with tool pick-up station
  (480: 7 pick-up places /
  510-512: 8 and 612: 9 pick-up places)
- 13 HP (10 kW) HSK 63 routing spindle or 18 HP (13,2 kW) HSK 63 routing spindle with Air Jet Technology
- Tool length control

FUTURE
P A C K A G E
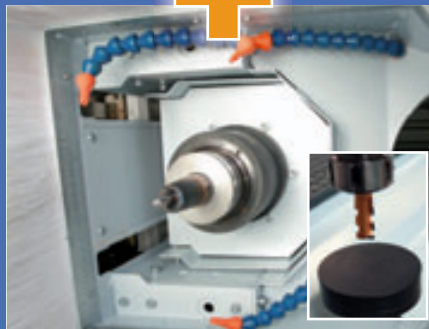
- 7 vertical drilling spindles
- 13-fold tool changer disc-type pick-up
- 13 HP (10 kW) HSK 63 routing spindle or 18 HP (13,2 kW) HSK 63 routing spindle with Air Jet Technology
- Tool length control

PERFORMANCE
### P A C K A G E
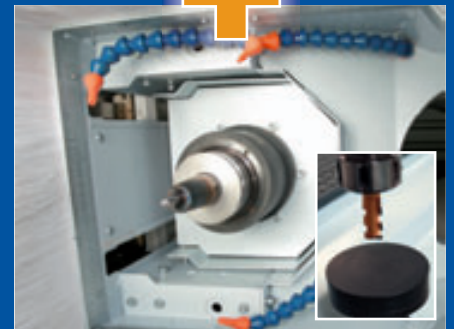
- 12 vertical drilling spindles
- 13-fold tool changer disc-type pick-up
- 13 HP (10 kW) HSK 63 routing spindle or 18 HP (13,2 kW) HSK 63 routing spindle with Air Jet Technology
- Tool length control

Equipment as described in this brochure is subject to technical changes and further developments.
Technical data refer to standard equipment and are not binding for the order.
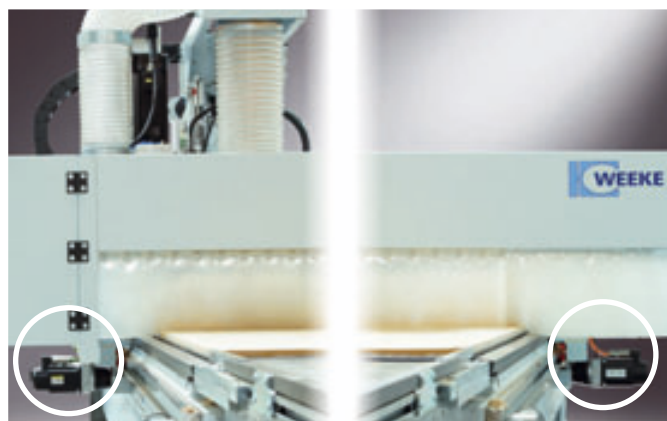
Handling Concept Outfeed
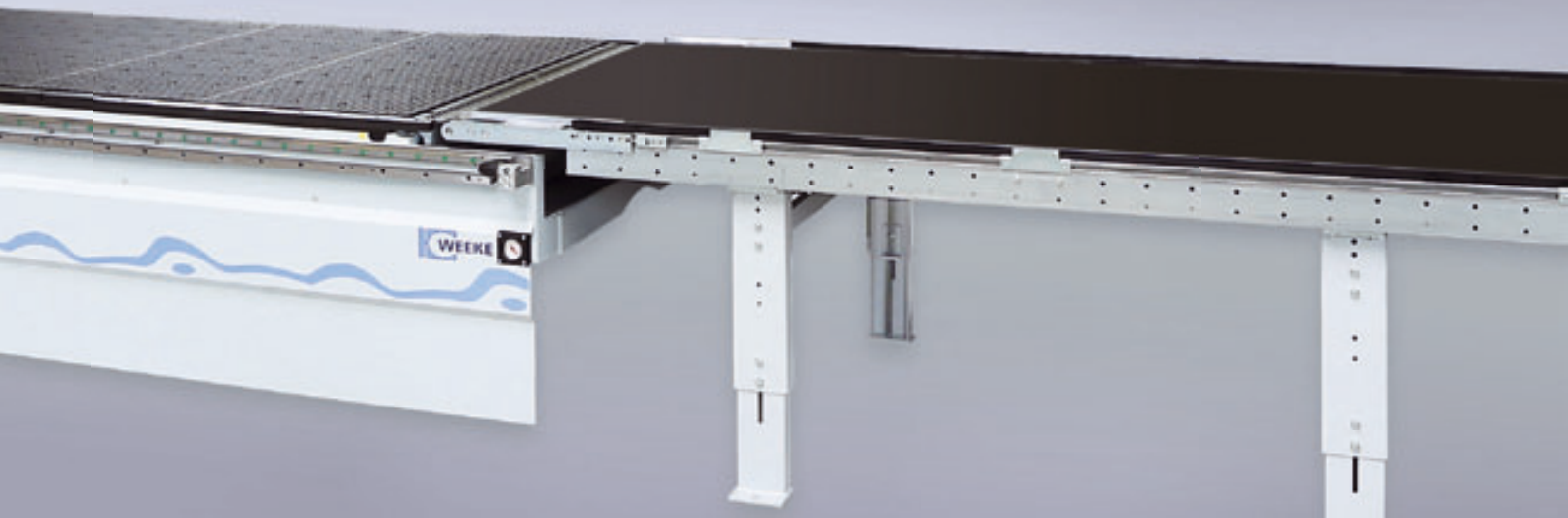
Basic Machine
+ Outfeed
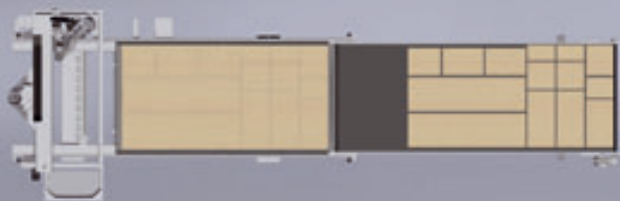
MATRIX

powerTouch

Synchronous drive

• 2 synchronized X-drives guarantee highest processing quality
• 96 m/min vector speed

powerControl with powerTouch

• 21,5" Full-HD multitouch display with wide screen 16:9
• Front USB interface
• Ethernet connection 10/100 Mbit

Dust extraction channel at the outfeed from below

- For cleaning of the workpieces during feeding out

Lowerable fence guide and program-controlled positioning

- Suitable for safe outfeed of workpieces
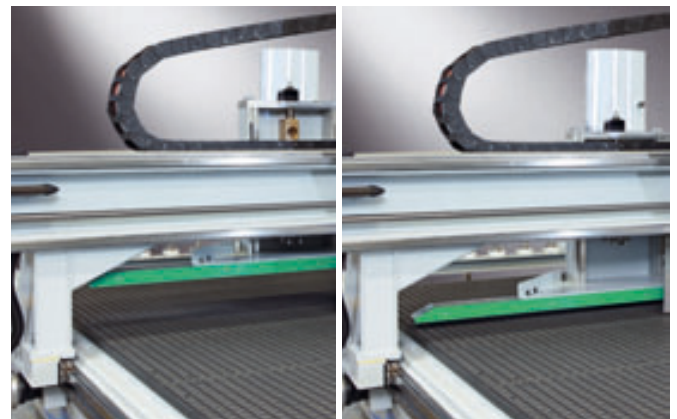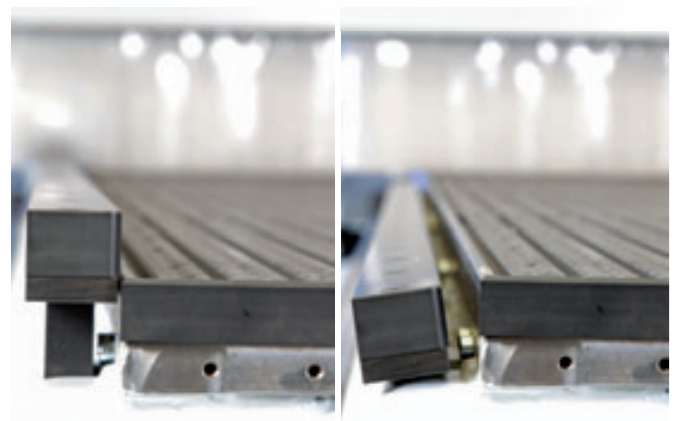- Electr.surveillance of all guides and stops

Transport belt

- A workpiece safety control device is attached at the end of the conveyor belt, this stop function can be deactivated via a foot switch

Push-off device

- Automatic push-off device, mounted to the gantry, for pushing off workpieces and dust extraction for cleaning cover board

Handling Concept 1

Basic Machine
+ **Infeed (Customer)**
+ **Outfeed**

Infeed table to be provided by customer
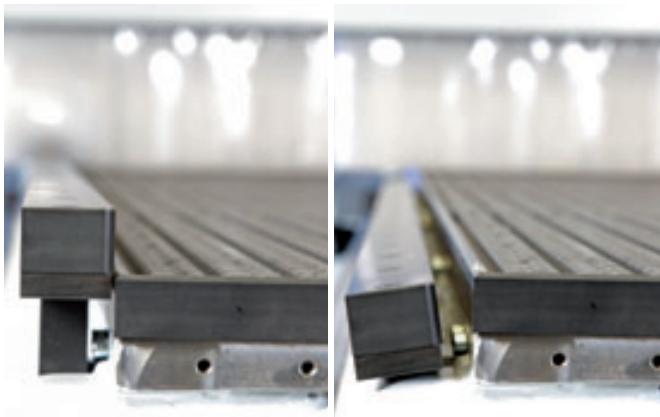
MATRIX

power Touch

Transfer rollers

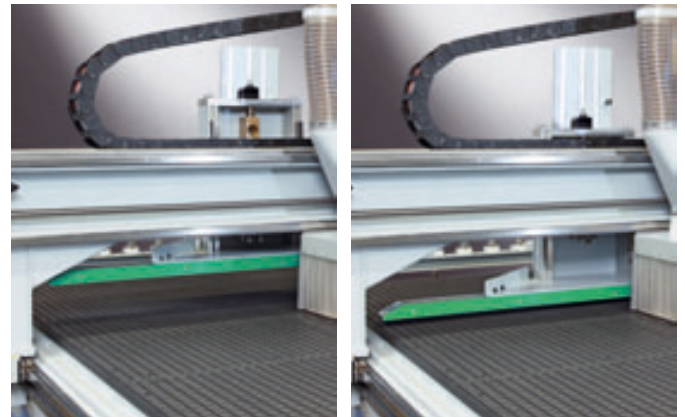• Intermediary transfer rollers to prevent scratching during the loading process

Vacuum arm for positioning

• The vacuum arm takes over a pre-positioned raw board and aligns this against the end of the table in X direction

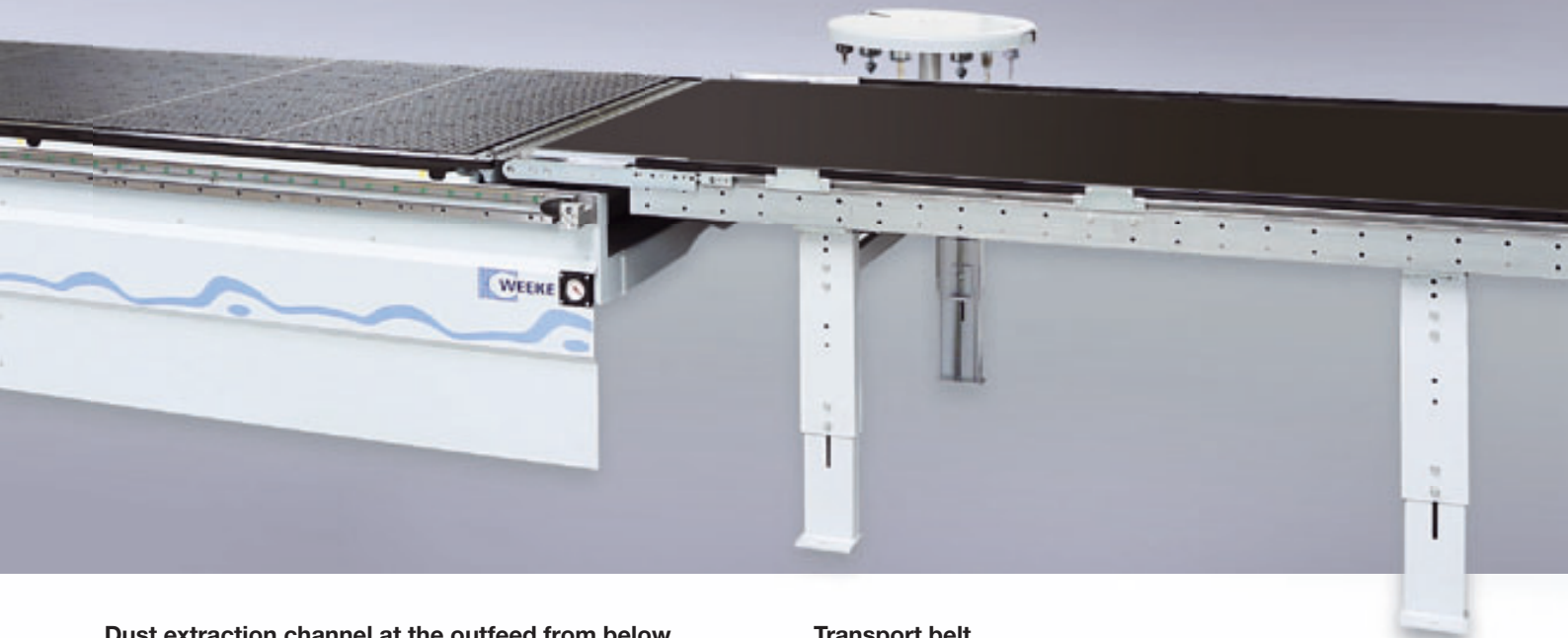### Lowerable fence guide and program-controlled positioning

• Suitable for safe outfeed of workpieces
• Electr.surveillance of all guides and stops

Push-off device

• Automatic push-off device, mounted to the gantry, for pushing off workpieces and dust extraction for cleaning cover board
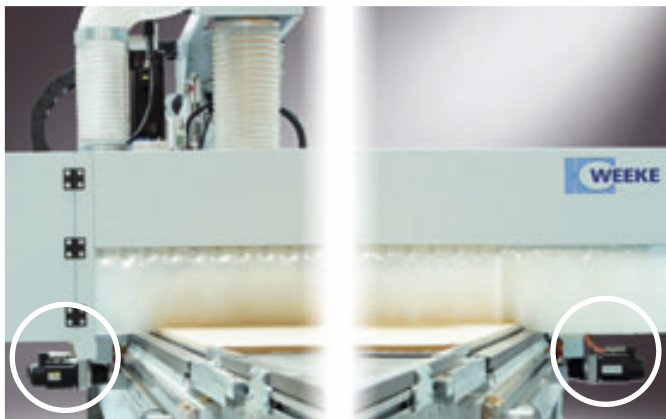
Dust extraction channel at the outfeed from below

• For cleaning of the workpieces during feeding out

Transport belt

• A workpiece safety control device is attached at the end of the conveyor belt, this stop function can be deactivated via a foot switch

Synchronous drive

• 2 synchronized X-drives guarantee highest processing quality
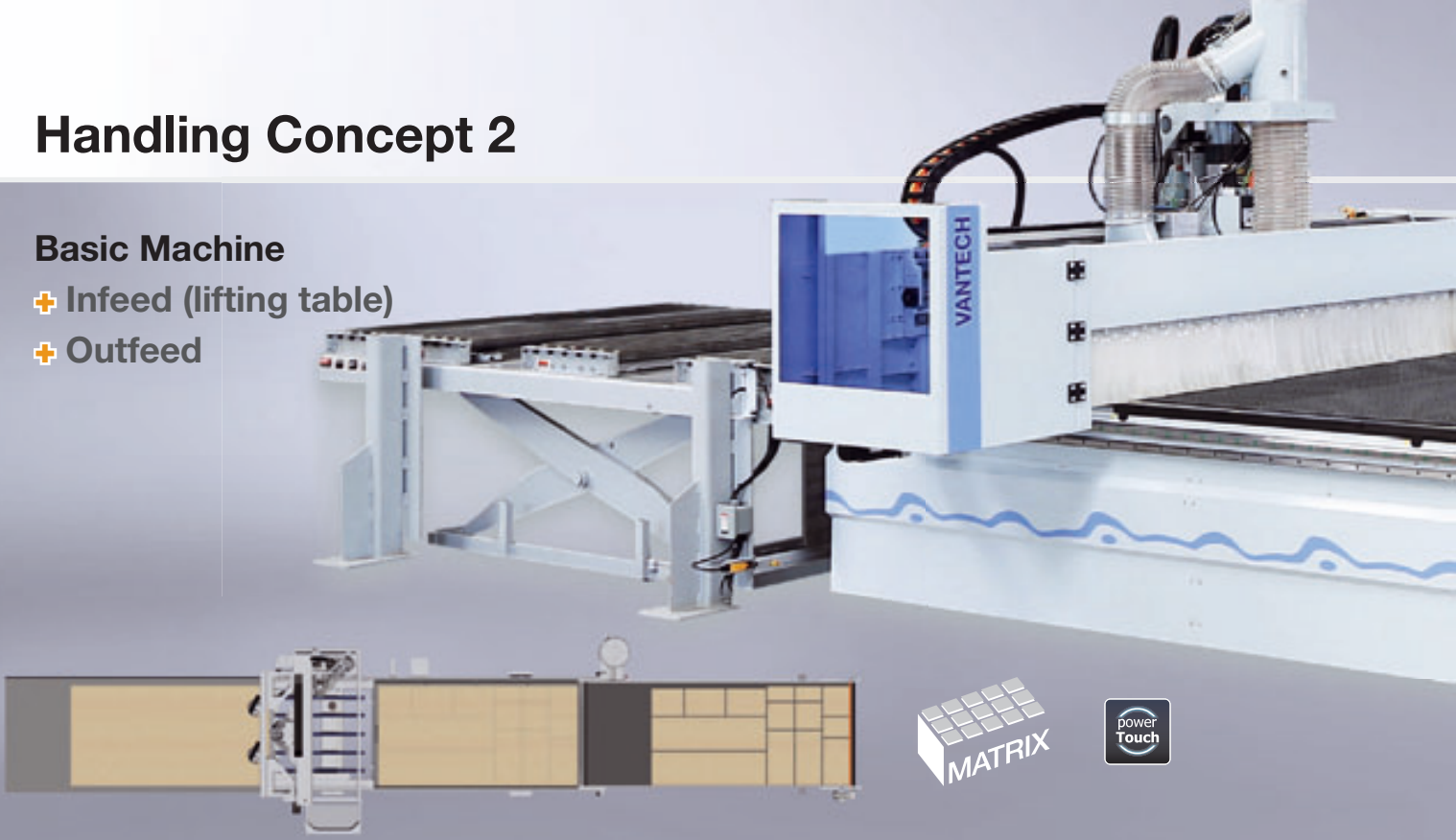• 96 m/min vector speed

powerControl with powerTouch

• 21,5" Full-HD multitouch display with wide screen 16:9
• Front USB interface
• Ethernet connection 10/100 Mbit

Handling Concept 2

Basic Machine
+ **Infeed (lifting table)**
+ **Outfeed**

MATRIX

power Touch

Lifting table
• For easy infeeding

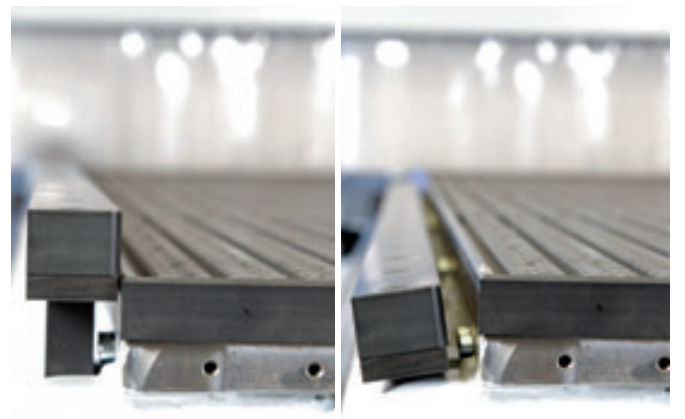### Transfer rollers
• Intermediary transfer rollers to prevent scratching during the loading process
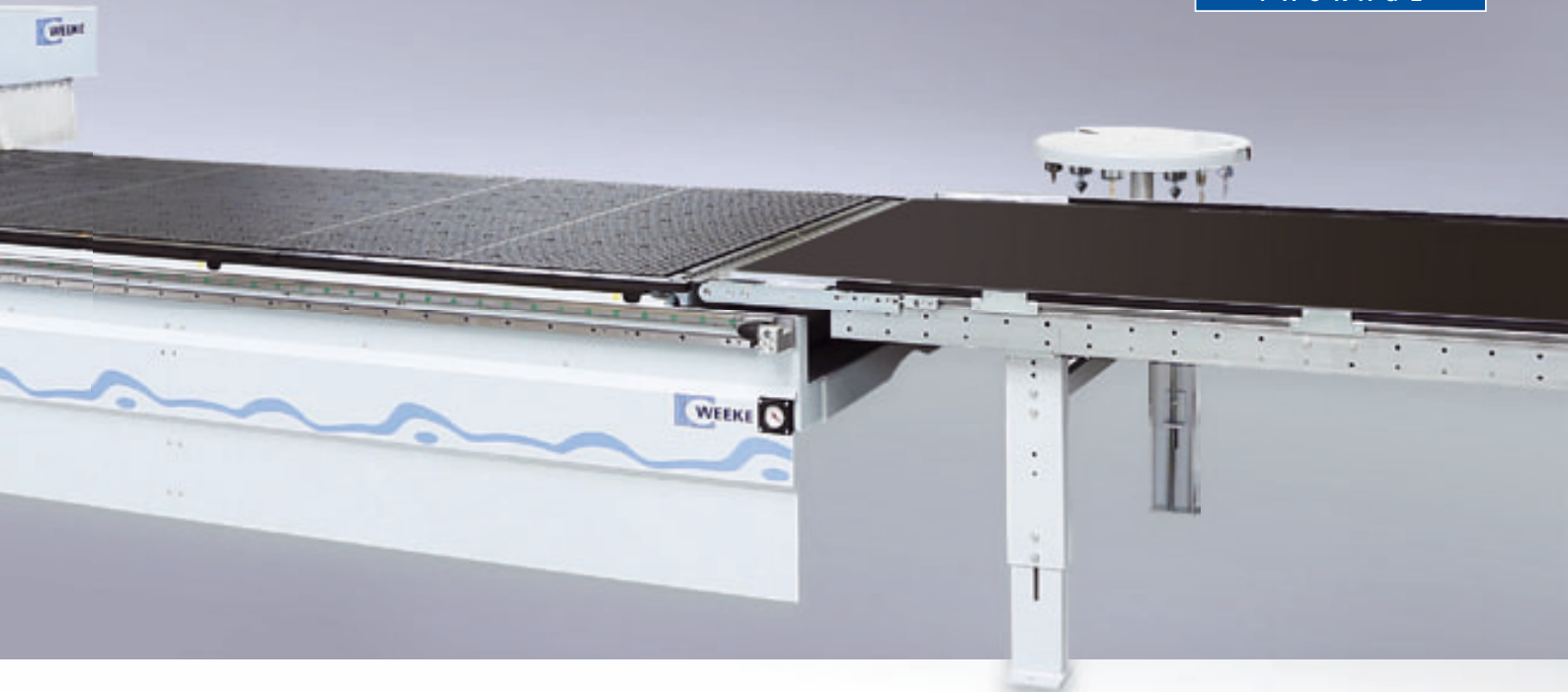

Vacuum arm for positioning
• The vacuum arm takes over a pre-positioned raw board and aligns this against the end of the table in X direction

Lowerable fence guide and program-controlled positioning
• Suitable for safe outfeed of workpieces
• Electr.surveillance of all guides and stops

Push-off device

- Automatic push-off device, mounted to the gantry, for pushing off workpieces and dust extraction for cleaning cover board

Dust extraction channel at the outfeed from below

- For cleaning of the workpieces during feeding out

Transport belt

- A workpiece safety control device is attached at the end of the conveyor belt, this stop function can be deactivated via a foot switch

powerControl with powerTouch

- 21,5" Full-HD multitouch display with wide screen 16:9
- Front USB interface
- Ethernet connection 10/100 Mbit

Handling Concept 2R

Basic Machine
- **Infeed (roller table)**
- **Outfeed**

MATRIX

power Touch

Infeed table
- Frequency-controlled roller table

Transfer rollers
- Intermediary transfer rollers to prevent scratching during the loading process

Vacuum arm for positioning
- The vacuum arm takes over a pre-positioned raw board and aligns this against the end of the table in X direction
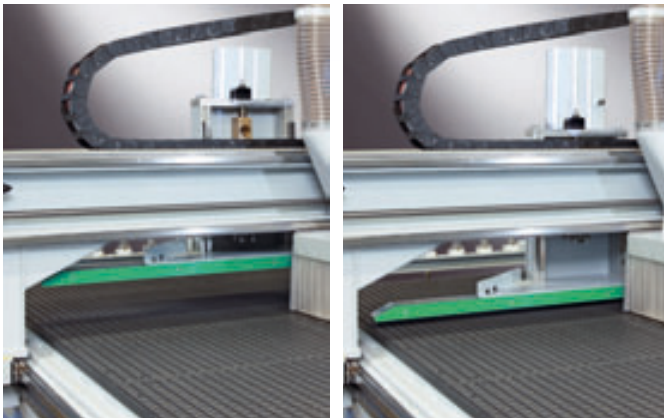

Lowerable fence guide and program-controlled positioning
- Suitable for safe outfeed of workpieces
- Electr.surveillance of all guides and stops

Push-off device

• Automatic push-off device, mounted to the gantry, for pushing off workpieces and dust extraction for cleaning cover board

Dust extraction channel at the outfeed from below

• For cleaning of the workpieces during feeding out

Transport belt

• A workpiece safety control device is attached at the end of the conveyor belt, this stop function can be deactivated via a foot switch
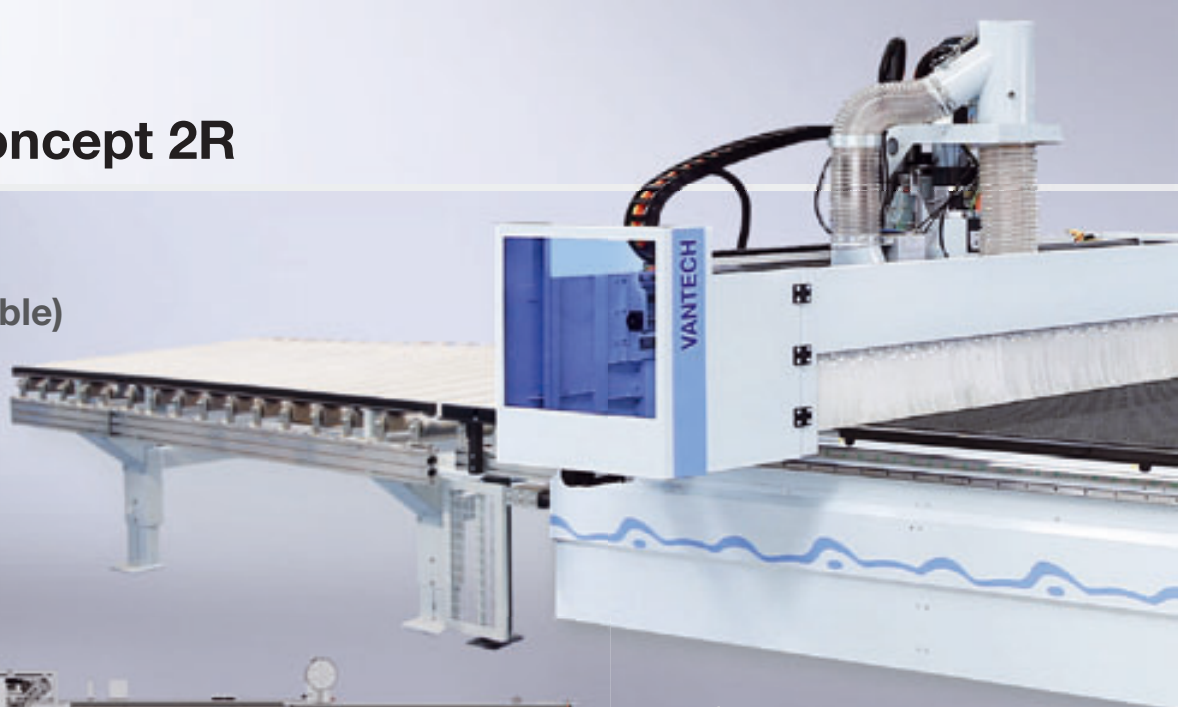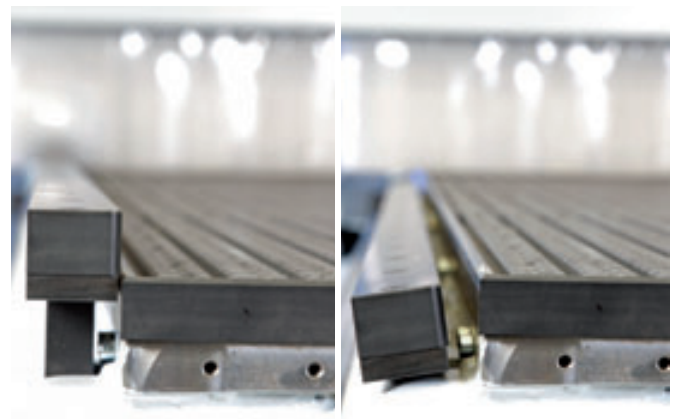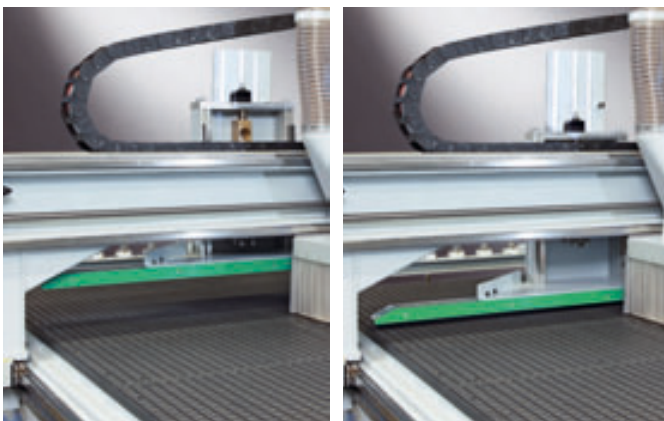
powerControl with powerTouch

• 21,5" Full-HD multitouch display with wide screen 16:9
• Front USB interface
• Ethernet connection 10/100 Mbit

Handling Concept 3

Basic Machine
+ **Infeed (lifting table)**
+ **Outfeed**
+ **Labelling**

Barcode printer / Lifting table

- Automatic Label Printing for precise handling and indentification of the workpieces

2D + 3D

Transfer rollers

- Intermediary transfer rollers to prevent scratching during the loading process

Vacuum arm for positioning

- The vacuum arm takes over a pre-positioned raw board and aligns this against the end of the table in X direction

Lowerable fence guide and program-controlled positioning

- Suitable for safe outfeed of workpieces
- Electr.surveillance of all guides and stops

Push-off device

- Automatic push-off device, mounted to the gantry, for pushing off workpieces and dust extraction for cleaning cover board

Dust extraction channel at the outfeed from below

- For cleaning of the workpieces during feeding out

Transport belt

- A workpiece safety control device is attached at the end of the conveyor belt, this stop function can be deactivated via a foot switch
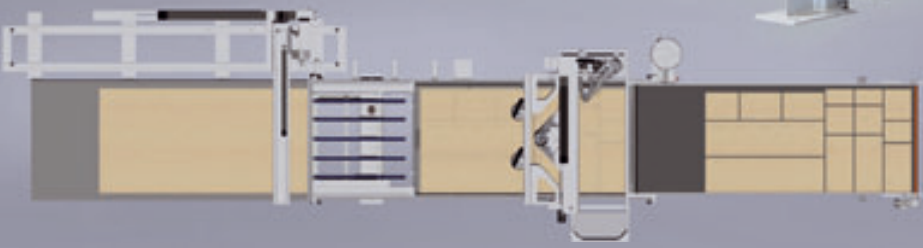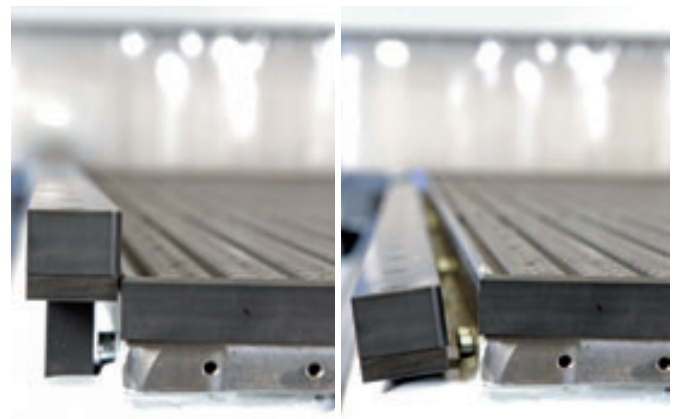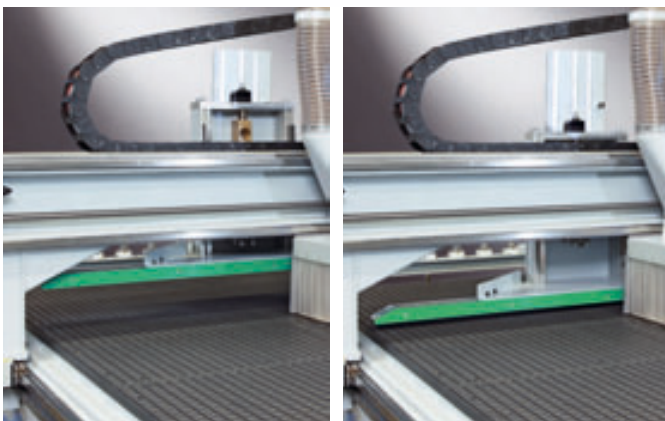
powerControl with powerTouch

- 21,5" Full-HD multitouch display with wide screen 16:9
- Front USB interface
- Ethernet connection 10/100 Mbit

Handling Concept 3R

Basic Machine
+ **Infeed (roller table)**
+ **Outfeed**
+ **Labelling**

MATRIX

power Touch

Barcode printer / Lifting table

- Automatic Label Printing for precise handling and indentification of the workpieces

Transfer rollers

- Intermediary transfer rollers to prevent scratching during the loading process

2D + 3D

Vacuum arm for positioning

- The vacuum arm takes over a pre-positioned raw board and aligns this against the end of the table in X direction

Lowerable fence guide and program-controlled positioning

- Suitable for safe outfeed of workpieces
- Electr.surveillance of all guides and stops

Push-off device

- Automatic push-off device, mounted to the gantry, for pushing off workpieces and dust extraction for cleaning cover board

Dust extraction channel at the outfeed from below

- For cleaning of the workpieces during feeding out

Transport belt

- A workpiece safety control device is attached at the end of the conveyor belt, this stop function can be deactivated via a foot switch
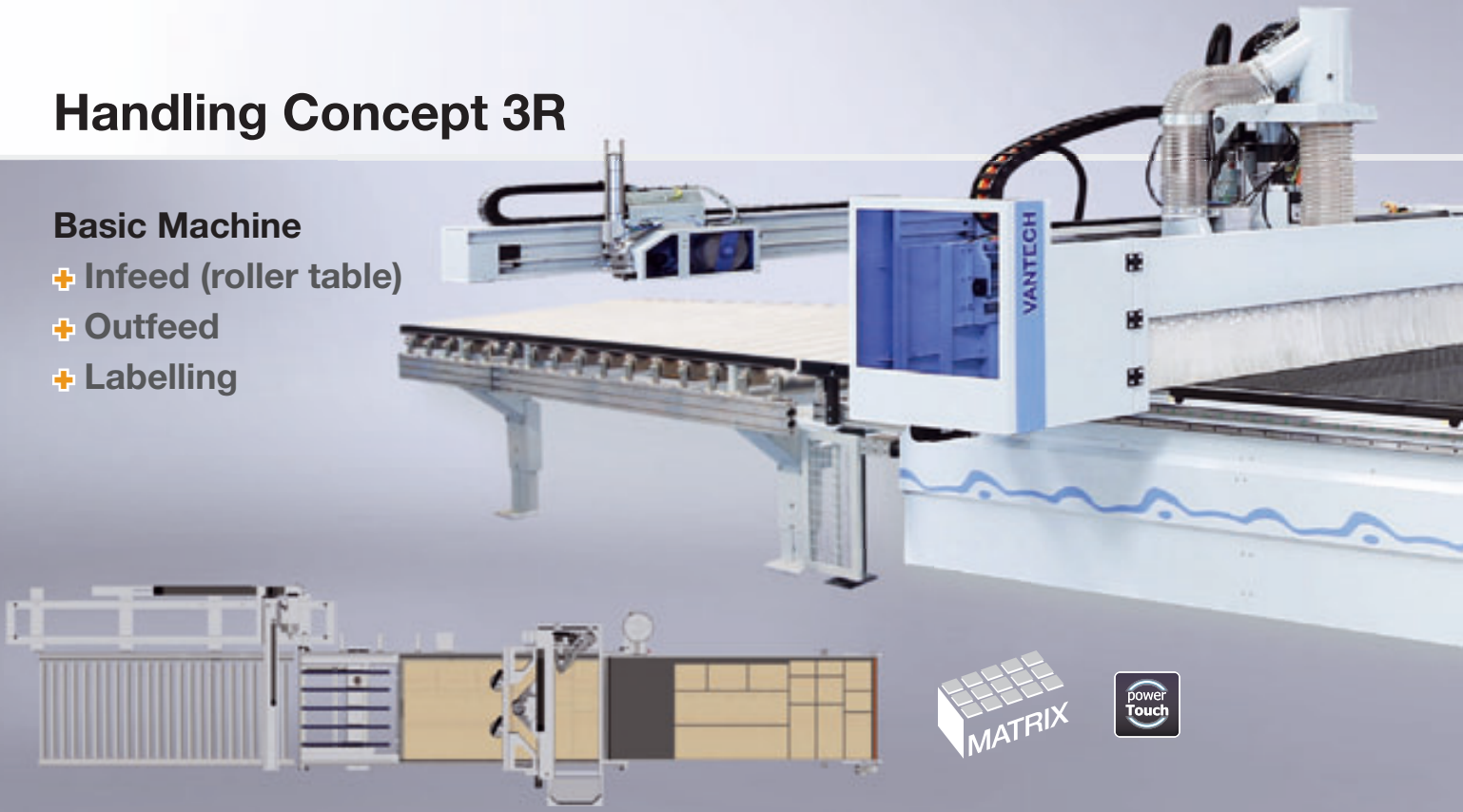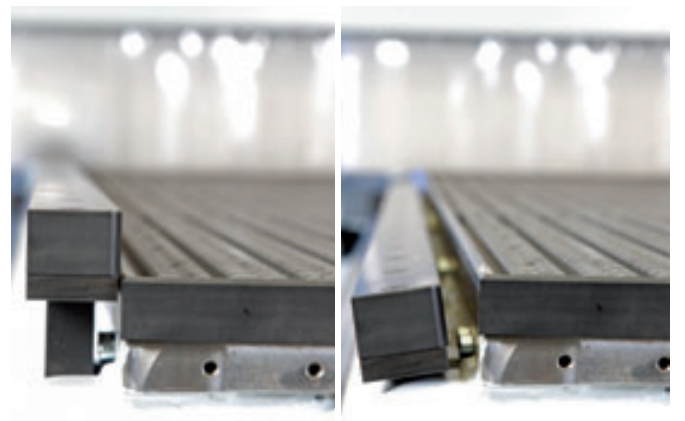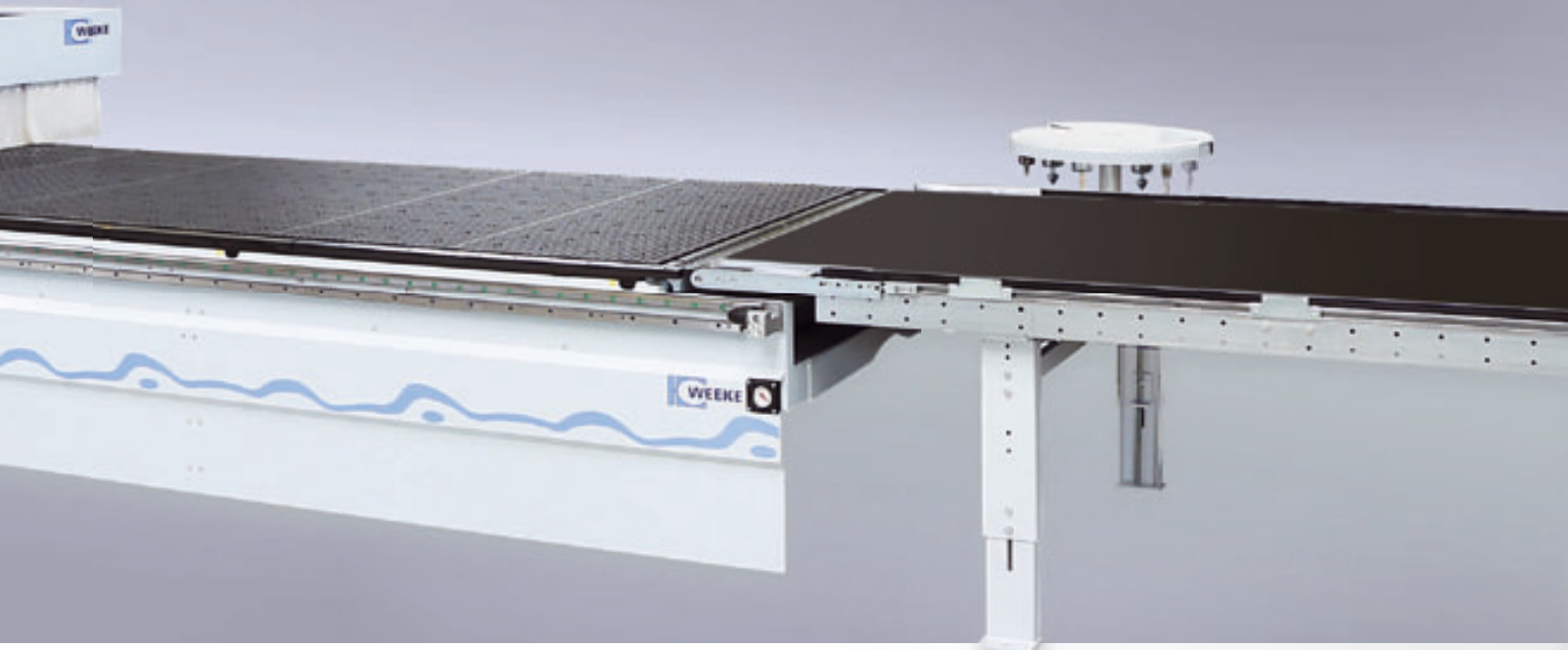
powerControl with powerTouch

- 21,5" Full-HD multitouch display with wide screen 16:9
- Front USB interface
- Ethernet connection 10/100 Mbit

Vantech 480 | 510 | 512 | 612

Nesting machines are utilized across a wide variety of market segments. We see nested based manufacturing strategies employed in the production of cabinetry, doors and drawers, closets and storage, furniture, store fixtures, work surfaces, plastics and composites, non-ferrous metals, as well as aerospace.

The Vantech PRO+ MATRIX Table system is perfectly suited to handle the raw material variance noted by some of today's multi-faceted manufacturers. The solution reads the raw board size of the incoming program and automatically concentrates vacuum pressure to the correct area of the machine, limiting machine setup time. Vacuum zones can also be manually selected at the machine control.

480 Matrix Pro
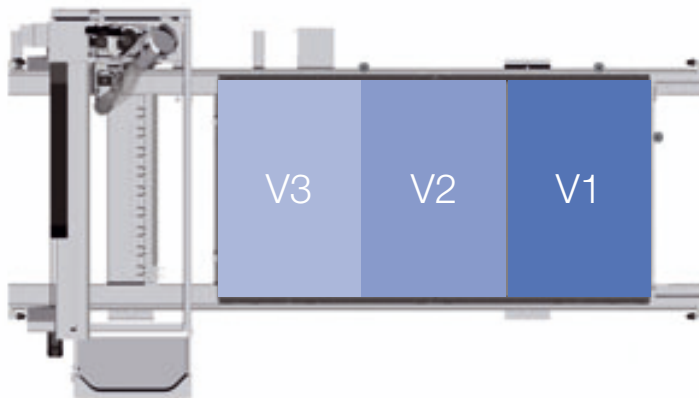
**Matrix-Table PRO for
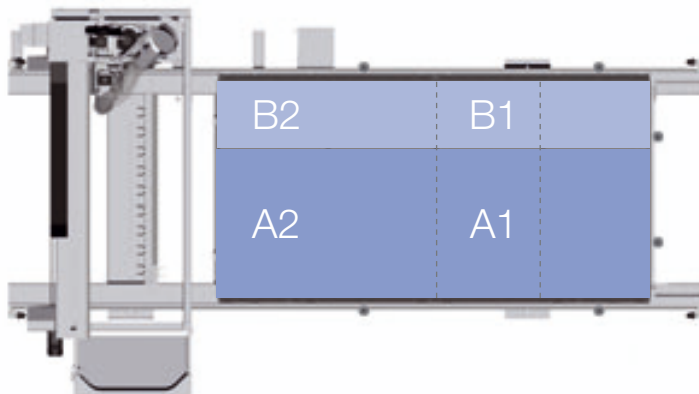Vantech 480 (1250 x 2500 mm)**

3 zones controlled by softkey at the machine control

V1 = 2.6 x 4 ft
V1+V2 = 5.2 x 4 ft
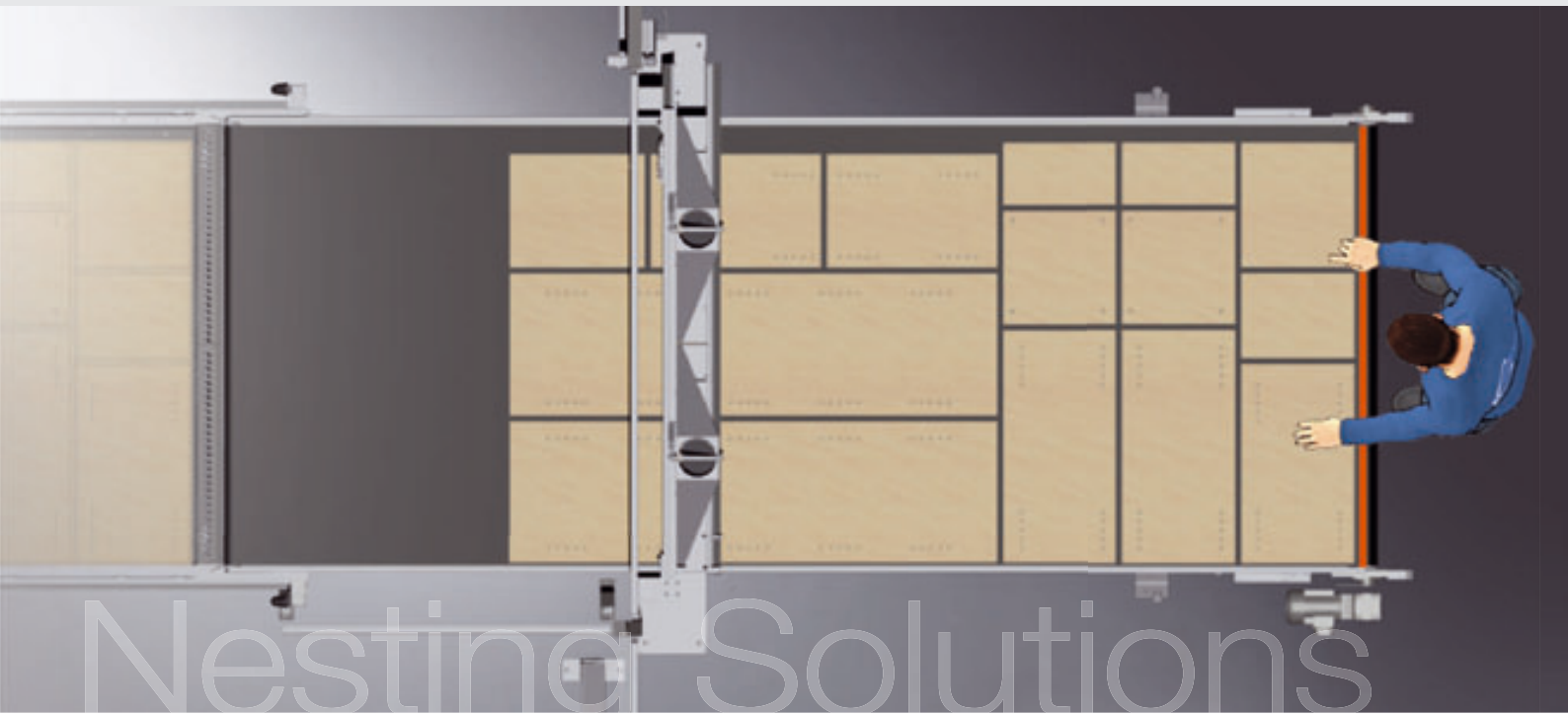**V1+V2+V3** = 8.2 x 4 ft

510 Matrix Pro +

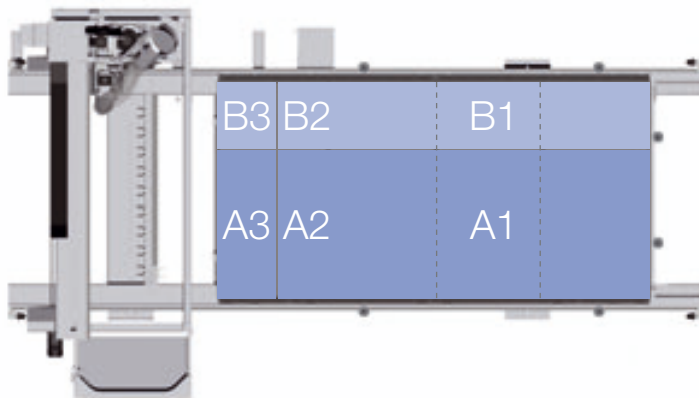**Matrix-Table PRO+ for
Vantech 510 (1550 x 3100 mm)**

8 automatically controlled vacuum fields for boards with dimensions such as:

A1 = 8 x 4 ft
A1+A2 = 10 x 4 ft
A1+B1 = 8 x 5 ft
A1+A2+B1+B2 = 10 x 5 ft

Nesting Solutions

512 — Matrix Pro +

B3	B2	B1
A3	A2	A1

Matrix-Table PRO+ for Vantech 512 (1550 x 3700 mm)

10 automatically controlled vacuum fields for boards with dimensions such as:

A1 =	8 x 4 ft
A1+A2 =	10 x 4 ft
A1+A2+A3 =	12 x 4 ft
A1+B1 =	8 x 5 ft
A1+A2+B1+B2 =	10 x 5 ft
A1+A2+A3+B1+B2+B3 =	12 x 5 ft

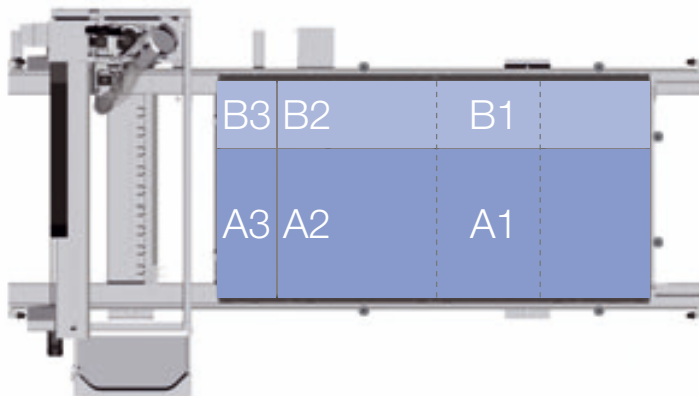## 612 — Matrix Pro +

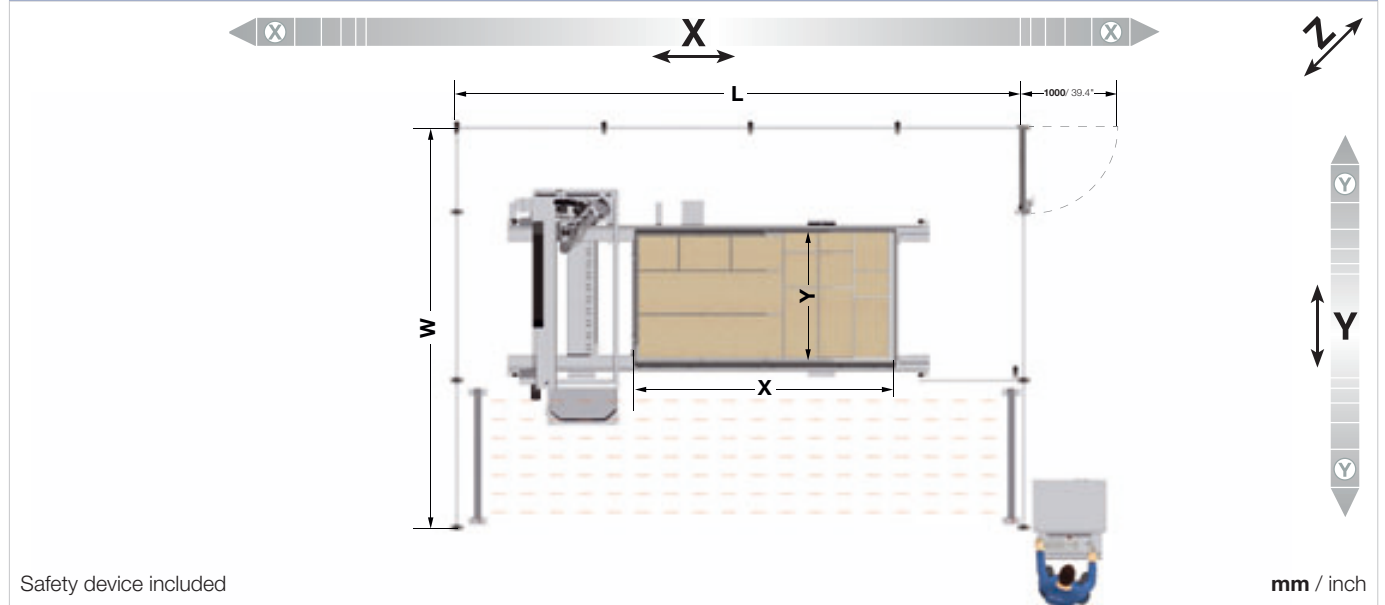| B3	B2	B1
A3	A2	A1

Matrix-Table PRO+ for Vantech 612 (1850 x 3700 mm)

10 automatically controlled vacuum fields for boards with dimensions such as:

A1 =	8 x 4 ft
A1+A2 =	10 x 4 ft
A1+A2+A3 =	12 x 4 ft
A1+B1 =	8 x 6 ft
A1+A2+B1+B2 =	10 x 6 ft
A1+A2+A3+B1+B2+B3 =	12 x 6 ft

Manual and Automatic Concepts

Basic Machine

Safety device included

mm / inch

Handling Concept Outfeed

Safety device included

Handling Concept 1

Infeed to be
provided
by customer
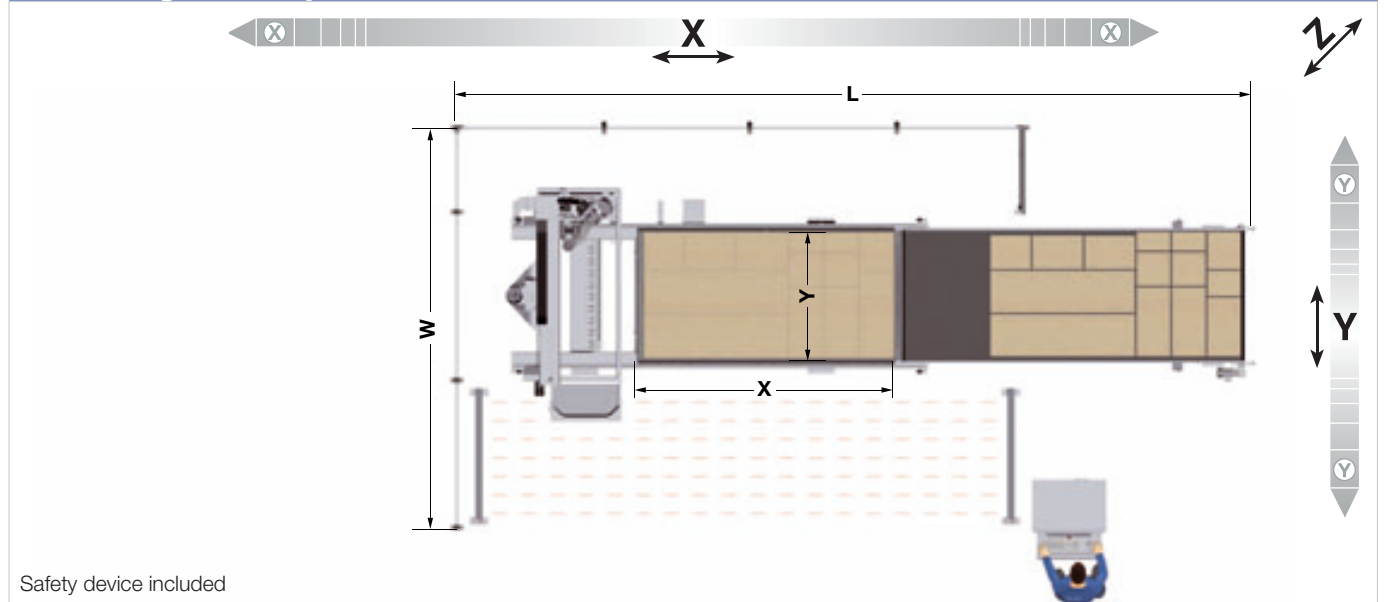
Safety device included
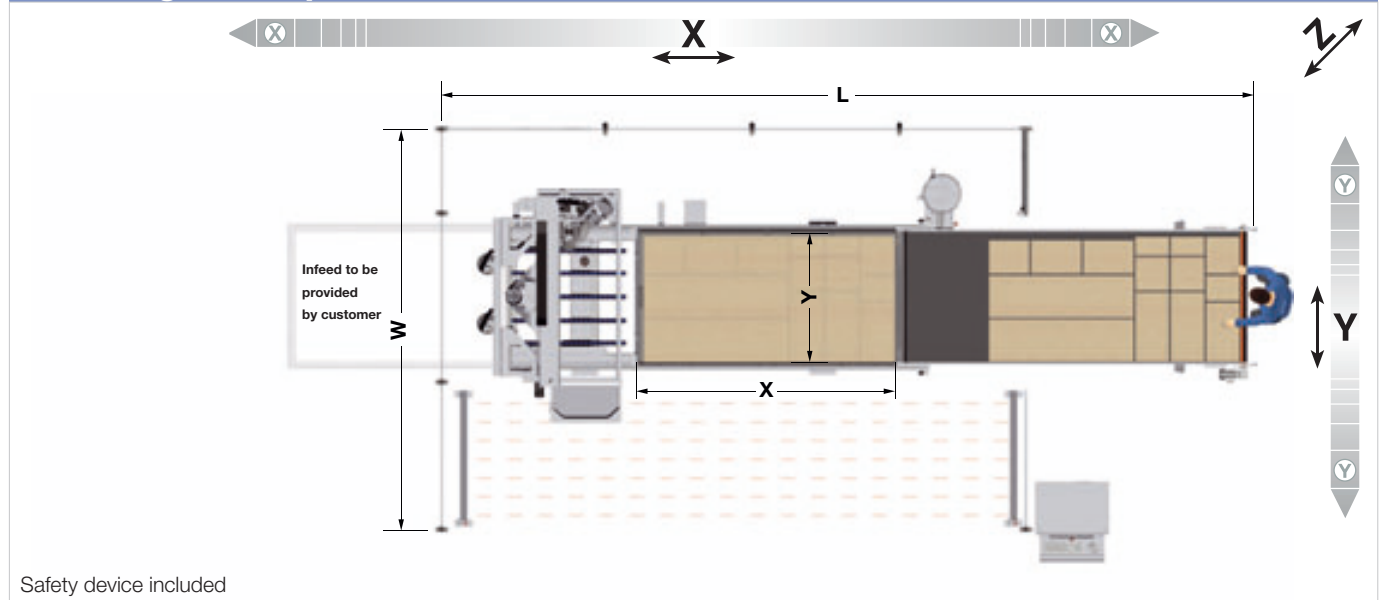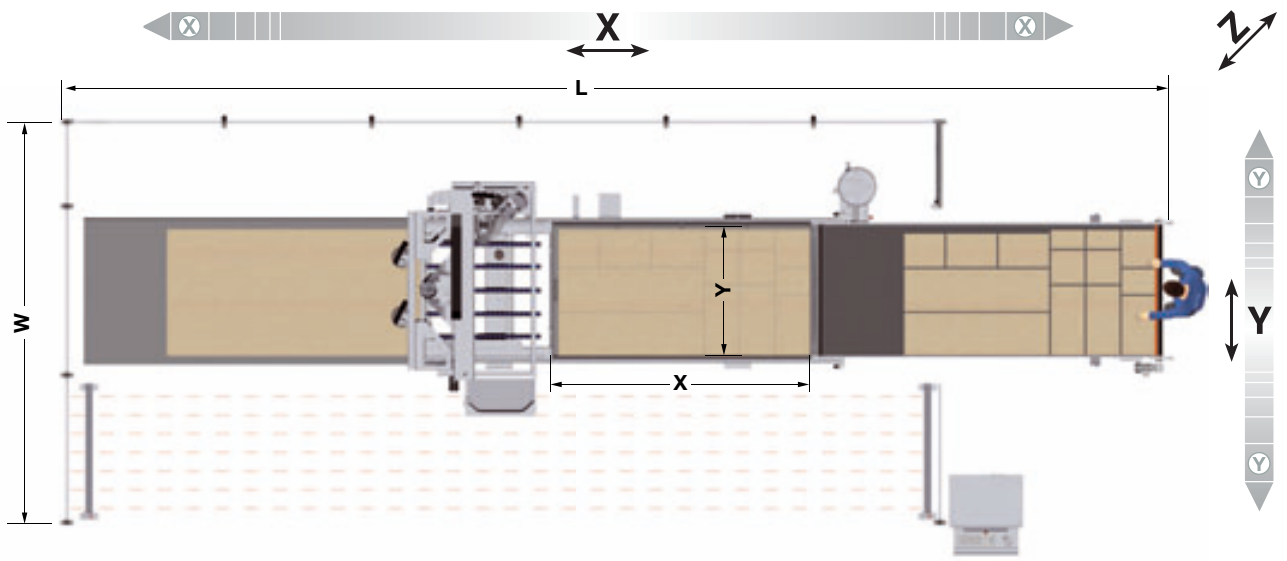
Handling Concept 2

Safety device included

Handling Concept 2R

Safety device included

Handling Concept 3 or 3R

Safety device included

Nesting with storage

Do you have to routinely deal with short lead times for the delivery of your products? Do your people have to manually inventory material stock to determine what needs to be ordered to complete a job? Do your customers change their o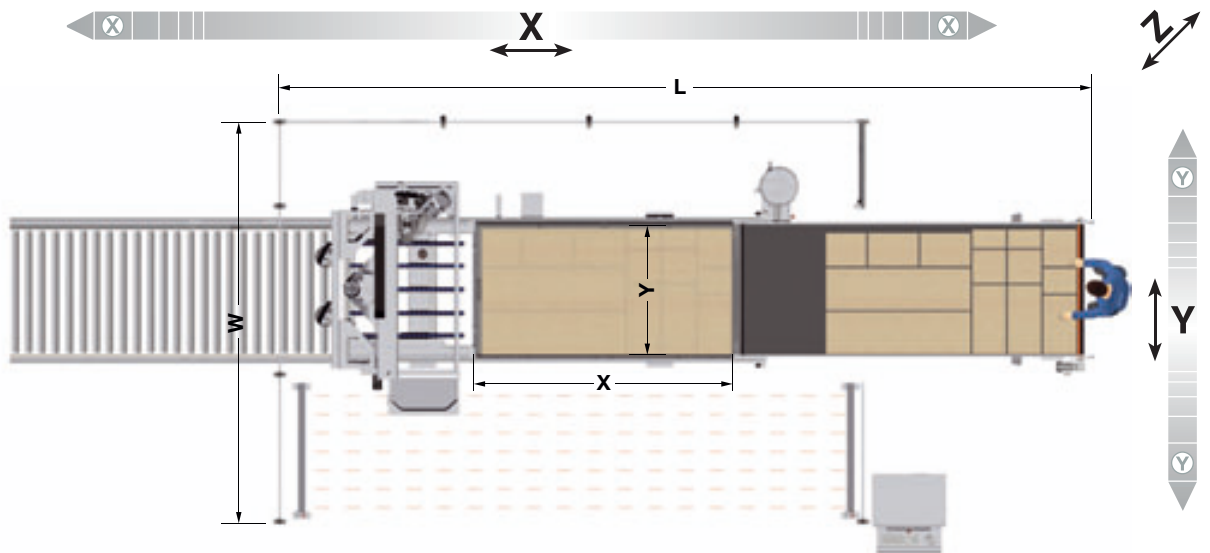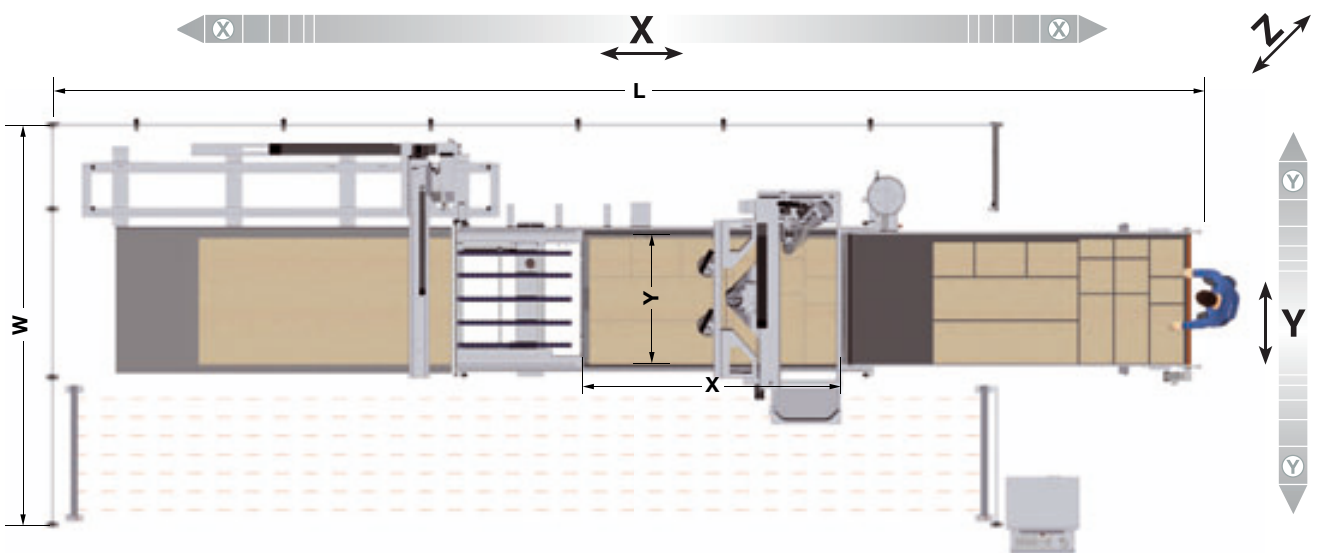rders on short notice, yet expect little delay in the production of the product? The consequences of meeting these demands are far reaching and include lost profitability, production and material utilization inefficiencies, overtime and negative impact upon employee morale.

If this sound familiar to you, its time to learn more about an automated material storage and inventory management solution.

Nesting Solutions
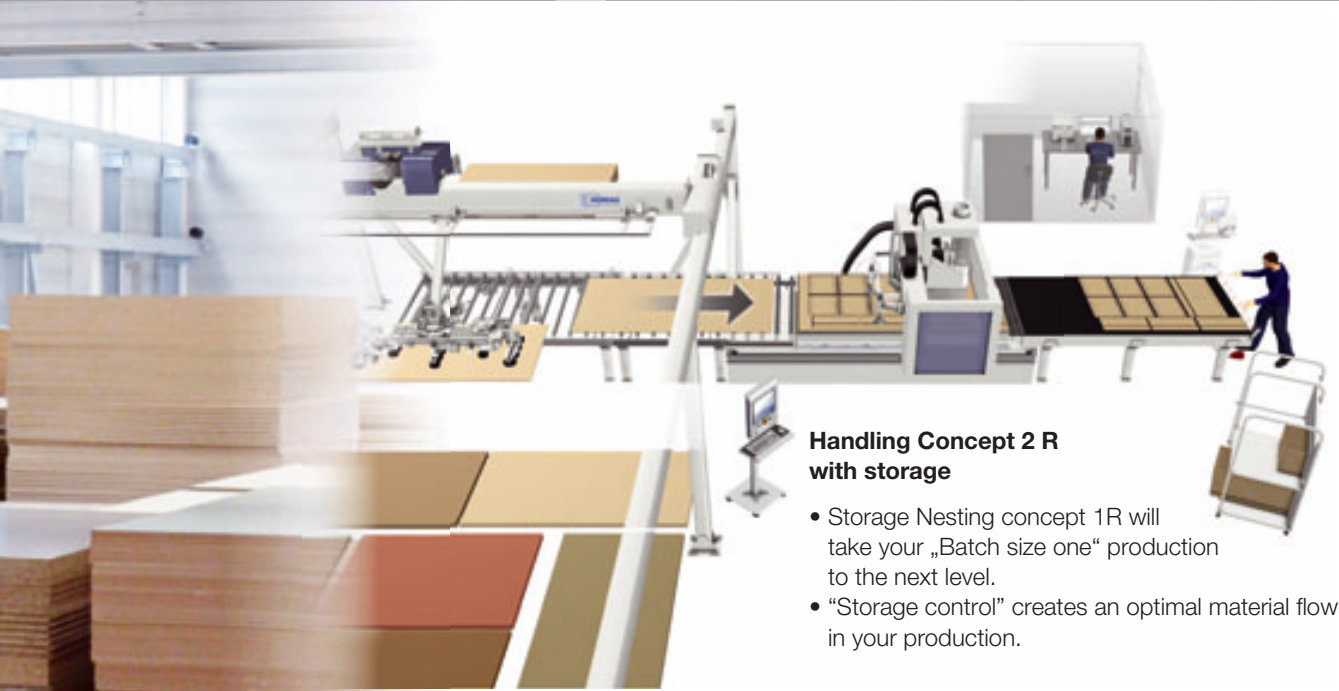
Handling Concept 2 R
with storage

- Storage Nesting concept 1R will take your „Batch size one" production to the next level.
- "Storage control" creates an optimal material flow in your production.
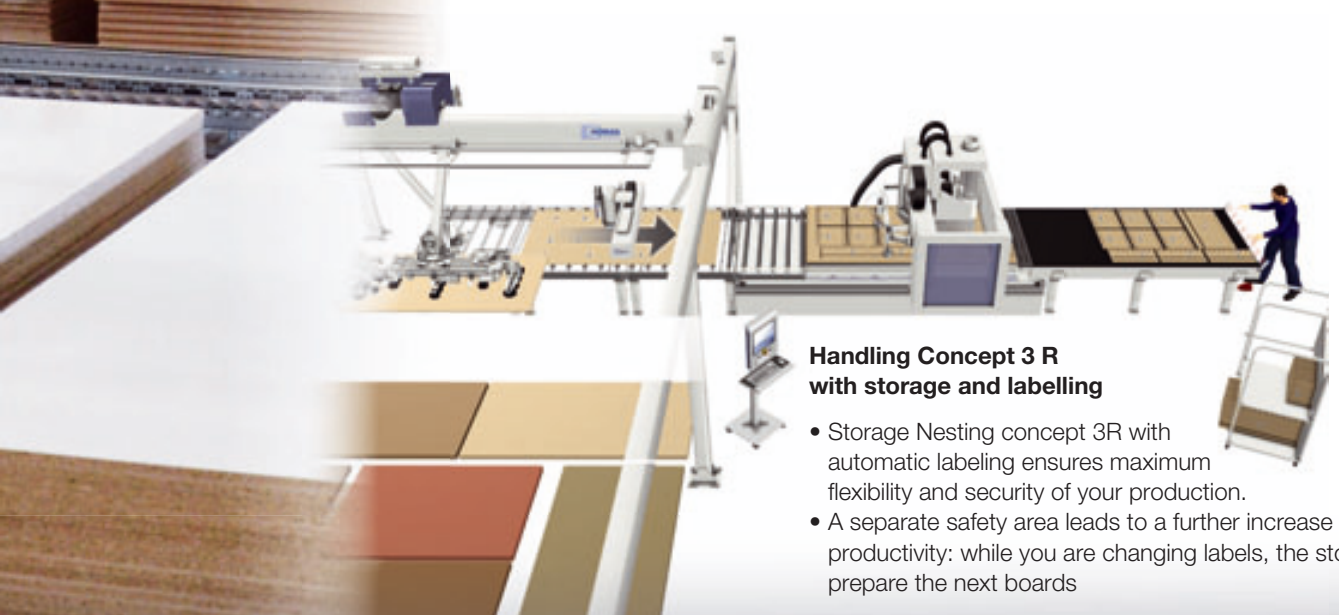
Handling Concept 3 R
with storage and labelling

- Storage Nesting concept 3R with automatic labeling ensures maximum flexibility and security of your production.
- A separate safety area leads to a further increase in your productivity: while you are changing labels, the storage can prepare the next boards

Options

Need a custom configuration? Our options provide opportunities for a
perfect adjustment of your nesting machine to your application.

Vacuum section cups
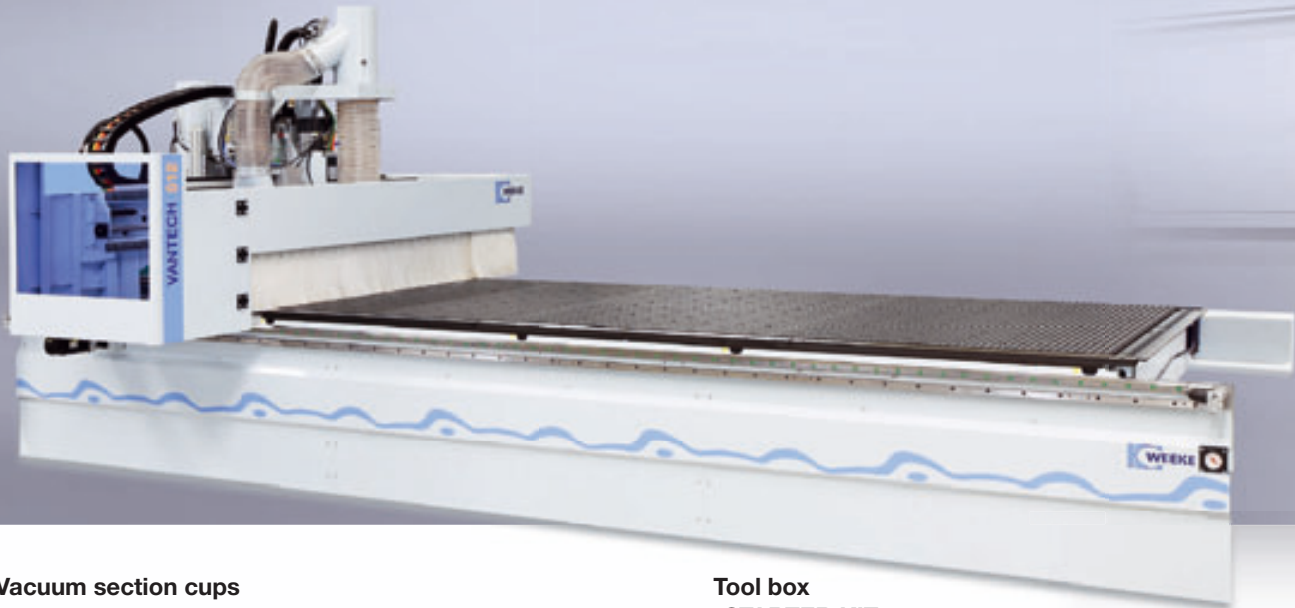
- High flexibility
- Different sizes and types available as option
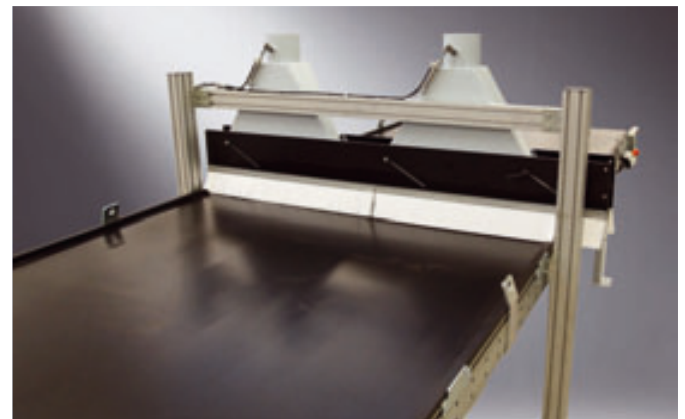
Tool box
»STARTER KIT«

Stop System Basic / Extention stop system at the rear

- Pneumatically lowerable stop cylinders

Dust extraction channel at the outfeed from top

- For cleaning of the workpieces during feeding out

Air cushion

- Air cushion function between raw bord and workpiece
- Positioning of "sensitive materials" with little effort

Push & Pull

- Infeed of the new workpiece while pushing off the processed workpiece and cleaning the dummy board.
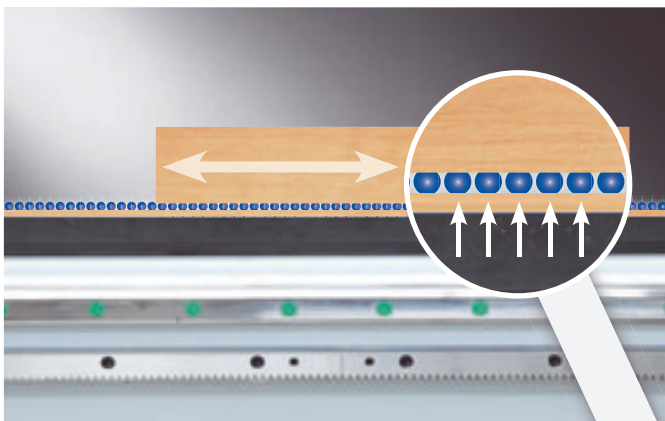
Label Printing Terminal

- PC, flat screen
- Label printer
- Software: Cute Rite Nesting

Air-conditioning

- Air-conditioned switch cabinet

Hardware | Software

With this software package you are »Ready to Race«. You will receive one of the most established CNC-programming systems, the woodWOP software, which has proven itself by more than 30.000 installations worldwide.
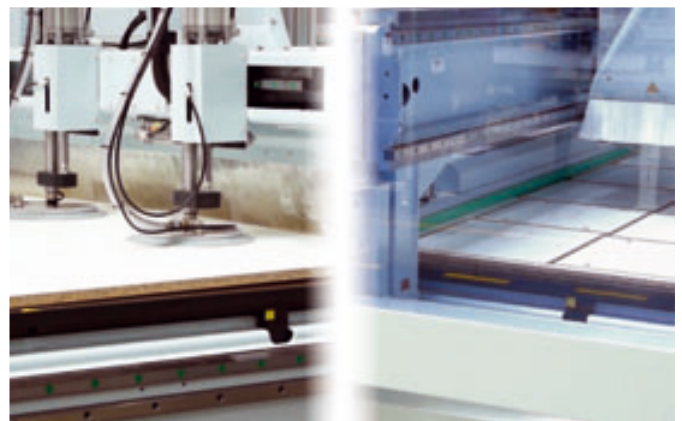
Please use our website resources:

Worldwide largest forum for woodWOP: www.woodWOP-Forum.de

Free Download of woodWOP-components: www.weeke.com ➔ Products ➔ Software

Standard | Software Machine

powerControl with powerTouch

- 21,5" Full-HD multitouch display with wide screen 16:9
- Front USB interface
- Ethernet connection 10/100 Mbit

woodWOP

- Modern software based on Windows©
- More than 30,000 installations world-wide
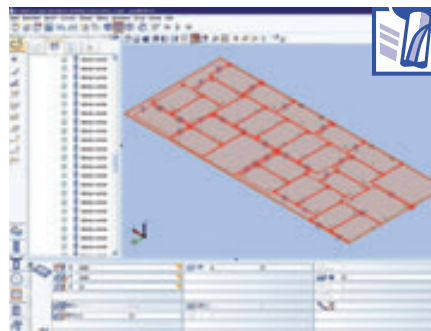
Production list software

- For management and creation of product lists for individual manufacturing.
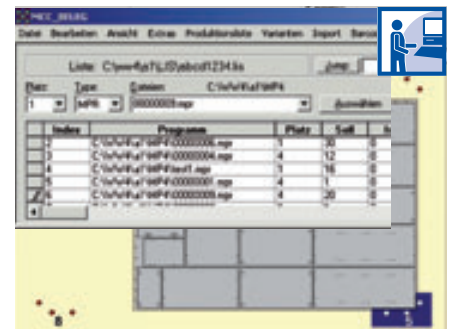
Hand terminal

- Easy control of main machine functions

MCC

- Simple control of main machine functions through soft keys
- Graphical loading

MMR (Machine data recording) Basic

- Machine Data Recording – collecting and evaluating machine states via time meter and event meter

Options | Software Office

woodWOP

- Modern software based on Windows©
- More than 30,000 installations world-wide

woodWOP DXF Basic

- Interface for CAD-Data Import
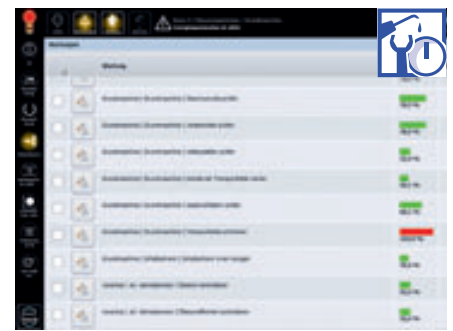- Basis to generate woodWOP programs

3D CNC-Simulator

- Simulates the processing in the order it is stored in the NC-program
- Allows time calculation
- Collision check of the vacuum cups
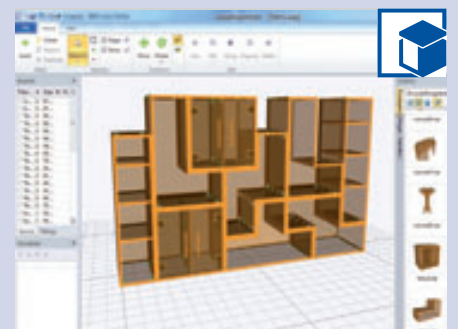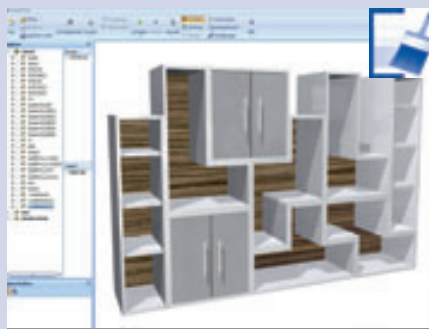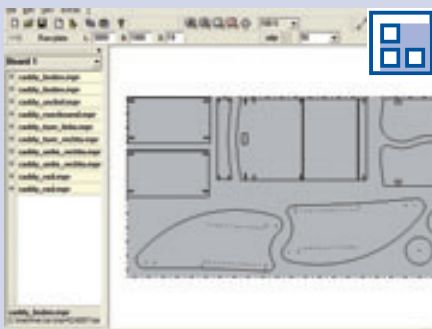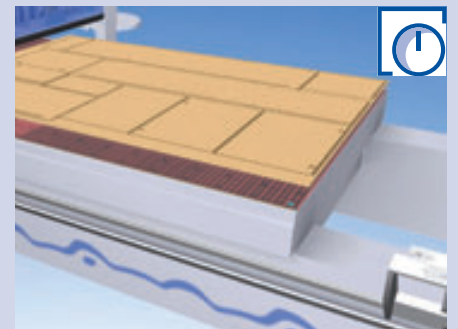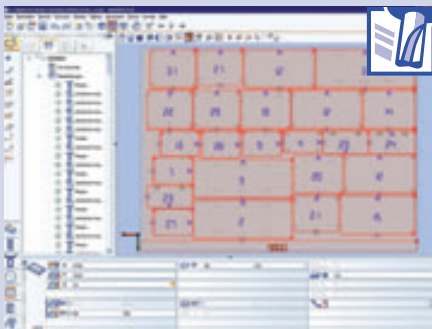
woodNest Basic

- Software for manual Nesting of shaped parts

woodVisio

- Objects generated in woodAssembler or Blum Dynalog can be provided with surface materials
- The objects are displayed in a free-standing position

woodAssembler

- To visualize woodWOP-programs (MPR) in 3D
- Enables the construction of individual workpieces to finished objects

evolutionary

powerTouch

powerTouch implements the HOMAG Group's new operating philosophy: Easy, equal, ergonomic and evolutionary. The innovative touchscreen operating concept unites design and function to create a totally new control generation.

ergonomic
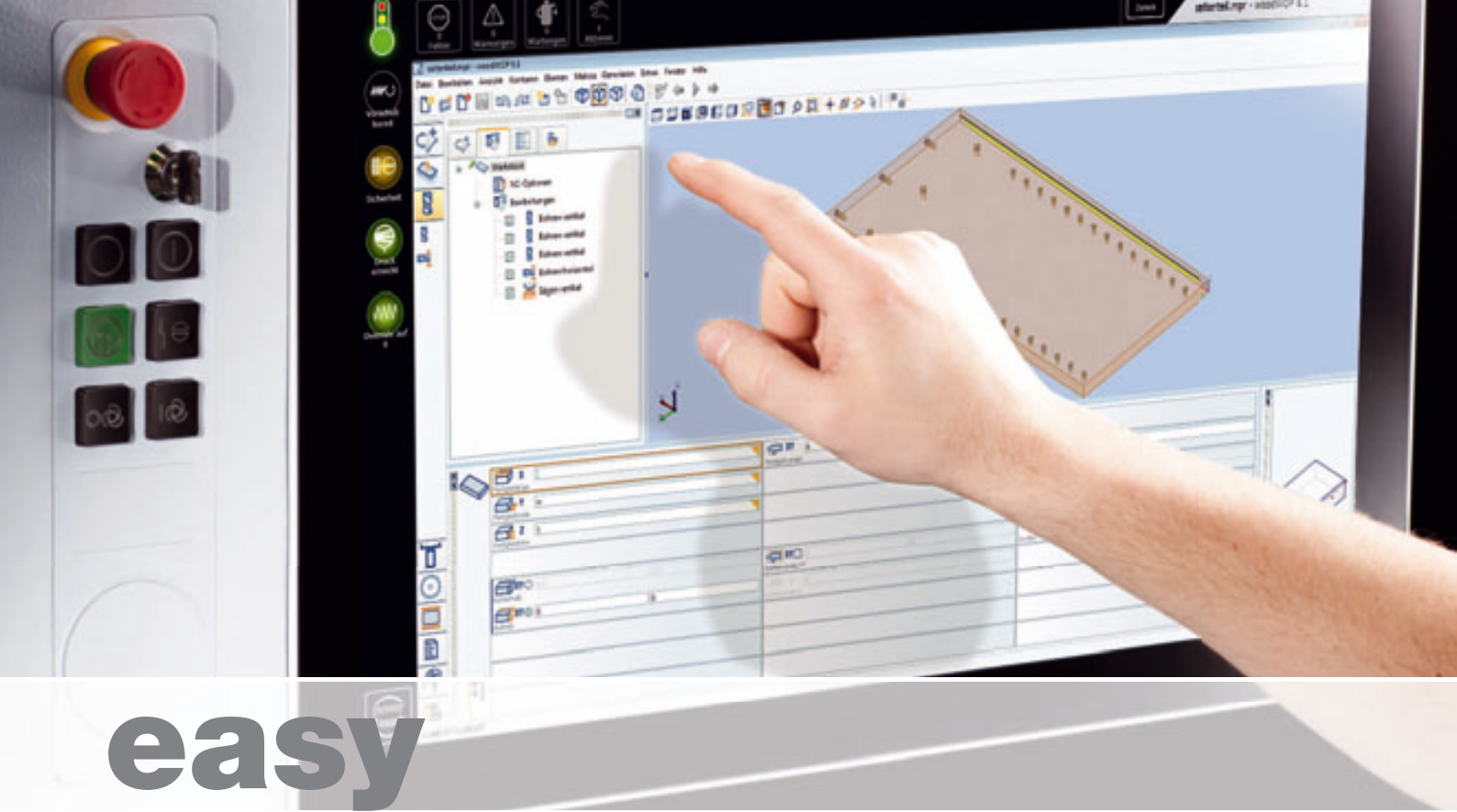
easy

At the focus of this solution is a large multi-touch monitor in widescreen format, which is used to control machine functions by direct touch contact. The entire user interface has been optimized for touch operation and offers an array of help and assistance functions designed to radically simplify the work experience. Standardized control elements and software modules ensure that all HOMAG Group machines can be operated in the same way using powerTouch. They differ only in terms of a few machine-specific details.

This does not only simplify the operation of different machines, but also makes for greater efficiency by significantly reduced time for servicing and training.

equal

Nesting Software

Solutions for nesting of components

Your benefits

- Advanced optimization allows material costs to be reduced and overall processing times to be lowered.
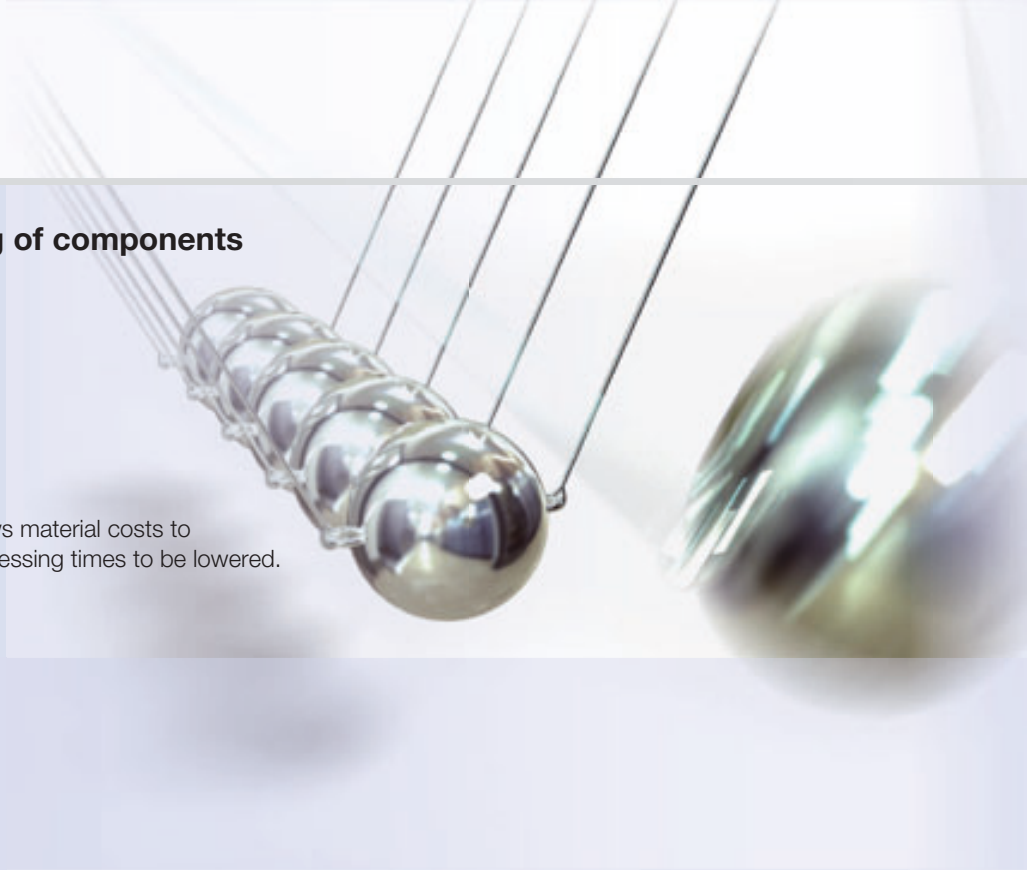
Cut Rite Nesting

Cut Rite, the optimization software of the HOMAG Group, is used for cutting boards on sawing machines as well as nesting machines. The modular structure of the software allows users already controlling their sawing machine via **Cut Rite** to integrate the nesting module without problems.

Highlights

- Board library and calculation of material costs
- Labeling in the office incl. layout editor
- Additional modules can be applied optionally, e. g. for stock management

Cut Rite Nesting
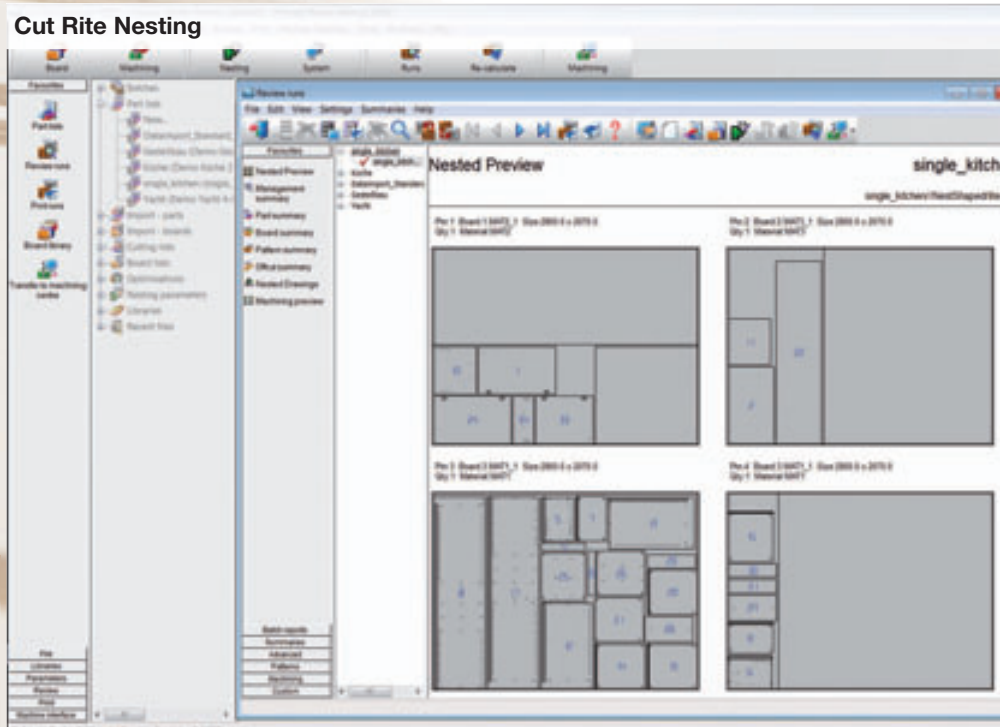
Cut Rite Nesting | Functions

Cut Rite Nesting | Parts list

Cut Rite Nesting | Parts list

- Can be manually created by entering individual woodWOP-files
- Can be imported from other programmes, e.g. excel charts
- Can be optionally edited and processed
- Import of up to 50 woodWOP-variables
- The program optimizes the parts list sorted according to material or any other parameter

Cut Rite Nesting | Label designer

Cut Rite Nesting | Label designer
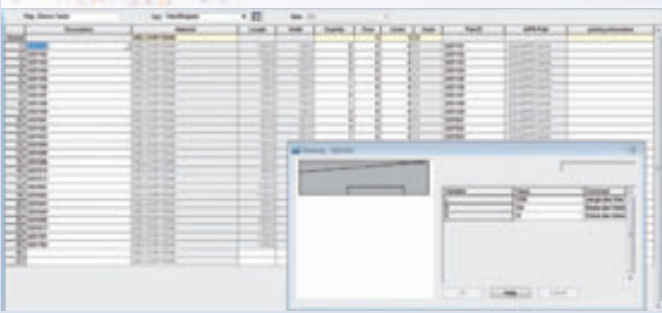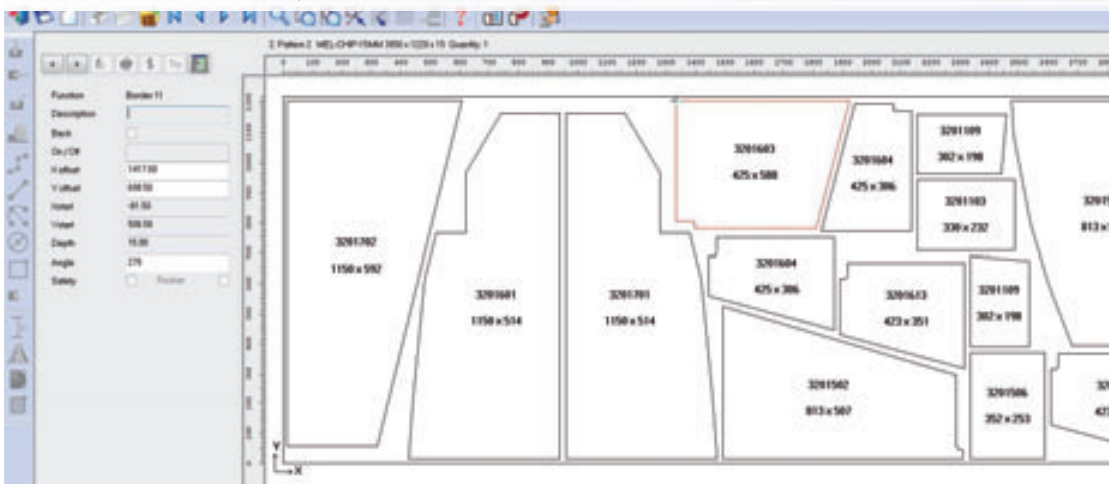
- With the integrated label designer you can create labels at your workplace and print them directly in the office
- This function does not replace the automatic printing function at the machine

Cut Rite Nesting | Editor

Cut Rite Nesting | Editor

As needed, the optimization result can be manually modified, e.g. adding filling parts.

Cut Rite Nesting | Result

Cut Rite Nesting | Result

Cut Rite Nesting | Cutting plan templates
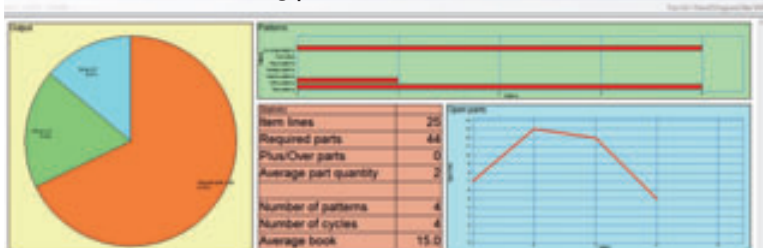
Cut Rite Nesting | Clear structured results

Cut Rite provides a clear and structured presentation of the results of the optimization. For every optimization run several reports are issued which can be individually configured.

Cut Rite Nesting | Cutting plan templates

It is possible to create cutting plan templates, e.g. for furniture fronts, in order to guarantee a continuous texture over several individual parts.

Technical Data

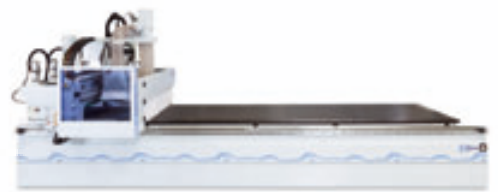|		X	Y	Z
Working field	Vantech 480	2520 / 99.2	1250 / 49.2	100 / 3.9
	Vantech 510	3100 / 122.0	1550 / 61.0	100 / 3.9
	Vantech 512	3700 / 145.7	1550 / 61.0	100 / 3.9
	Vantech 612	3700 / 145.7	1850 / 72.8	100 / 3.9
Travel range	Vantech 480	3710 / 146.1	1660 / 65.4	245 / 9.6
	Vantech 510	4300 / 169.3	1965 / 77.4	245 / 9.6
	Vantech 512	4900 / 193.0	1965 / 77.4	245 / 9.6
	Vantech 612	4900 / 193.0	2257 / 88.9	245 / 9.6 mm / inch

			L	W	
Floor space	**Manual Concepts***				
	Basic Machine	Vantech 480	6580 / 259.1	4420 / 172.0	
		Vantech 510	7080 / 278.7	4880 / 192.1	
		Vantech 512	7580 / 298.4	4880 / 192.1	
		Vantech 612	7580 / 298.4	5130 / 202.0	
	Handling Concept Outfeed	Vantech 480	8100 / 318.9	4420 / 172.0	
		Vantech 510	9800 / 385.8	4880 / 192.1	
		Vantech 512	10290 / 405.1	4880 / 192.1	
		Vantech 612	10290 / 405.1	5130 / 202.0	
	Automatic Concepts*				
	Handling Concept 1	Vantech 480	8320 / 327.6	4420 / 172.0	
		Vantech 510	10050 / 395.7	4880 / 192.1	
		Vantech 512	10540 / 415.0	4880 / 192.1	
		Vantech 612	10540 / 395.7	5130 / 202.0	
	Handling Concept 2	Vantech 480	10300 / 405.5	4420 / 172.0	
		Vantech 510	12550 / 494.1	4880 / 192.1	
		Vantech 512	13790 / 542.9	4880 / 192.1	
		Vantech 612	13790 / 542.9	5130 / 202.0	
	Handling Concept 2R	Vantech 480	11800 / 464.6	4420 / 172.0	
		Vantech 510	13950 / 549.2	4880 / 192.1	
		Vantech 512	14660 / 577.2	4880 / 192.1	
		Vantech 612	14660 / 577.2	5130 / 202.0	
	Handling Concept 3	Vantech 480	11040 / 434.6	4420 / 172.0	
		Vantech 510	13100 / 515.7	4880 / 192.1	
		Vantech 512	14290 / 562.6	4880 / 192.1	
		Vantech 612	14290 / 562.6	5330 / 209.8	
	Handling Concept 3R	Vantech 480	13400 / 527.6	4420 / 172.0	
		Vantech 510	15300 / 602.4	4880 / 192.1	
		Vantech 512	15840 / 623.6	4880 / 192.1	*Subject to technical changes
		Vantech 612	15840 / 623.6	5330 / 209.8	mm / inch

*Subject to technical modifications, misprints and errors.
Pictures may show special equipment.*

Vector speed X/Y - Z-axis	m/min	96 - 25
Compressed air connection	inch	R ½
Compressed air required	bar	7
Dust extraction port	mm	Ø 200*
Dust extraction volume	m³/h	min. 3170**
Electrical power – total connection load	kW	27.5**
		** Basic Machine
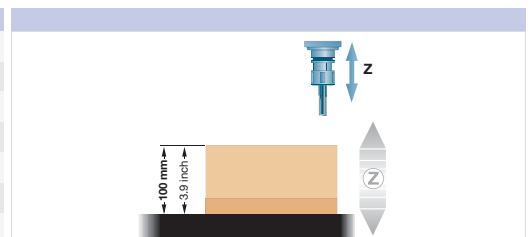
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