Roba-Tech

Surface sanding machine

Brush belt for a gentle surface sanding in all areas

Double brush aggregate at the run out of the machine

Simple and clear operating comfort

Roba-Tech
... operation areas

The patented **Roba-Tech** principle is used for the sanding of flat and profile surfaced workpieces.

The rotational brush belt sanding system for optimal processing in the field of:

- *intermediate lacquer sanding*
- *wood fine sanding*
- *MDF – sanding*
- *metal deburring*

Due to its innovative sanding method the **Roba-Tech** offers for all these areas optimal prerequisites for the best surface quality.

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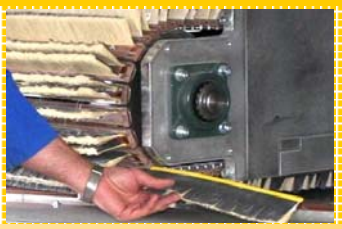
The **Roba-Tech** has three programmable sanding options: Rotation-, Oscillation- and belt sanding function



The sanding belt consists of easily interchangeable sanding brush segments

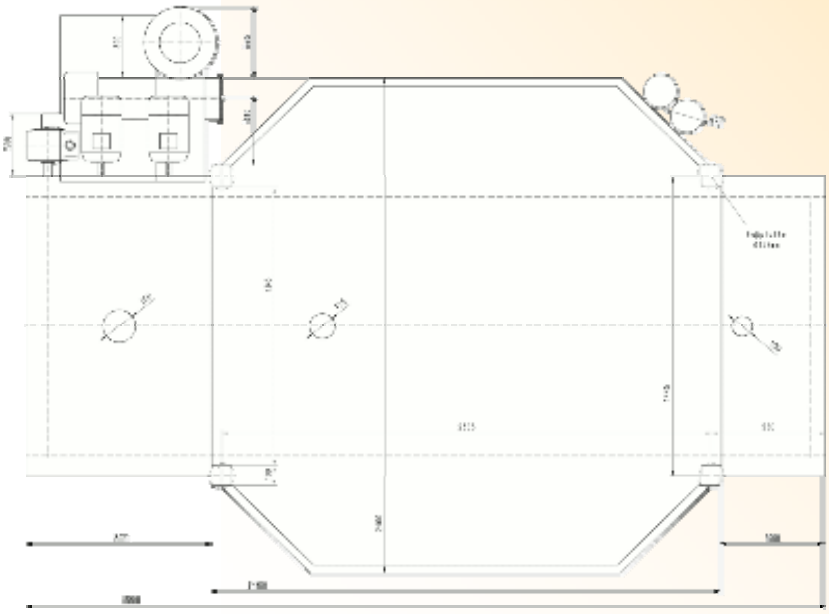
Standard configuration

Machine data:

	Roba Tech 1000/2	Roba Tech 1300/2	Roba Tech 1400/2
Machine lenght:	3860 mm	3860 mm	4025 mm
Machine width:	2400 mm	2400 mm	2755 mm
Machine height:	2000 mm	2000 mm	2000 mm
Working width:	1000 mm	1300 mm	1400 mm
Electrical power:	21 KW	21 KW	24 KW
Voltage:	230/400V 50 HZ 3 PH/N		
PLC control system:	Siemens S7		
Control element:	Siemens OP 7		
Electrical cabinet:	L=1200mm H=900mm D=400mm		
Extraction hood:	3 x 160 mm + 1 x 100 mm + 1 x 125 mm		
Extraction power:	8000m3/h with 30 m/sec. air velocity		

(Technical details are subject to change)

Special constructions on request



Roba Tech 1300/2

Roba-Tech
... sanding method

The patented **Roba-Tech** principle is essentially different to all known sanding systems. The sanding belt of the **Roba-Tech** is equipped with interchangeable brush segments, covers the work piece during the complete process period steadily and complete. This increases the sanding effectiveness considerably.

The **Roba-Tech** is equipped with three different sanding options:

Rotation function:
The sanding belt rotates with free programmable sanding belt- and rotation velocities above the workpiece.

Oscillation function:
The sanding belt oscillates with free programmable parameters above the work piece. The parameters are set in a way that a full 360° rotation of the belt is guaranteed, while pieces go through the machine.

Sanding belt function:
The sanding belt works without movement like a wide belt sander.

The rotation-, the sanding belt- and the feed speeds are free programmable at the PLC control panel.
The individual setting of the machine makes it possible to adjust all needed parameters to customer demands. As an example it may be necessary to sand a massive work pieces in a determined zone more demanding or more gentle.

In this way the operator is able to program and save up to 99 different options.

An extremely capable sanding system requires also an effective work piece transport system. Therefore a new vacuum transport device was developed for the **Roba-Tech**. This is able to hold all conceivable parts economically.
An ingenious channel system in connection with the high performance ventilator and the air repatriation system guarantees an unproblematic use of the machine.
The feed belt is absolutely maintenance free.

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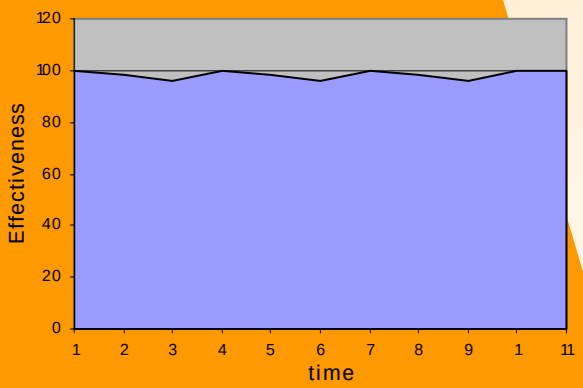
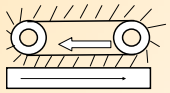
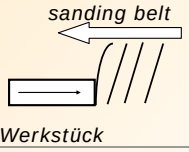
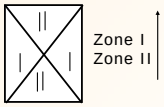
Roba-Tech is assessed many times, even in three shift operation.

We save your quality and productivity.



Comparison of the

Roba Tech	
- one rotational belt with two rotational brushes	1. Basis
- approx. 1,7 m2 - 88 sanding segments 	1.1 operation area „in tough“ with the work piece
- rotating	1.2 head setting
- low	1.3 Head rotation velocity
- lead-phase-angle of about 20° relative to feed belt - positive angle relative to work piece  *Werkstück*	1.4 Brush strip angle
- sanding operations: Rotation-, oscillation-, belt sanding function - Rotation speeds - sanding belt speeds - free programmable rotation angles: two sanding zones to be differently influenced by PLC settings - vacuum power - feed speeds - strip settings - strip change interval: only 10 % during an interval  *Work piece seen from above*	2. Parameters influencable
- high effectivity - high feed speed - gentle treatment on the edges - best sanding results in the grooves - strips go deep into the grooves - good sanding results at the edges - avoids totally or partly denibbed parts - long lasting abrasives - low temperatures - perfect finish - fully deburred in all areas - always constant effectiveness (see graphic left)	3. Results

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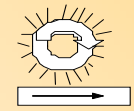
Additional cleaning brush
for the vacuum transport belt

Special vacuum transport belt
for save work piece transport

sanding process

Conventional

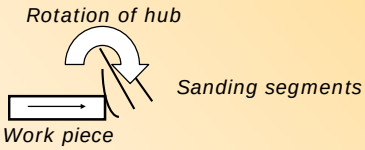
- two or four rotational brushes
  (each brush)
- 0,04 m2
- 3 sanding segments



- straight or inclined

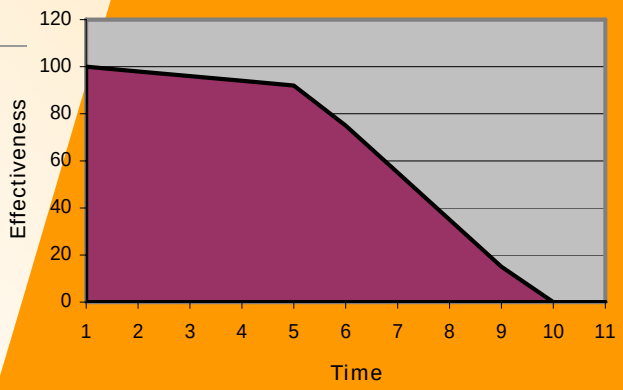
- high

- perpendicular relative to feed belt
- negative angle relative to work piece
  (compare sketch)



- rotation speed
- feed speed
- strip settings
- strip change interval

- low effectiveness
- low feed speed
- hard treatment on the edges
- bad sanding results in the grooves
- strips „jump“ over the grooves
- bad sanding results at the edges
- totally or partly denibbed work pieces
- high consumption of abrasives
- high sanding temperatures
- „wavy“ optics of the surface
- pieces are partly not sanded
- no solution for problematic work pieces
- effectiveness is only in a short time interval constant
  (see graphic on the right)



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The Roba Tech sanding principle

The main idea of the Roba Tech principle is to avoid the main disadvantage of all today known rotation brush sanding machines: Those who work normally with sanding rolls and a diameter of about 350 mm are only in a very small area in touch with the workpiece, about 40 mm.

Only in the vertex of the radius of the tool a sanding process is possible. To compensate the very small sanding area normal sanding systems have to increase their rotation speed to a high degree. Only this way they have a chance to get nearly the same effectiveness. But this results a “hard touch” of the sanding paper which leads to an aggressive behavior on the edges, high temperatures and wavy optic of the material. Hurt edges and totally denibbed surfaces are often the result.

The innovative and patented Roba Tech is equipped with a totally new developed sanding belt containing 246 sanding strips and provides a sanding area of approx. 1600 x 1300 mm in touch with the workpiece and more than 300 meters of sanding material on the aggregates. This is unique on the market of brush sanding machines.

A 360 ° rotation of the sanding aggregate makes it possible to reach all edges and corners of a workpiece.

Due to the by this means enlarged sanding effectiveness the machine is able to get best cutting results by lowest rotation speeds.

As a result of this, low movement speeds let the sanding strips slide gently into the milled grooves and sand them every effectively.

Many by SPS adjustable sanding options help the operator to set the machine to his special sanding requirements.

The advantages of the Roba Tech principle summarized:

1. Large abrasives quantities make low movement speeds possible, at the same effectiveness.
2. The rotational sanding head ensures a consistent sanding in all workpiece areas.
3. A large sanding area covers the workpiece totally while proceeding.
4. Free PLC programmable sanding parameter to optimize results.
5. A perfected vacuum system guarantees that even drawers can be feeded surely.
6. A "pulling" sanding avoids wavy surfaces and penetrates deeply into the milled grooves.
7. The low rotational speed guarantees long abrasive lifespan because the sanding segments do not hit the work piece edges that hard.
8. Abrasive configuration is freely eligible from the MB Flex system.

Example of application

Roba Tech integrated into a door production line

Roba Tech integrated into a cabinet door membrane press production line

Roba Tech integrated into a furniture production spraying line

The Roba Tech sanding belt contains 174 abrasive segments