

Open House, Köngen  
June, 18/19/20 2009

## Machines Processes Applications

### Open House, Köngen

On June 18/19 and 20, we would like to invite You to our plant in Köngen to take a close look at our new machine concepts.

We are looking forward to Your visit!

### Trade Fair Dates

Mach Tec Budapest  
May 19-22

Mach-Tec Posen  
June, 16-19

MSV Brünn  
September, 14-18

EMO Milan  
October, 5-10

EUROMOLD Frankfurt  
December, 2-5

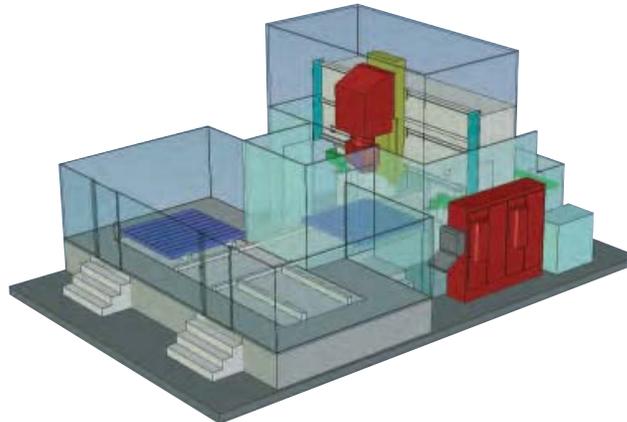
### Content

#### The flexible matec machine design

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**matec machines**  
**100 % designed to suit**  
**customer's needs and**  
**100 % made in Germany**

### New machine concept with pallet changer



### Gantry machines matec-30 PP/matec 40 PP

The gantry machines matec-30 PP and matec-40 PP (Taper SK40 / HSK 63A) are designed for single-part and series production of large and heavy workpieces for tool and mould making, mechanical engineering, and structural-steel engineering. They fulfill highest quality demands. The overdimensioned gantry construction warrants minor deformation of the machine and therefore highest contour constancy and surface quality of the work part.

The gantry construction guarantees good accessibility from all sides in constrained space. The application of either a swivel head ( $\pm 90^\circ$ ) or a 2-axis CNC motor spindle milling head permits multilateral machining. A rich variety of spindle speed and spindle power options for all materials is available. Breaking news concerning matec-30 PP and matec-40 PP is the pallet changer, which functions as a machine table. The pallet changer is moving in the X-axis.

### Specifications

Machine table as pallet changer	2000 x 2000 mm [other dimensions on request]
Working area Y	2500 (3000/3500) mm
Working area Z	vertical 1200 / horizontal 1300 mm
Distance spindle nose/table	vertical 0-1200 / horizontal 150-1450 mm
Gantry clearance in Z direction	30 PP 1150 mm / 40 PP 900 mm
Machine table width	1600 (2100/2600) mm
Speed 30 PP	9000 (12000/15000/18000/24000/42000) rpm
Speed 40 PP	6000 rpm
Power	30 PP 16 (30) kW / 40 PP 26 kW - 40% DC
Torque, max.	30 PP 100 (190) Nm / 40 PP 340 Nm - 40% DC
Rapid feed	30 m/min
Tool magazine	30 PP 36 (48/72/96) pcs / 40 PP 100/200 pcs
Tool diameter, max.	30 PP 70 (130) / 104(200) mm / 40 PP 104(200) mm
Tool length, max.	30 PP 340 mm / 40 PP 460 mm
Tool weight	30 PP 3 (10) kg / 40 PP 25 kg

Subject to technical changes



Erich Unger, General Manager  
matec Maschinenbau GmbH

### EDITORIAL

Dear readers, customers and friends of matec machine tool company,

with pleasure we present to you the first edition of our **matec News**, which will inform you about recent developments in matec machine technology.

The coming months will be very demanding. One big task will be, to compete on the global markets with companies whose course of action consists of copying innovations of highly industrialised countries and congesting the market with cheap, low-quality machines.

matec is able to meet these challenges with its flexible, innovative machine concepts and a quality which results last but not least from our motto "Made in Germany"

See for yourself how a matec machine comes to life - from the first technical inquiry of a customer to the delivered machine. Experience what we mean by "consequently customer-oriented" namely that every customer will get the machine that he wants and needs.

Our customer orientation brings advantages for you in many ways: maximum productivity, high precision und cost reduction.

Read all about interesting machine concepts for special applications and processes. Learn about customers, who are already using the matec "tailor-made" system for their benefit - in short: get to know matec.

Sincerely

Erich Unger





matec-30 SH



matec-30 S



### In detail:

**matec-30 SG** Ideal for large work parts in series

### Standard specifications

- Swivel table 180°
- Table load capacity max. 300 kg per working area
- Full cladding of the machining area incl. electrically protected sliding doors
- Digital main spindle drive, motor spindle, oriented spindle stop
- Spindle bearing Ø 80 mm, tool clamping 12.000 N
- Linear guides in all axes
- Feed rate/rapid traverse speed with digital AC servo motors in all axes
- Tool changer SK 40 for tools DIN 69871
- Tool magazine traveling in X-axis (protectively installed in the traveling column)
- Tool position coding variable
- Automatic lag compensation for high speed milling of contours
- Chip conveyor
- Controls:**  
Rexroth IndraMotion MTX  
Heidenhain iTNC 530  
Siemens 840D



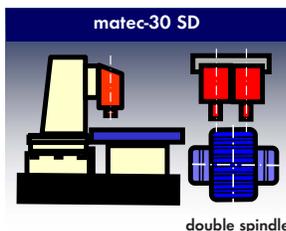
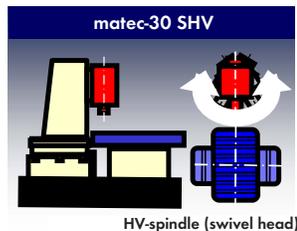
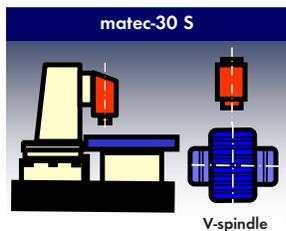
### Special features

- Long traverse paths in all axes
- Large table clamping area
- Multiple clamping possible

The machining center matec-30 S is a production machine for series manufacturing of small and medium-sized work parts. The 180° swivel table allows parallel loading and unloading in the main time and thus ensures high productivity.

The larger version of matec-30 S, matec-30 SG contains a swivel table, 1300 x 1100 mm. Thus, it is perfect for machining of voluminous parts - the traverse path in the Z-axis of up to 700 mm allows the machining of very tall parts. Multiple clamping is possible.

The good accessibility to the loading/unloading station is another advantage of matec-30 SG.



### Spindle configurations

### Specifications matec-30 SG

Working area X/Y/Z	1300 / 600 / 700 mm
Power	16 [30] kW - 40% DC
Speed	9000 [12000/15000/18000/24000/42000] rpm
Torque, max.	100 [190] Nm - 40 % DC
Rapid feed	30 [100] m/min
Tool magazine	24 [36/48] pcs
Tool diameter, max.	70 [130]
Tool length, max.	340 mm

Subject to technical changes

# es + Processes

## Stability, speed and precision



matec-30 SD



matec-30 SHV

### Swivel table series Machining inside - loading outside

The matec swivel table series has been developed for series production if high stock-removing capacity is required. Stability, precision and high speed are characteristics of these machines. A 180° swivel table is a part of every basic machine. It facilitates a quick tool change and renders high productivity.

matec "tailor made" system with its comprehensive range of products implies a multitude of machine concepts which provide optimal solutions for every customer and secure a considerable competitive advantage.

The basic machine matec-30 S is available in two sizes covering the whole spectrum of parts' dimensions for series production. The SH type is an especially compact and flexible machine with little place requirement, the SD machine with double spindle is particularly suitable for machining of most challenging and voluminous work parts and the SHV design with angle head fits best for horizontal and vertical machining of 5 sides and three-dimensional machining also in the large-scale production.

Handling systems, devices and automation solutions make it possible to use the swivel table series flexibly for every application.

### Optionen

- Motor spindle 9000 up to 42000 rpm
- Motor spindle power 16 kW / 30 kW
- Motor spindle for heavy chipping 8000 1/min, 216 Nm, 34 kW
- Additional tool magazine with up to 160 tools
- Tool taper HSK 63A DIN 69893
- Pick-up stations for oversized tools or angle drilling and milling heads
- CTS with pressure 20/40/70 bar
- Micro lubrication system
- Coolant cleaning units with different filter systems
- Coolant temperature control
- Coolant tank with volume capacity 450/900/2000 l
- Oil suction units
- Automatic doors
- 1-axis rotary table with conventional or direct drives
- 2-axes rotary/swivel table in various sizes
- Integrated quick change pallet systems
- Clamping hydraulics or pneumatics
- Rotary distributor hydraulics and pneumatics
- 3-D probe
- Tool measuring or tool breaking control
- Loading automation / NC-gripper



Working area matec-30 S



Working area with mounted CNC rotary table and tailstock



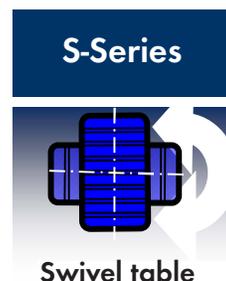
Loading station with 2 CNC rotary tables and clamping device



Working area matec-30 SG

### Specifications matec-30 S

Working area X/Y/Z	800 / 480 / 500 mm
Power	16 (30) kW - 40% DC
Speed	9000 (12000/15000/18000/24000/42000) rpm
Torque, max.	100 (190) Nm - 40 % DC
Rapid feed	60 m/min
Tool magazine	24 (36/48) pcs
Tool diameter, max.	70 (130) mm
Tool length, max.	340 mm
Subject to technical changes	





matec-30 L



matec-30 LD

### In detail:

**matec-30 L duo Double-spindle machining of identical work parts**

## Traveling column series

### Standard specifications

- Full cladding of the machining area incl. electrically protected sliding doors
- Digital main spindle drive, motor spindle, oriented spindle stop
- Spindle bearing  $\varnothing$  80 mm, tool clamping 12.000 N
- Linear guides in all axes
- Feed rate/rapid feed with digital AC servo motors in all axes
- Tool magazine traveling in X-axis (protectively installed in the traveling column)
- Tool position coding variable
- Automatic lag compensation for high speed milling of contours



### Options

- Additional tool magazine with up to 200 pcs
- Pick-up stations for oversized tools or angle drilling and milling heads
- CTS with pressure 20/40/70 bar
- Micro lubrication system
- 1-axis rotary table with conventional or direct drives
- 2-axis tilting rotary table
- Lathe spindle vertical/horizontal, size A8 and A11
- High speed rotary table with direct drive up to 4000 rpm (turning/positioning)
- Additional tool magazine only for turning tools with separate tool changer
- Separate fixed tool holder on the headstock for turning tools (option: with interrupted cut especially for heavy turning operations)
- CNC-carriage unit for tail-stock, steady rest and opposed spindle
- Integrated quick change pallet systems
- Clamping hydraulics or pneumatics
- Rotary distributor for hydraulics and pneumatics
- 3-D probe
- Tool measuring or tool breaking control
- Loading automation / NC-gripper

### Specifications matec-30 L duo

Working area X-axis	3550 mm
Working area Y-axis	600 mm
Working area Z-axis	700 mm
2 spindles, spindle distance	800 mm
Machine table size	3500 x 635 mm
Spindle	SK40 - DIN 69871 (HSK 63 A)
Speed	9000 (12000/15000/18000/24000/42000) rpm
Power	16 (30) kW - 40% DC
Torque, max.	100 (190) Nm - 40% DC
Rapid feed	30 (48/100 with linear drive) m/min
Tool magazine	2 x 24 (36/48) pcs

Subject to technical changes

### Special features

- Two separate traveling columns for adjustment of tool length, tool radius and clamping



Left-sided working area with clamping device



Right-sided working area with tilting table and clamping device

# es + Processes

## Long-bed machines for single-part and series production



matec-40 L



matec-50 L

### Traveling column series

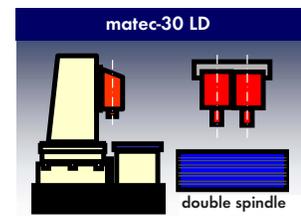
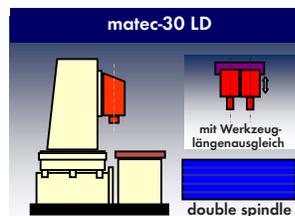
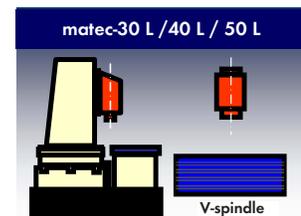
The traveling column series has been conceived for single-part and series production. Whether used for twin table machining with rotary table or tail stock, multiple clamping or single-part manufacturing of voluminous parts, this machine group covers nearly all fields of application. Stability, precision and high speed are characteristics of these machines.

Outstanding features of the traveling column series are long traverse paths, horizontally and vertically swiveling machine spindles, easy mounting of clamping units as well as automatic loading by means of external loading systems.

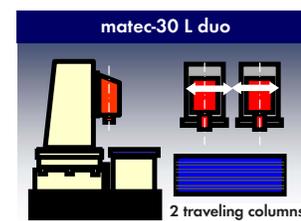
The matec "tailor-made" system with its extensive service package gives way to a multitude of machine concepts which provide an optimal manufacturing solution for every customer, securing a competitive advantage.

### Spindle configurations

The basic machine of this series is the long-bed machine matec-30 L. This milling center is available in various configurations, e.g. with double motor spindle (matec-30 LD) or with 2 traveling columns (matec-30 L duo). Also available in taper SK 50 as matec-40 L and matec-50 L.

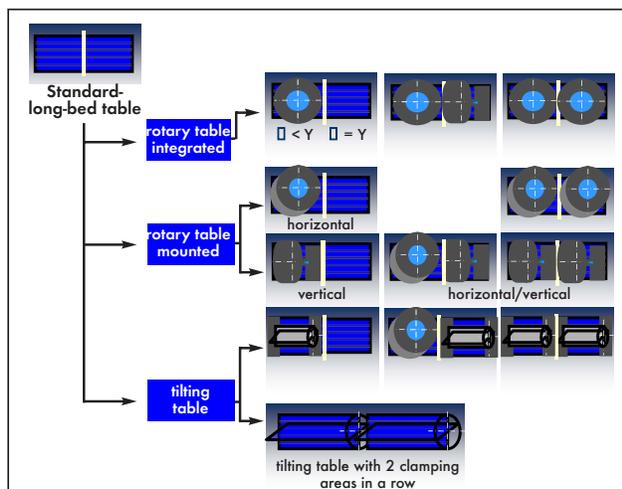


The machining center matec-30 L duo is a long-bed machine with two traveling columns. This concept allows various machining strategies: for one thing, the double spindle machining of identical parts with tooling correction in 2 x 3 axes; for another thing, the independent simultaneous machining of one work part by means of both spindles. Integrated turning spindles, vertical or horizontal, transform matec-30 L duo into a double spindle milling/turning center.

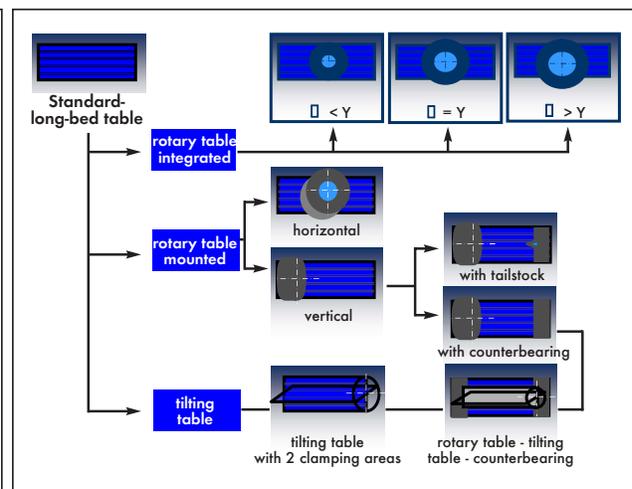


### Table configurations

#### 1 working area



#### 2 working areas





matec-30 HV



matec-30 HVK



matec-30 HV compact



matec-30 HVTH

### In detail:

### matec-30 HVT Turning and milling in one machine

The HV-machines of the traveling column series have been developed for single-parts and series production. Whether used for twin table machining with rotary table or tailstock, multiple clamping or single-part manufacturing of voluminous parts, this machine group covers nearly all fields of application. Stability, precision and high-speed are characteristics of these machines.

Outstanding features are long traverse paths, horizontally and vertically swiveling machine spindles, easy mounting of clamping units as well as automatic loading by means of external loading systems. A swivel head for five-side horizontal and vertical machining as well as for three dimensional machining distinguishes the HV-series. These machines are also available in different configurations

matec-30 HVT is a milling/turning center for series production. If work parts are best manufactured by complete machining this can be done on the matec-30 HVT in max. two clampings. The vertical lathe spindles are able to turn and to position depending on the machining task. The swivel head provides for five-side machining during drilling and milling processes and during the turning process it allows the application of multifunctional lathe tools in all angles.



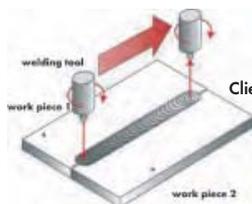
### Special features

- High-speed rotary tables with direct drive  $\varnothing$  300 up to 2200 mm
- Speed of lathe spindle from 100 up to 6000 1/min (depending on spindle type/ turning device)
- Separate tool magazines for turning tool holder
- Swivel head  $\pm 90^\circ$  with serration catching in steps of  $1^\circ$ , (opt. continuously variable)

### Friction stir welding on matec-30 HV

Friction stir welding is a solid-state joining process and is used for applications where the original material characteristics must remain unchanged as far as possible. It is primarily used on aluminium. In FSW, a cylindrical-shouldered tool, with a profiled probe is rotated at a constant speed and fed at a constant traverse rate into the joint line between two pieces of sheet or plate material, which are butted together. Frictional heat is generated between the wear-resistant welding shoulder and nib, and the material of the work pieces, which causes the stirred materials to soften without reaching the melting point, allowing the traversing of the tool along the weld line in a plasticised tubular shaft of metal. Thus the two pieces are firmly welded together. matec friction stir welding brings best results. Patent pending.

- matec process:** 5-axis, 3D shapes
- Material:** Aluminium and its alloys
- Result:** Welding seam gas-proof and water-proof
- Advantages:** High process-safety  
No rejects  
Energy-saving  
Time-saving
- Clientele:** Manufacturers of tanks and containers  
Automotive industry  
Medical industry



### Specifications matec-30 HVT

Working area X	1300 - 12 000 mm
Working area Y	600 (800/1000/1200) mm
Working area Z	vert. 700 (1000/1200)/hor. 800 (1100/1300) mm
Machine table width	635 (835/1035/1235) mm
Spindle	SK40 - DIN 69871 (HSK 63 A)
Speed	9000 (12000/15000/18000/24000/42000) rpm
Power	16 (30) kW - 40% DC
Torque, max.	100 (190) Nm - 40 % DC
Lathe spindle	motor spindle spindle head DIN 55026 A8 (A11)
Rapid feed	30 (48/100 with linear drive) m/min
Tool magazine	36 (48 up to 128) pcs

Subject to technical changes



Left-sided and right-sided working area with mounted rotary tables

# es + Processes

## HV machines - swivel head for more flexibility



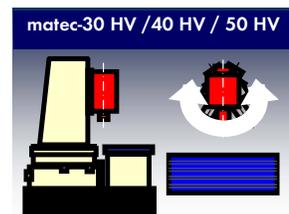
matec-40 HV



matec-50 HV

**matec-30 HV duo Machining from the bar up to 3000 mm length**

**Spindle configurations**



HV spindle (swivel head)

matec-30 HV duo is a long-bed machine based on matec-30 L duo. The center has 2 independent traveling columns with swivel head (2 x 4 axes), which makes separate machining of 2 x 3 sides of the work part possible transferring the work part to the opposed spindle. When the machining process is finished, an automation unit with NC gripper deposits the work part on a discharge belt.

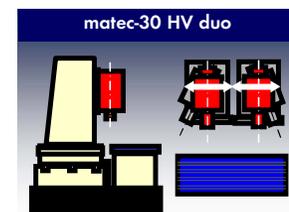
### Specifications matec-30 HV duo

Working area X	4000 mm
Working area Y	600 mm
Working area Z	vertical 700 / horizontal 800 mm
2 traveling columns	spindle distance min. 1160 mm
2-axis saw unit (opt.)	X=900 mm, Y=500 mm saw blade Ø 490 mm
Spindle	SK40 - DIN 69871 (HSK 63 A)
Speed	9000 (12000/15000/18000/24000/42000) rpm
Power	16 (30) kW - 40% DC
Torque, max.	100 (190) Nm - 40% DC
Rapid feed	30 (48/100 with linear drive) m/min
Tool magazine	2 x 36 (48) pcs

Subject to technical changes

### Special features

- Bar feeder and automation
- 2-axis saw unit



2 traveling columns HV spindle



Working area with 2 traveling columns, counterspindle vs. CNC rotary table and saw unit



Machining on counterspindle



NC gripper depositing a work part

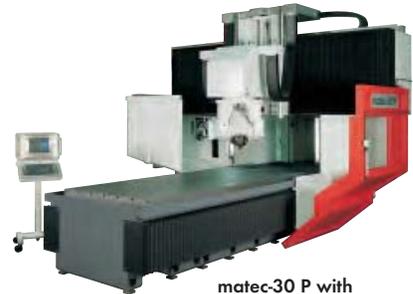
For further information on the traveling column series please see [www.matec.de](http://www.matec.de)



matec-30 P with vertical spindle



matec-30 P with 1-axis swivel head



matec-30 P with 2-axis swivel head

### Gantry series

The gantry machines 30 P (Taper SK40/HSK 63A) and 50 P (Taper SK50/HSK 100 A) were designed for single-part and series production of large and heavy work parts for tool and mould making, mechanical engineering, and structural steel engineering. Main range of application is the machining of 3D-shapes in steel and aluminium, plates, welding and steel construction.

The gantry construction guarantees good accessibility from all sides in constrained space. The application of either a swivel head ( $\pm 90^\circ$ ) or a 2-axis CNC motor spindle milling head permits multilateral machining. A rich variety of spindle speed and spindle power possibilities for all materials is available.



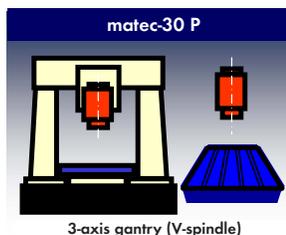
free-surface machining

### Standard specifications

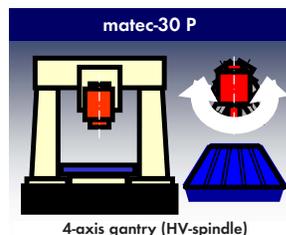
- Gantry design with fixed machine table
- Traverse path in X-axis from 3000 to 15000 mm
- Traverse path in Y-axis from 1600 to 5000 mm
- Traverse path in Z-axis from 800 to 2300 mm
- Prestressed roller guides in all axes
- Drive system in X-axis with ballscrews on both sides
- Rapid feed rate with digital AC servo motor
- Digital main spindle drive
- Motor spindle, speed 9000 rpm
- Orientated spindle stop
- Tool magazine travelling in X-axis
- Tool position coding variable
- Tool life control
- Sister tool managing
- Automatic lag compensation in order to provide high speed milling of contours
- Chip conveyor on both sides along the X-axis
- Coolant system (CTS)
- Machine cladding (without roof) according to CE norm
- Control panel with all necessary operating devices
- Controls:**  
Rexroth IndraMotion MTX  
Heidenhain iTNC 530  
Siemens 840D

### Options

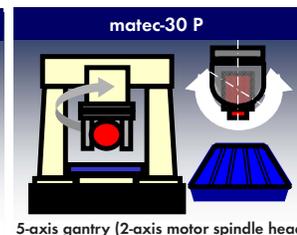
- Linear drives in X- and Y-axis
- Motor spindle speed 9000 up to 42000 rpm
- Motor spindle power 16 kW up to 34/60 kW
- Additional tool magazine with up to 200 pcs
- Pick-up stations for oversized tools or angle drilling and milling heads
- CTS with pressure 20/40/70 bar
- Minimal quantity lubrication
- Coolant cleaning units with different filter systems
- Coolant temperature control
- Coolant tank with volume capacity 450/900/2000 l
- Oil suction unit
- Automatic doors
- Integrated quick change pallet system
- Clamping hydraulics or pneumatics
- 3-D probe
- Tool measuring or tool breaking control
- Tool identification system
- Tool control system
- Control panel portable or with radio signal



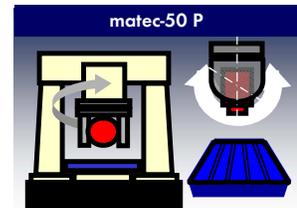
3-axis gantry (V-spindle)



4-axis gantry (HV-spindle)



5-axis gantry (2-axis motor spindle head)



5-axis gantry (2-axis motor spindle head)

### Table configurations Gantry series

# es + Processes

## Long traverse paths for voluminous work parts



matec-30 P with 2-axis CNC motor spindle milling head and traveling operator platform



### Special features

- 2-axis CNC swivel head for 5-axis simultaneous machining
- C-axis (rotary axis)  $\pm 200^\circ$
- W-axis (swivel axis)  $\pm 120^\circ$
- Long Z-axis up to 1500 mm
- Gantry bridge adjustment for optimal chipping process

### Specifications matec-50 P

Working area X	4000-50000 mm
Working area Y	5000 mm
Working area Z	1100 (1500) mm
Working area W	gantry bridge adjustment 800 mm
Gantry clearance height	2270 (3070) mm
Gantry clearance width	4000 mm
Machine table width	3000 mm
T-slots DIN 650	22 H10
Spindle	SK50 - DIN 69871 (HSK 100 A)
Speed	9000 rpm
Power	60 kW b. 40% DC
Torque, max.	575 Nm - 40 % DC
Rapid feed	30 m/min
Drilling performance in steel	80 mm
Tapping in steel	M36
Milling performance in steel	1000 cm <sup>3</sup> /min
Tool magazine	18 (bis 200) pcs
Tool diameter, max.	150 (250) mm
Tool length, max.	520 mm
Tool weight	25 kg
Tool change time	approx. 10 sec
Chip-to-chip time	(depending on Y-axis) approx. 20 sec
Subject to technical changes	

matec-50 P with 2-axis swivel head is a gantry machining center with tool system SK50 / HSK 100 A. The machine has been developed for machining of extensive and voluminous work parts in mold, steel and machine industries.

The application range mainly covers the manufacturing of 3-D forms made of synthetic materials, non-steel metals and steel as well as machining of welding parts and plate-formed work parts.

The high-performance motor spindle with 60 kW and constant speed 9000 rpm provides for the optimal chipping of all materials in its class.



2-axis NC motor spindle milling head



Tool changer



## Piesslinger GmbH, Austria

### Customized manufacturing solutions for machining of aluminium parts

*When 14 years ago the Austrian tradition company Piesslinger first engaged in the manufacturing of high-quality aluminium design pieces, the choice fell on a matec machining center because it closely met the job requirement of planners. Today the customized matec centers from Köngen fill an entire production hall.*

*At Piesslinger the newest horizontal-vertical machining center matec-30 HV is equipped with a CNC swivel head as well as with free from wear linear drives in the X-axis and with torque motors driving the swivel bridge which is optimal for the manufacturing of aluminium.*

#### Machining centers for fine aluminium surfaces

The scythes and hammermill Piesslinger founded in year 1553 has been owned by the family for eleven generations. For 455 years the competence and experience in machining and surface finishing of metal and aluminium have contributed to the success of the company. Presently there are 420 employees occupied. In Mölln aluminium is processed not as „sheer“ material, in fact they manufacture elements which shape our everyday life. Whether for bath, kitchen, furniture, sport articles, entertainment or lighting industries - nowadays the light-weight aluminium is everywhere at home. Many times multiple ideas of designers set the benchmark for the technological innovations of the company Piesslinger.

In some sectors Piesslinger was the one that introduced aluminium. Johann Hieslmayr, the director of the department for aluminium components at Piesslinger GmbH is sure of that. „Some products would not exist on the world market if we had not created the basis to manufacture these products in aluminium.“ Until 1994, Piesslinger performed almost solely non-cutting processes like shaping, stamping or deep-drawing. By and by the lot sizes were declining and the expensive stamping tools turned to be increasingly unprofitable. Cutting was the more economical alternative. For a while Piesslinger had suppliers perform cutting operations. Then, the company decided to invest in metal-cutting manufacturing.

Hieslmayr recalls: “We searched for a machine which corresponds to our individual requirements. The economic and damage-free machining of thin-walled profiles and sheets demands special machining solutions that cannot be realized by a standard machining center. The smallest damage caused by a chip turns a work piece into scrap.” At that time matec offered individual problem-solving solutions for this specific case of operation. Thanks to the ingenious modular system it was possible to realize the task without extensive constructive effort.

#### The first matec machine is still running impeccably after 14 years

The first machine delivered to Piesslinger in 1994 carries the serial number 24 at matec and it is still running perfectly up to this very day. Johann Hieslmayr assures: “At that time we decided to purchase “matec” because the machines were so simple in their constructions. That argues for such a machine. Except for the CNC systems there are no highbred and potentially unreliable components. I think that the principle of the matec tool changer with the tool magazine in the traveling column is, from the conceptual point of view, the smartest one which is currently offered on the market”.

The concept has obviously convinced the customer. Since the installation of the first matec machine Piesslinger has ordered on average one new center per year. Today the constantly growing volume of high-quality design parts is produced on 12 matec machining centers, the newer of which are equipped with linear drives. “For the aluminium machining the linear drive is ideal” says Hieslmayr. „The availability of our machines has been increased at about a quantum leap because the drives are extremely fail-safe.“

Where high-speed motor spindles for machining aluminium are concerned, the development has brought an enormous progress - today there are motor spindles in use which provide an increase in cutting capacity, on basis of a 80% duty cycle and 24 hours operation. The main spindles have to meet highest demands. The reason are the extreme vibrations which occur during the machining of aluminium profiles. Johann Hieslmayr comments: “The hollow chamber profiles with their material thinness cannot be clamped tightly. We must clamp the parts in a way that keeps their surfaces protected. Therefore, we try to minimize the clamping to the extreme. This only works with specially developed clamping devices, which are optimized for damage-free contact to the work pieces.“



Swiveling device for clamping of extremely damageable hollow chambered rails



Swiveling device for multiple clamping of aluminium design rails

# ectors + applications

in different industrial sectors and all over the world



Sheet metal parts are clamped deformation-free by means of vacuum clamping plates

## Clamping free of vibrations

A profound know-how of the company Piesslinger comprises in finding solutions for clamping with low vibrations and balancing machine feed rate and speed in order to minimize oscillations as far as possible. It comes in useful that matec provides numerous table devices that allow clamping work pieces of different kind. CNC rotary tables with torque drive whether mounted on or integrated in the machine table or numerically controlled swivel tables with a swivel bridge of various lengths - matec provides a solution for the clamping of every work piece, as proved with Piesslinger's matec machines.

The shift to spindles optimized for aluminium machining lead to a considerable increase in productivity at Piesslinger's company. The operating time was significantly prolonged. For two years now Piesslinger has been using the motor spindle HSK 63A for certain machining tasks. This spindle has a very rigid construction which absorbs vibrations occurring during profile machining better than other spindles. Johann Hieslmayr: "For high performance boring operations we can now even use heavy-duty boring tools."

## Customized tool changer

Simultaneously matec was working on the further improvement of chip-to-chip time and the availability of the matec tool changer. The sensors were set out of order by the aluminium chips and the plastic bearing bush, which the tool was changed into, wore out very often due to 2 up to 3000 tool changes per day. Therefore matec machine engineers developed a new tool changer for higher demands. This tool changer functions on classic mechanical basis and thus it is practically free from wear.

Johann Hieslmayr: "The strong point of matec lies in the adaptation of the machine concept to our aluminum products in cooperation with us. At present we are pondering on buying the next matec machine that will perform deep borings. It will probably be a matec-30 L, this time with inner coolant supply through spindle (CTS). For this purpose the machine must be equipped with a high pressure pump because our central coolant facility provides only 5 up to 6 bar. We need considerably higher pressure for deep borings. So this machine will be modified according to our needs."



matec CEO Erich Unger: „The new tool changer is designed in the matec way similar to all our tailor-made elements. It can be retrofitted on every existing matec machine with few modifications“

To the right: Johann Hieslmayr: „The new matec tool changer ist constructed in such an ingeniously simple way as to enable us to assembly it by ourseves.“

# Sectors

General suppliers  
Automobile suppliers  
Tool and mould industries  
Tanks and containers industry  
Aluminium machining/Foundry  
Machine and plant engineering  
Packing machines

Electric and electronics industries  
Plastic processing industry  
Medical technology  
Metal-working industry  
Aerospace industry  
Automobile manufacture