

*1994'den beri*  
**Ses3000 CNC**  
Çözüm Ortağınız...

VS

VERTICAL  
MILLING MACHINES

5-axis  
with tilting rotary table

**YCM**®

**TRIMILL**®  
machine tools





# TRIMILL – your partner for PORTAL MILLING MACHINES

Our main mission is to develop and manufacture portal milling machines with an excellent proportion of QUALITY – OUTPUT – RELIABILITY – PRICE. An important part of our services comprises a well-elaborated system of the warranty and after-warranty service.

A wide selection of the TRIMILL machines contains vertical and horizontal portal milling machines, which are distinguished by high rigidity and accuracy and are intended for machining of pressing tools, moulds and precise workpieces in the single-piece production.

- Machine travels from (X,Y,Z) 1.100/1.000/700 mm to 13.500/4.500/1.800 mm
- Three-, five- and multi-axis design

## Partnership with our customers is based on following pillars:

- Proficiency, experience, professionalism
- Customized solutions
- Development of new solutions
- Top service and immediate availability of spare parts

## Figures and facts

- 12.900 m<sup>2</sup> of the production area and more than 130 specialists in development, design, assembly and technology
- Since 2000, when our family company was established, we have been operating in the markets all over the world
- 480 portal machining centres at 200 satisfied customers in 25 countries of the world

## Our customers

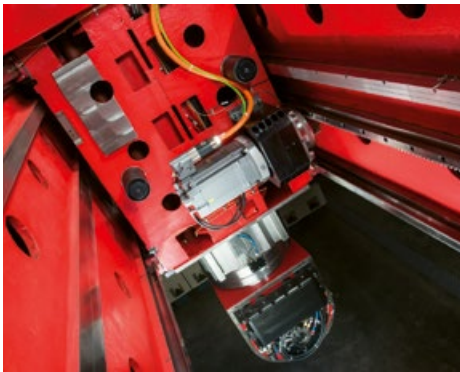
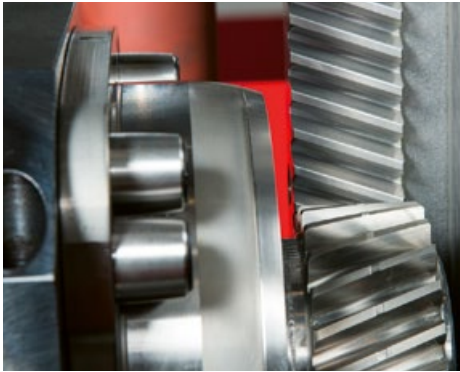
- Tool factories
- Forging shops
- Automotive industry
- Aerospace industry
- Energy industry

## The most frequently machined materials on our machines

- Tool steel
- Aluminium alloys
- Cast iron
- Structural materials

# ■ TRIMILL PRINCIPLE: BOX-IN-BOX

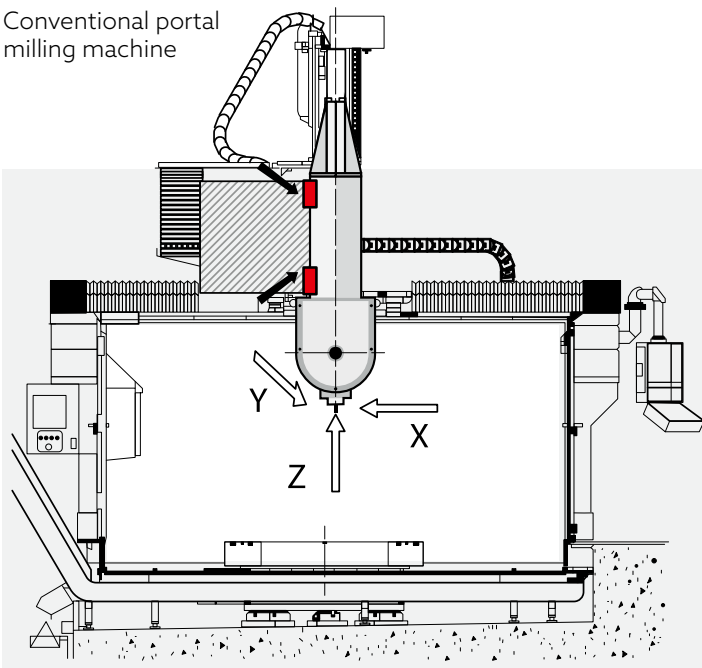
“BOX-IN-BOX” is a unique system with closed construction of the cross-beam and cross-slide with internally positioned and guided ram unit (axes Y and Z).



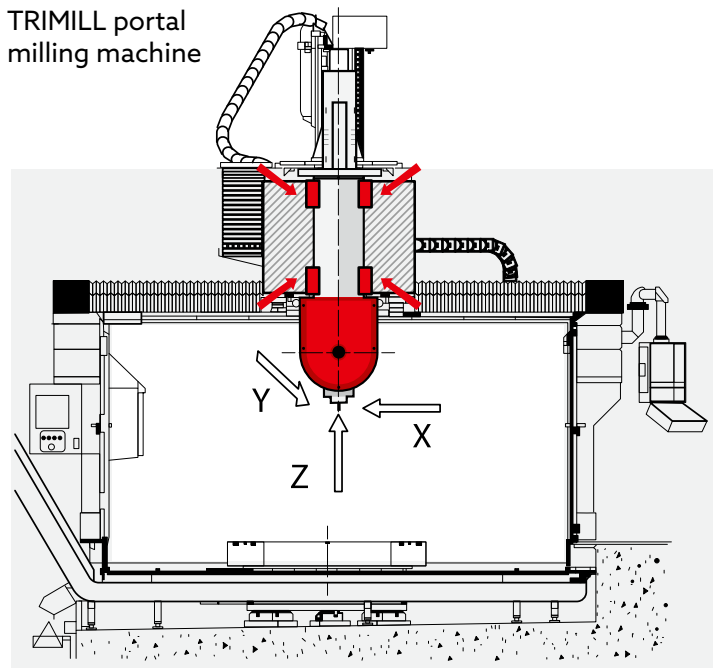
## THE ADVANTAGES OF TRIMILL PRINCIPLE:

- Consistent milling results thanks to stable thermo-symmetrical arrangement on linear guideways
- Always 4 guides of the cross and vertical support for the machine, preventing the occurrence of the so-called “banana effect” which deforms/bends the vertical support of the machine
- Increased rigidity of the machine in the X axis by +60%, in the Y axis by +30% and in the Z axis by +90%

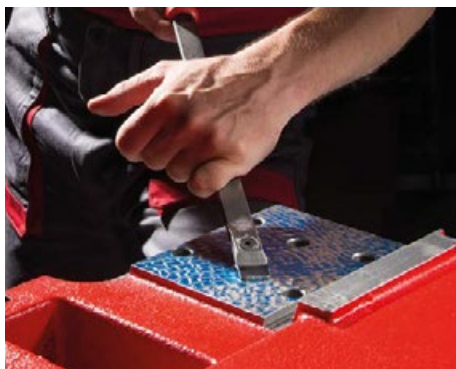
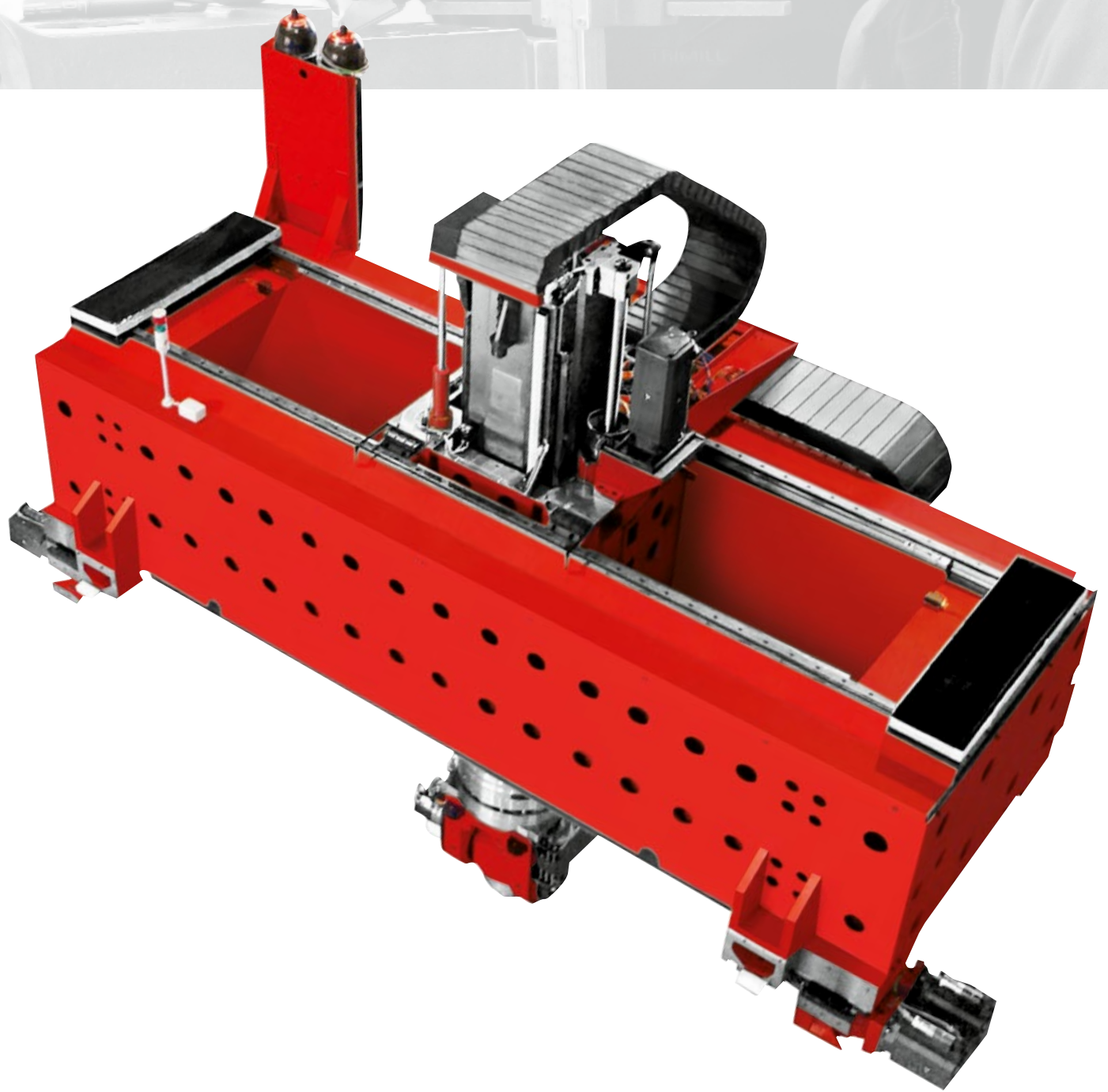
Conventional portal milling machine



TRIMILL portal milling machine







# TRIMILL VS 1614





# 5-AXIS MACHINE WITH TILTING ROTARY TABLE



## Travels X, Y, Z

X-axis	1.600 mm
Y-axis	1.400 mm
Z-axis	800 mm

## Spindle (S1/100%)

Spindle - option 1:	25 kW, 200 Nm, 12.000 1/min, HSK-A100
Spindle - option 2:	32 kW, 306 Nm, 14.000 1/min, HSK-A100
Spindle - option 3:	29 kW, 69 Nm, 24.000 1/min, HSK-A63



## Tilting rotary table

Clamping surface	ø 1.200 mm
Workpiece weight	max 2.500 kg
Workpiece size	max ø 1.415 mm
Workpiece height	max 900 mm
Tilting speed B-axis	26 min <sup>-1</sup>
Rotation speed C-axis	50 min <sup>-1</sup>
Clamping torque B-axis	+130°/-130°
Rotation range C-axis	n × 360°
Clamping torque B-axis	10.000 Nm
Clamping torque C-axis	6.500 Nm

## Feed rate

Feed rates X, Y, Z	30 m/min
Acceleration X, Y, Z	3 m/sec <sup>2</sup>



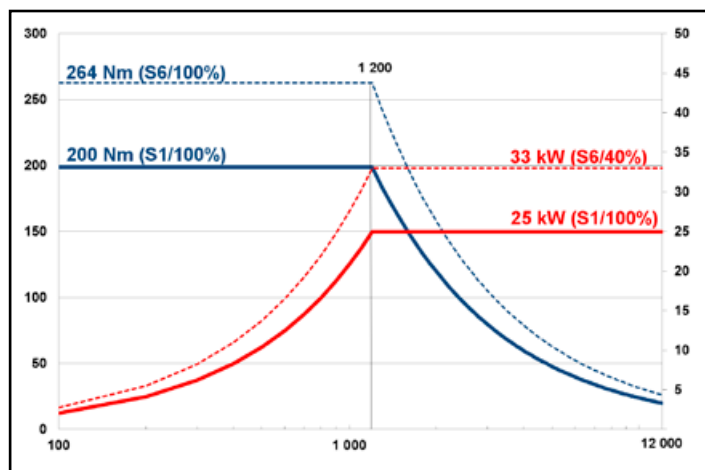
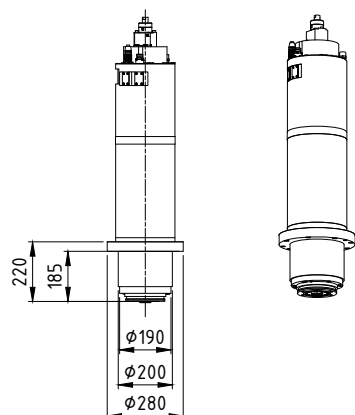
## Technical data

Machine weight approx:	32.000 kg
Machine dimensions:	cca 6.600 × 4.400 × 4.300 mm

# SPINDLE CHARACTERISTICS

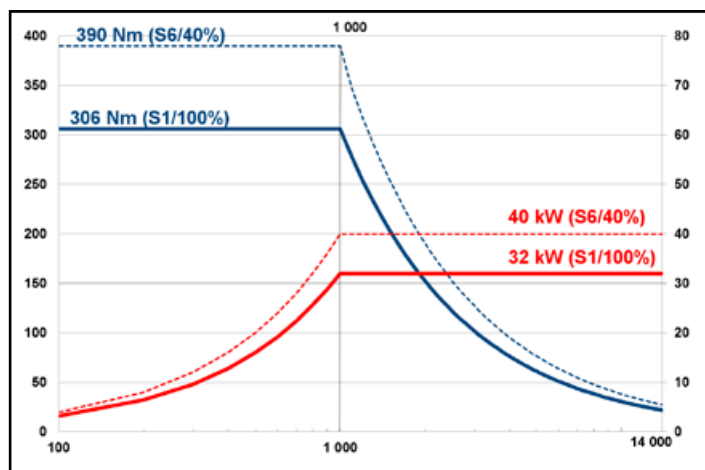
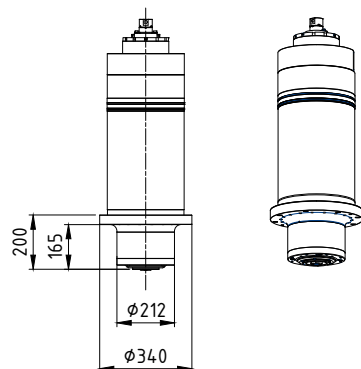
## OPTION 1

Power S1:	25 kW
Max. Power S6:	33 kW
Torque S1:	200 Nm
Max. Torque S6:	264 Nm
Max. Speed:	12.000 rpm
Clamping Beam:	HSK-A100



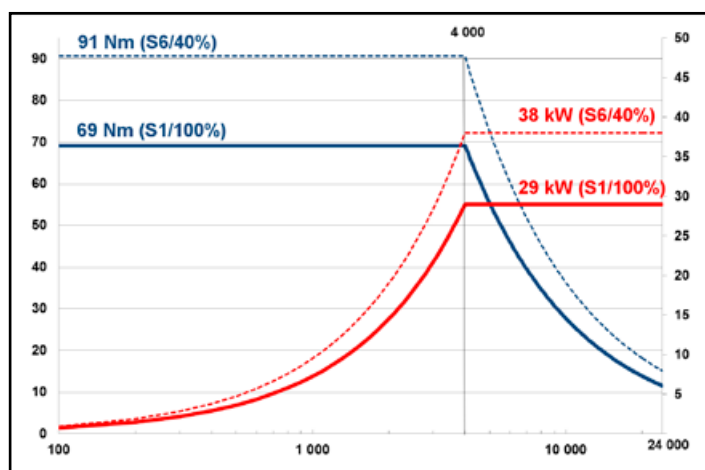
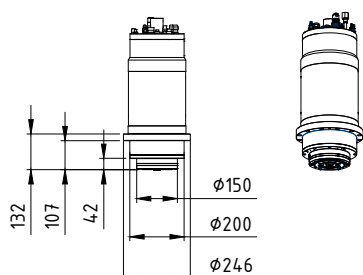
## OPTION 2

Power S1:	32 kW
Max. Power S6:	40 kW
Torque S1:	306 Nm
Max. Torque S6:	390 Nm
Max. Speed:	14.000 rpm
Clamping Beam:	HSK-A100



## OPTION 3

Power S1:	29 kW
Max. Power S6:	38 kW
Torque S1:	69 Nm
Max. Torque S6:	91 Nm
Max. Speed:	24.000 rpm
Clamping Beam:	HSK-A63



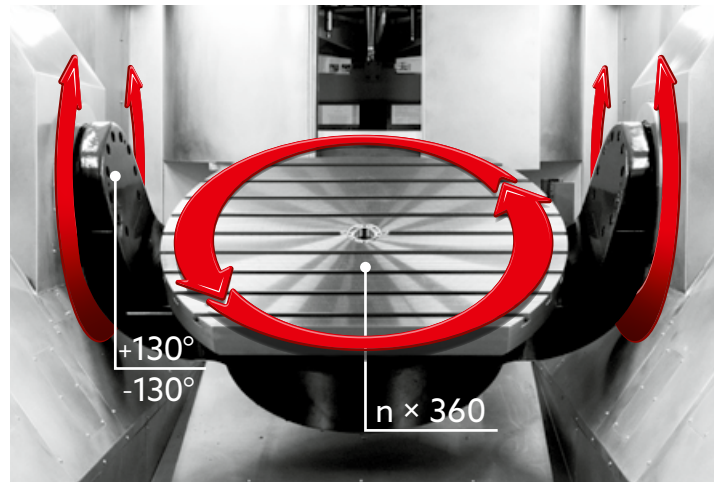
— Power (S1/100%)      — Torque (S1/100%)  
- - - Power (S6/40%)      - - - Torque (S6/40%)



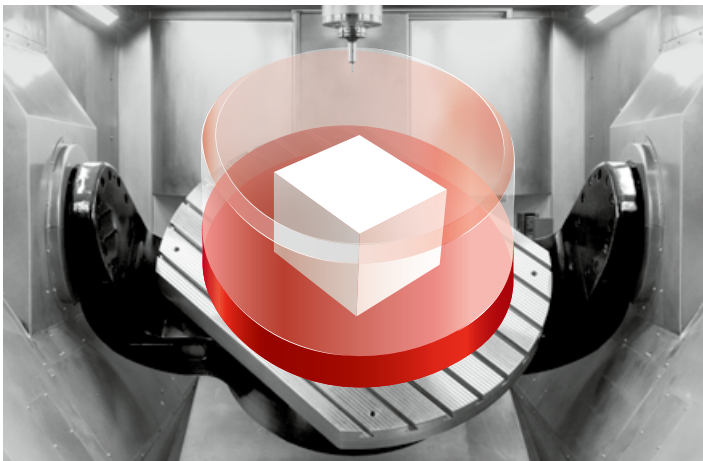
## OPERATING RANGE OF ROTATIONAL AXES

Use of torque motors guarantees the dynamics of the axes rotation.

- 1 torque motor for table rotation (C-axis)
- 2 torque motors for table tilting (B-axis)



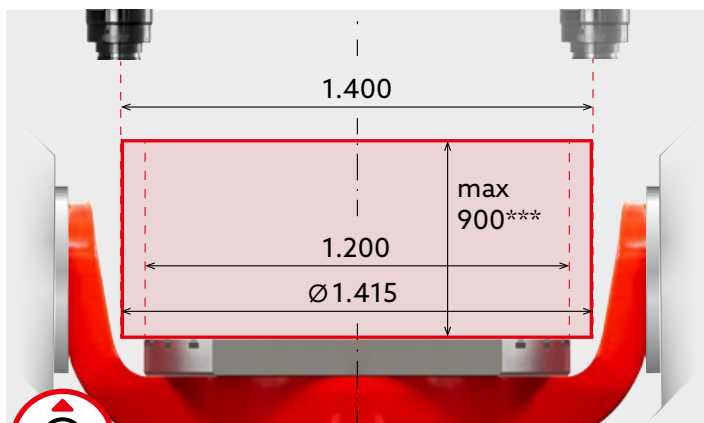
## TECHNOLOGY OPTIONS



5-side positioning milling



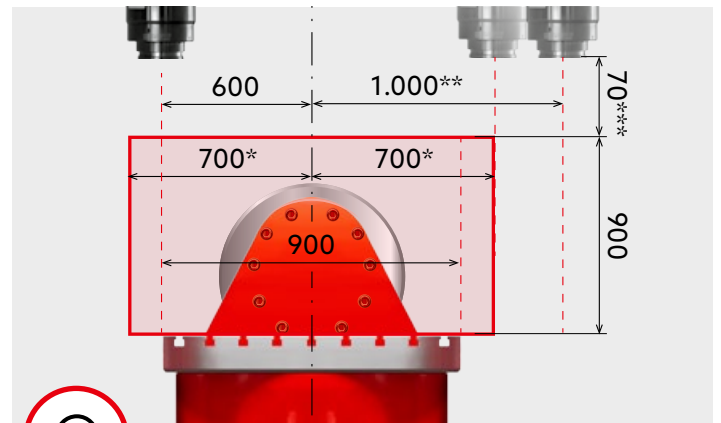
Continuous milling of 3D general surfaces



\* Plate-type ATC

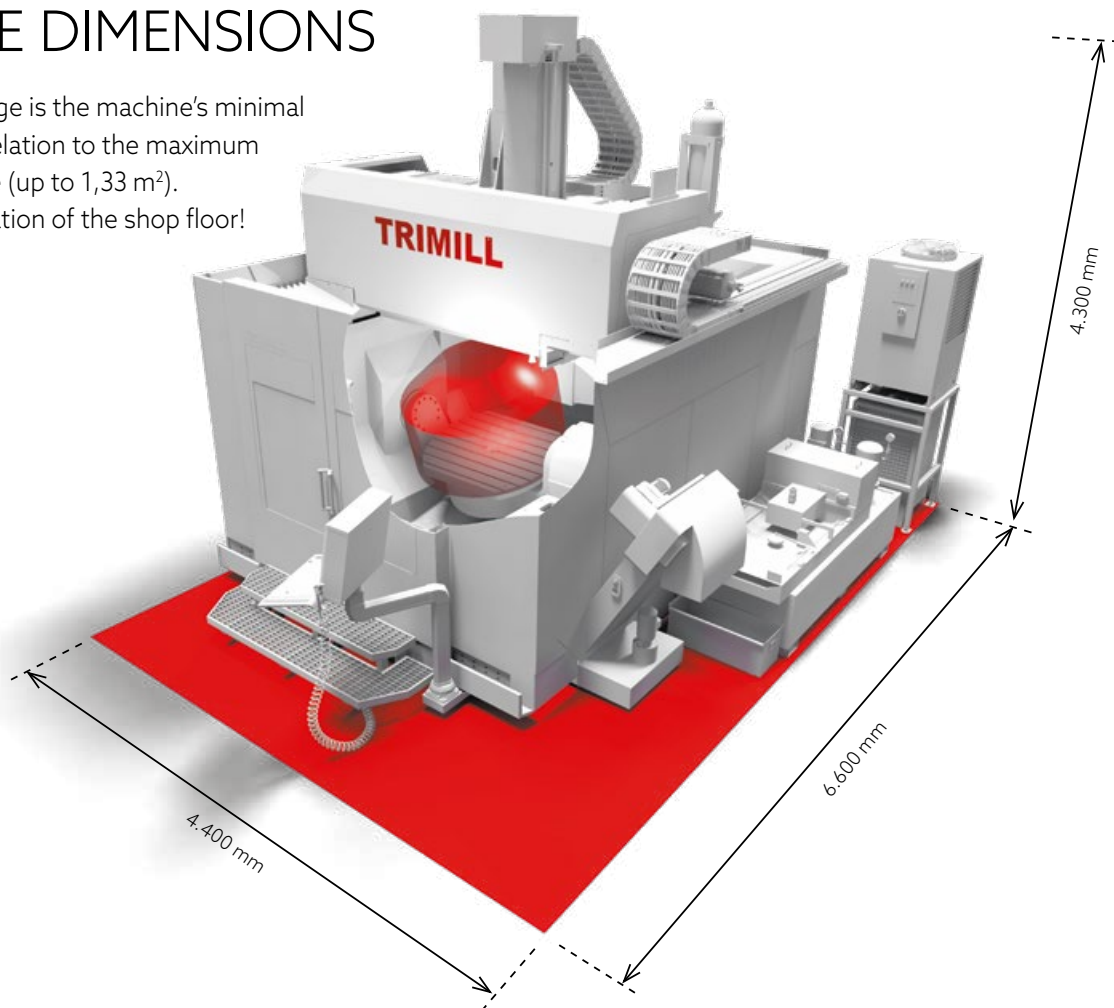
\*\* Rack-type ATC

\*\*\* Height dependent on chosen type of spindle and length of tool



## MACHINE DIMENSIONS

Significant design advantage is the machine's minimal footprint (only 28 m<sup>2</sup>), in relation to the maximum machinable workpiece size (up to 1,33 m<sup>2</sup>). This leads to perfect utilization of the shop floor!



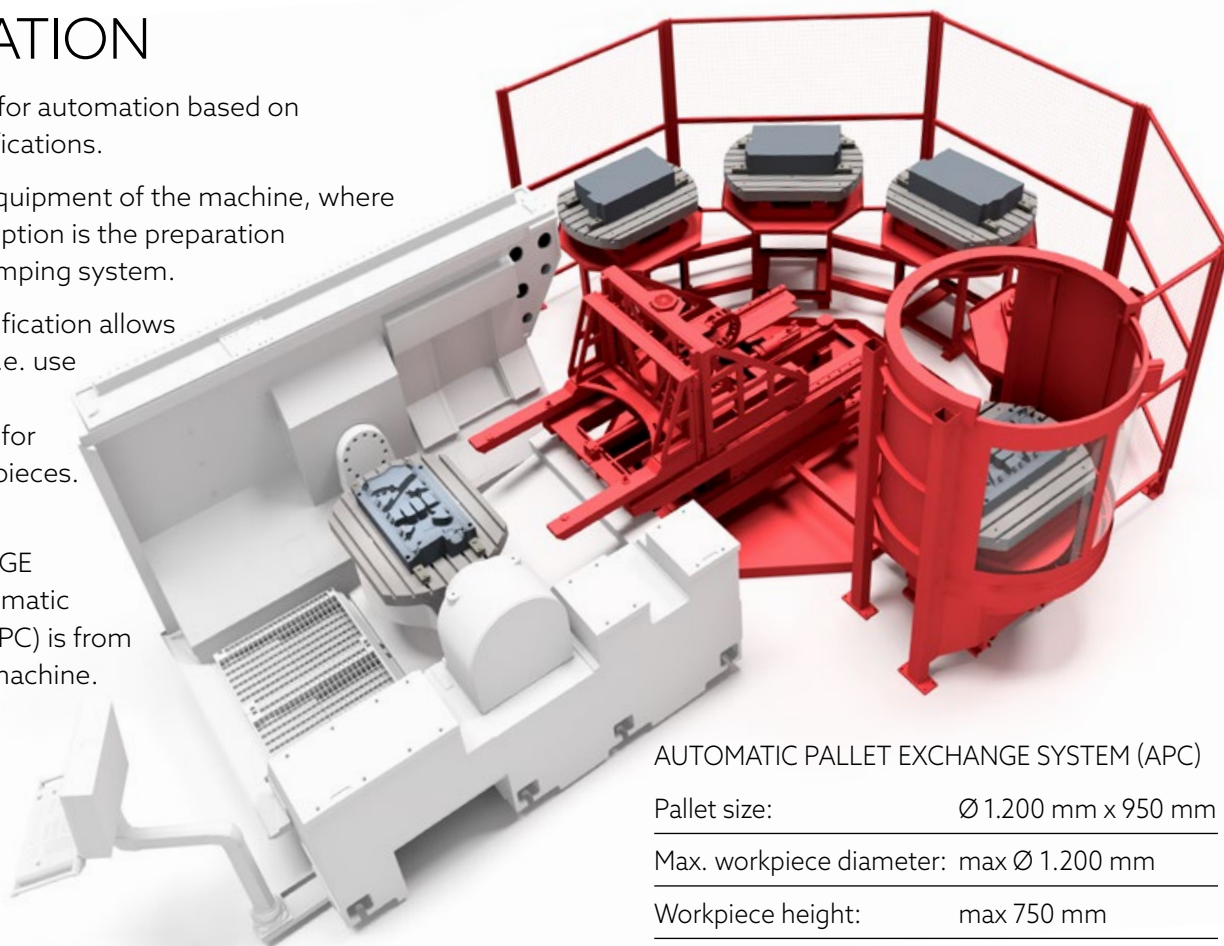
## AUTOMATION

Machine is ready for automation based on customer's specifications.

It is an optional equipment of the machine, where the basis of this option is the preparation for zero-point clamping system.

The highest specification allows for palletization, i.e. use of automated changing system for pallets with workpieces.

**GREAT ADVANTAGE**  
Entrance for Automatic Pallet Changer (APC) is from back side of the machine.



### AUTOMATIC PALLET EXCHANGE SYSTEM (APC)

Pallet size:	Ø 1.200 mm x 950 mm
Max. workpiece diameter:	max Ø 1.200 mm
Workpiece height:	max 750 mm
Max. workpiece weight:	1.800 kg





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