

*#t\_time*



# 5-AXIS MILL-TURN MACHINING CENTERS.





*This is who we are*  
**GROB-WERKE.**







*Technology at its best*

# STEP WITH US INTO A GREEN FUTURE.

At GROB, we strive for continuous progress and improvement. Not only do we strive to develop outstanding solutions and products for our customers, but we also seek to make a contribution to our environment and future generations. This is firmly anchored in our corporate philosophy and lived every day.

We therefore utilize photovoltaics and geothermal energy in our locations and support a wide variety of social projects. We also value SUSTAINABILITY in our internal departments. Our products are based on the highest energy efficiency and regenerative drive systems. We integrate our supplier network in reducing CO2 footprint.



OUR PRODUCT RANGE.

#machiningtechnology #universalmachiningcenters  
#assemblyplants #electromobility #automation  
#additivemanufacturing #digitalization  
#usedmachines #service

*Concentrated competence worldwide*

# INTELLIGENT TECHNOLOGY IS HUMAN.

For generations, we at GROB have lived and experienced this principle by making our customer's requirements the focus of our work. The result is sophisticated technology creating more efficient production processes worldwide and delivering highest quality.



## RESEARCH & DEVELOPMENT

With a high degree of creativity and technical intuition, as well as the best engineering expertise, our developers have worked hard to earn the reputation of being a technology leader.



## ASSEMBLY

From pre-assembly to machine assembly to process commissioning – our employees demonstrate their expertise with optimally coordinated workflows.



## ENGINEERING

With method development and structured problem solving, our employees in Engineering develop innovative concepts representing milestones for precision, dynamics, and reliability.



## COMMISSIONING

With simulation techniques and virtual commissioning, we achieve the highest adherence to delivery dates and product quality.



## PRODUCTION

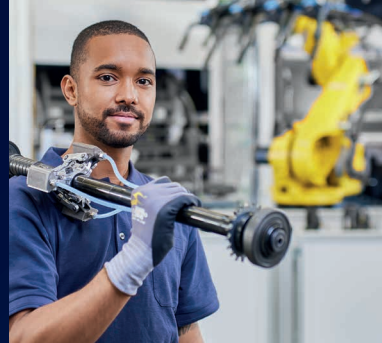
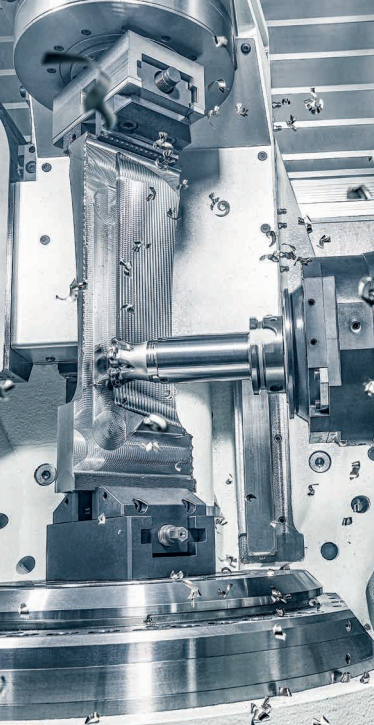
The high degree of vertical integration along the entire value creation chain, numerous machining technologies and our employees' distinctive specialist knowledge create the best conditions for state-of-the-art production.



## TECHNICAL APPLICATION CENTERS

Our production plants in Germany, Brazil, the USA, China, Italy and India have technical application centers for the machining and electromobility sectors, where our customers can experience GROB technologies up close.







*5-axis mill-turn machining centers by GROB*

# THE RIGHT CONCEPT FOR YOUR INDUSTRY.

## 5-AXIS MILL-TURN MACHINING CENTERS.

Machine concept

Machine components

Machine characteristics

Technical data

## AUTOMATION SOLUTIONS.

## DIGITALIZATION.

## SERVICE.





ENERGY TECHNOLOGY

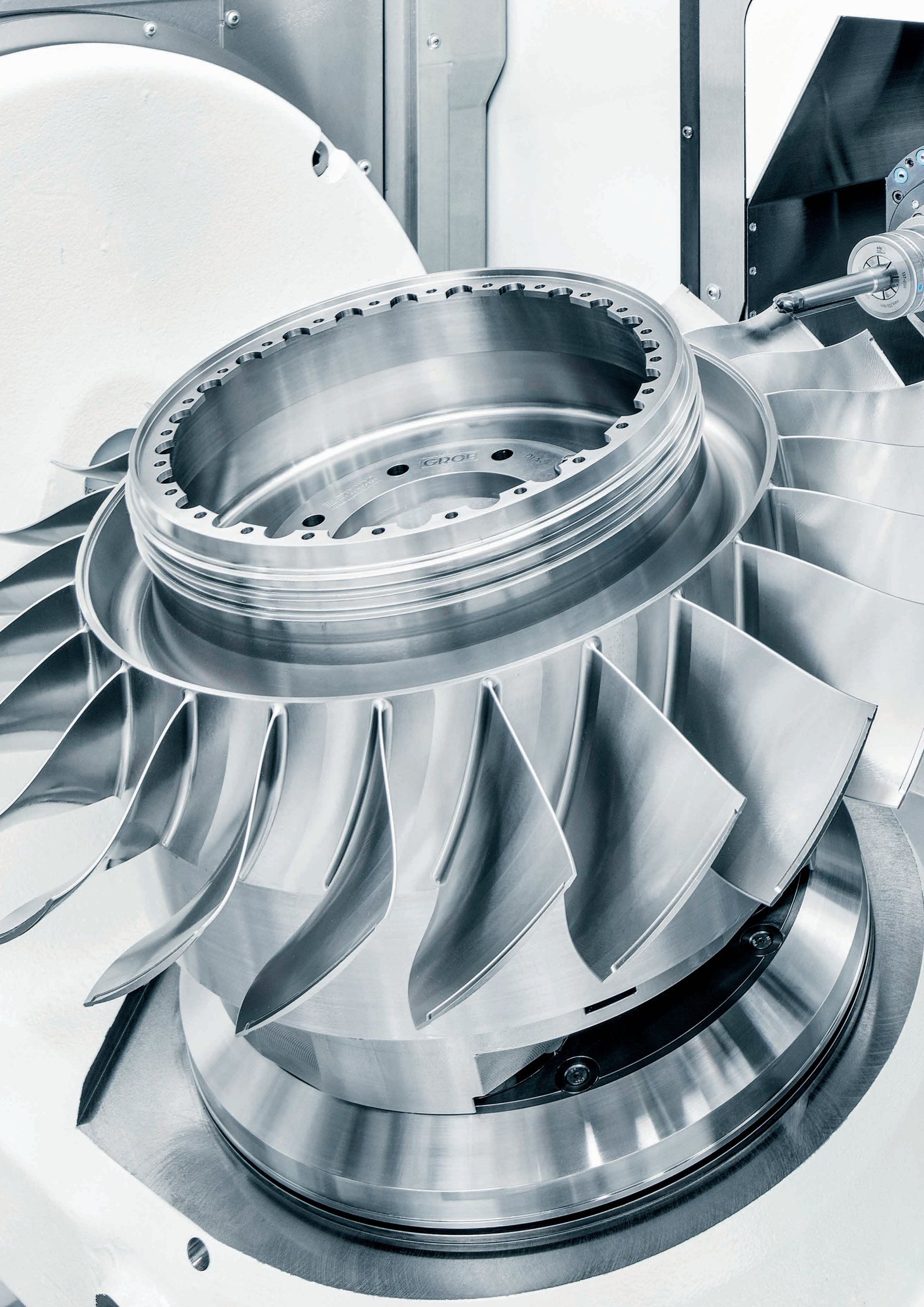


MECHANICAL ENGINEERING

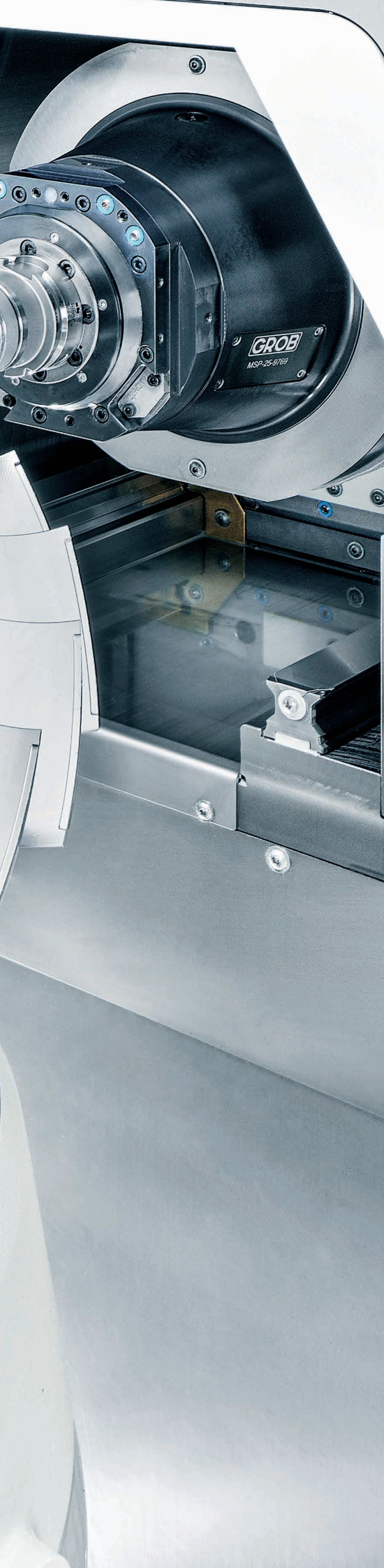
AEROSPACE











*Complete machining with  
one setup*

# UNIVERSAL MACHINING CENTERS FOR PERFECT MILL- TURN MACHINING.

Thanks to extensive configuration possibilities, the G350T, G550T and G750T universal mill-turn machining centers can be ideally matched to your requirements. GROB's mill-turn machining centers achieve complete machining of the part by milling and turning in a single clamping, thereby saving time, space and investment costs in your production facility.

- ✚ High productivity and process reliability
- ✚ Optimized availability and durability
- ✚ Excellent maintainability
- ✚ Extensive configuration possibilities
- ✚ Designed for automation solutions
- ✚ Also available as a pure milling machine in the sizes G350, G550, and G750



OUR PORTFOLIO.

#G350T #G550T #G750T

*Upside down is easy for us*

# OUR 5-AXIS MILL-TURN MACHINING CENTERS.

No matter whether aerospace, mechanical engineering, energy technology or die and mold industries – our 5-axis universal mill-turn machining centers cover a convincingly broad range of possible applications allowing for efficient milling of a wide variety of materials with just one setup. Moreover, the universal machining centers are designed for automation solutions and, depending on the customer's requirement, are also available as pure milling machines in sizes G350, G550 and G750.

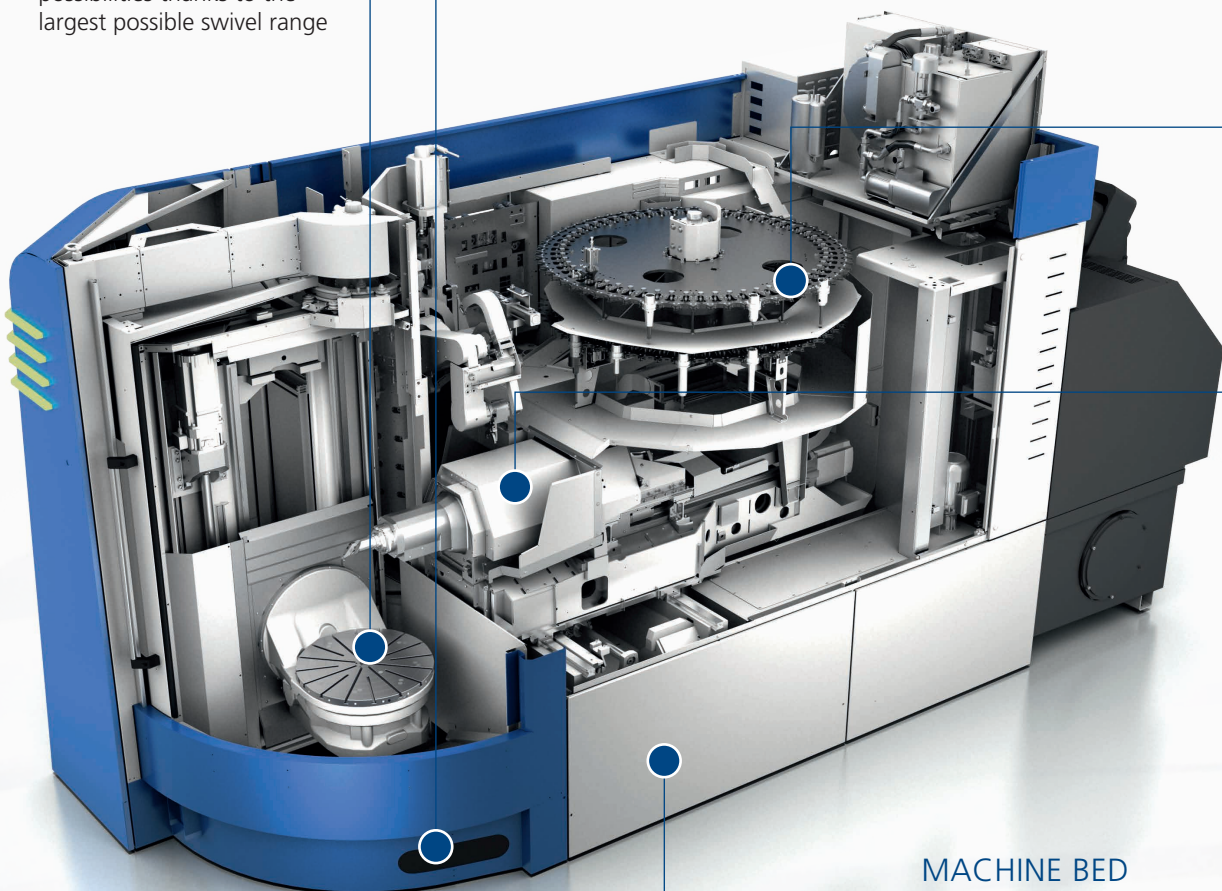
The drive concept is based on two symmetrically arranged ball screw drives and weight compensation for the G550T and G750T in the Y-axis. Torque motors in the A-axis and B-axis ensure dynamic and wear-free parts machining.

## MILL-TURNING TABLE

- ⊕ Almost limitless machining possibilities thanks to the largest possible swivel range

## CHIP DISPOSAL

- ⊕ Uninterrupted part machining with chip disposal by a slat band conveyor



## MACHINE BED

- ⊕ Intrinsically stiff welded design for optimum machine rigidity

Illustration of G350T may contain options



## OPTIONAL COOLING CONCEPT

- ⊕ Ensures exact temperature control of the part, tool, and machine, allowing precise part machining

## DISK-TYPE TOOL MAGAZINE

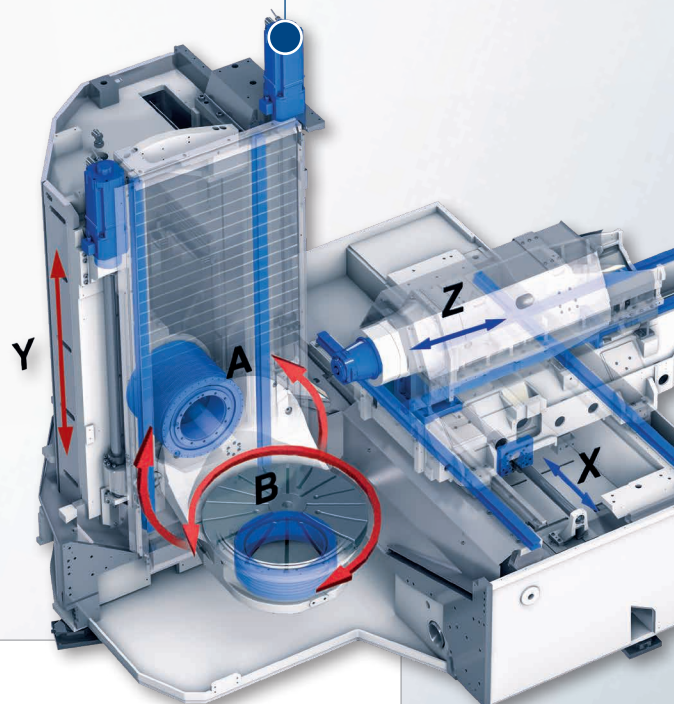
- ⊕ Fast chip-to-chip times thanks to the integrated disk-type tool magazine with double gripper technology

## HORIZONTAL MOTORIZED SPINDLE

- ⊕ For meeting the toughest cutting requirements

## UNIQUE AXIS CONCEPT

- ⊕ Optimally designed machining point (TCP) for extreme stability
- ⊕ Longest Z-travel path of this machine class
- ⊕ Extremely large swivel range of 230° in the A-axis
- ⊕ Largest possible part in the work area can be machined with maximum tool length

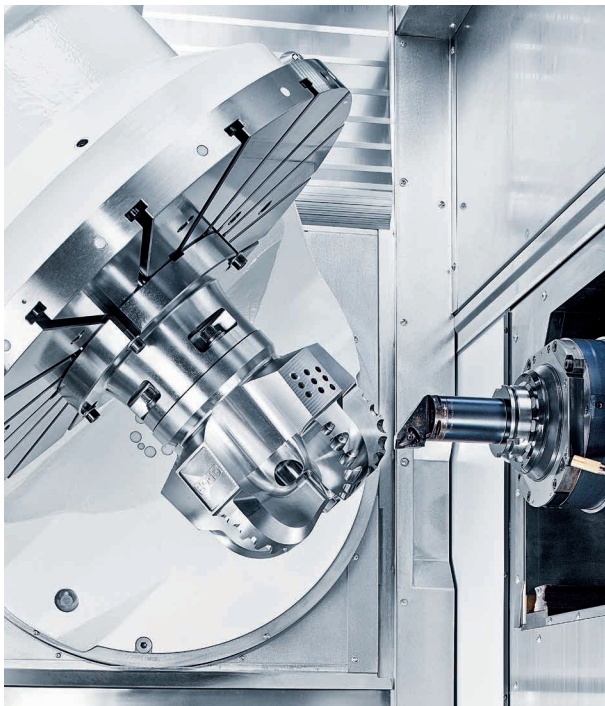


*Optimal chip fall*

# OVERHEAD MACHINING & ADDITIONAL ANGULAR POSITIONS.

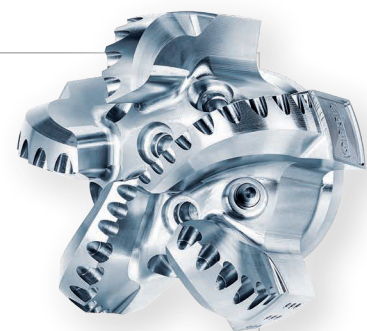
Due to the slim spindle design and the extremely large swivel range of the A-axis, the table can be positioned in various angular positions. This permits optimum accessibility to the part for the tool.

Thanks to the unique axis arrangement with horizontal spindle bearing, chips fall directly into the chip shaft and the part remains largely free of interfering chip accumulations.



## UNIQUE AXIS CONCEPT

- ⊕ Best tool life due to perfect chip fall
- ⊕ Simple cleaning of components ahead of the part/pallet change
- ⊕ No cutting fluid residue in the part
- ⊕ No heat input into the machine from chips left on part, clamping equipment, and machine table

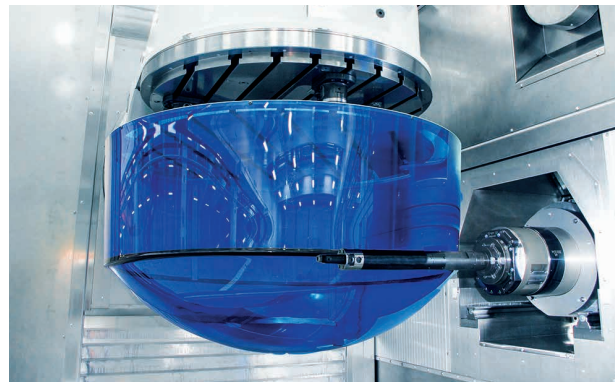
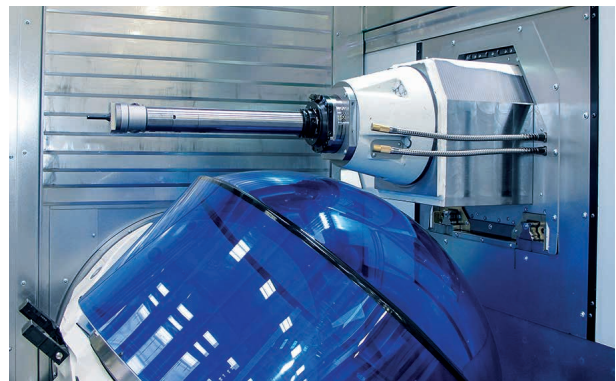
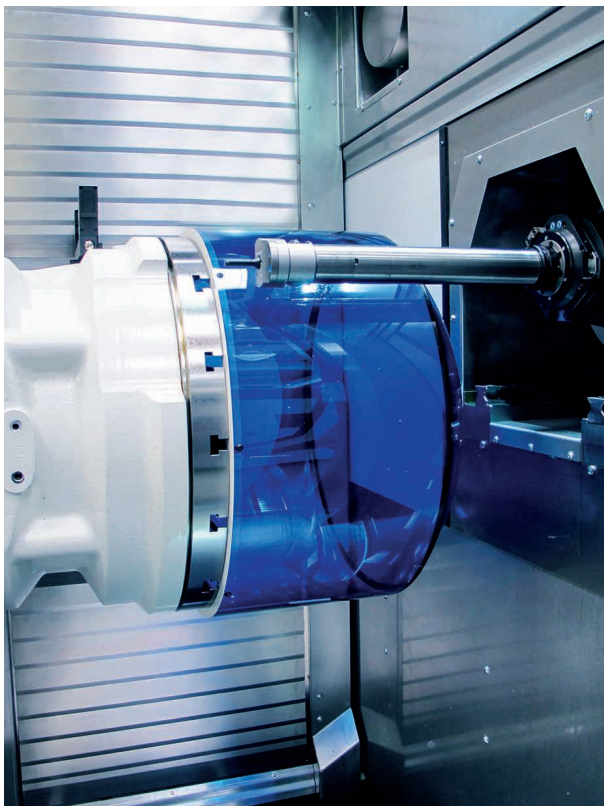




*Tunnel concept*

# PART MACHINING WITH MAXIMUM TOOL LENGTH.

Thanks to the special axis concept, the full tool length can be employed in any axis position, even with maximum part size. The "tunnel" concept allows the entire work area to be utilized, since the motorized spindle and tool can fully retract from the work area towards the rear.



## MAX. TOOL LENGTH ▶ [mm]

	G350T	G550T	G750T
Single disk-type tool magazine HSK-A/T63	365	465	—
Single disk-type tool magazine HSK-A/T100	—	500	—
Double disk-type tool magazine HSK-A/T63 (disk 1/disk 2/extra-long)	365/180/550*	465/280/700*	400/400 (650)/650*
Double disk-type tool magazine HSK-A/T100 (disk 1/disk 2/extra-long)	—	500/260/750*	450/650*
Triple disk-type tool magazine HSK-A/T63 (disk 1/disk 2/disk 3/extra-long)	—	—	400/270/400/650*

\* With restrictions in the work area

## Machine components

## MOTORIZED SPINDLES BY GROB.

## GROB SPINDLE DIAGNOSTICS (GSD) – OPTION

GROB Spindle Diagnostics is a system that automatically monitors the condition of the motorized spindle. It also monitors the vibrations that occur during machining.

- ⊕ System for automatic condition monitoring of the motorized spindle
- ⊕ Vibrations that occur are monitored during machining and switched off if they are exceeded
- ⊕ Service life of the motorized spindle extended through identification of critical operating states
- ⊕ Perfect process optimization is possible
- ⊕ Machine downtimes avoided through scheduled maintenance



## Spindle types – Availability at a glance!

SPINDLE TYPE ↔ MACHINE			
Tool interface for short hollow taper tools in acc. with ISO 12164-1	HSK-A/T63	HSK-A/T100	HSK-A/T100
Spindle type	27	16	28
Max. spindle torque at 100%/40% duty cycle [Nm]	159/ 206	258/ 340	225/ 261
Spindle bearing Ø at front bearing [mm]	80	100	100
Speed $n_{max}$ [rpm]	16,000	10,000	14,500
Max. drive power at 100%/40% duty cycle [kW]	25/ 32	50/ 66	50/ 58
Spindle bearing lubrication ▶ Lifetime lubrication	—	•	—
▶ Oil/air lubrication	•	—	•
<b>G350T</b>	—	—	—
<b>G550T</b>	•	○	○
<b>G750T</b>	•	○	○

• Standard    ○ Option    — not available

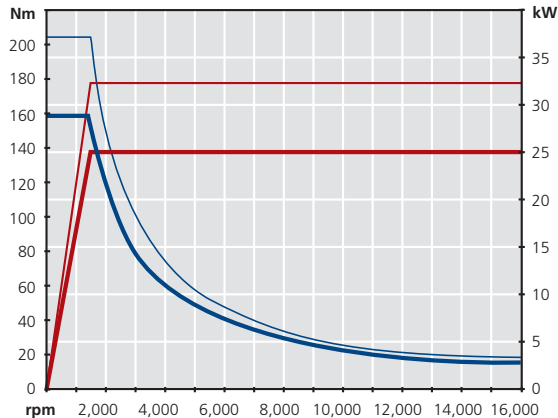


*Torque – rotational speed – output*

# MOTORIZED SPINDLE VERSIONS.

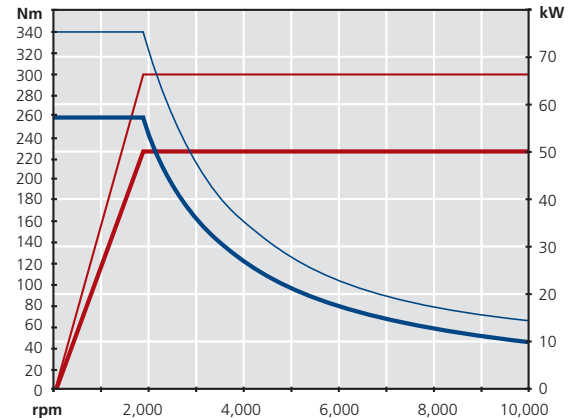
**TYPE 27:**

HSK-A/T63 ▶ Motorized spindle 206 Nm, 16,000 rpm



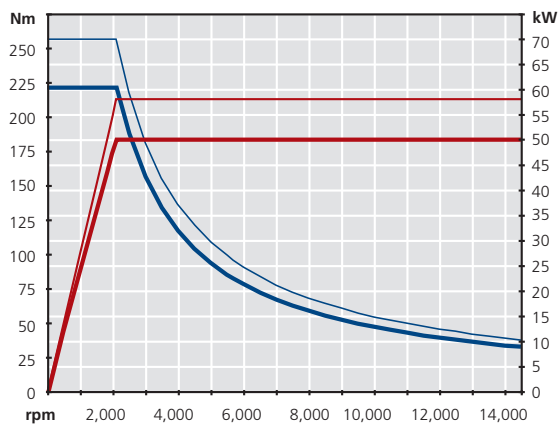
**TYPE 16:**

HSK-A/T100 ▶ Motorized spindle 340 Nm, 10,000 rpm



**TYPE 28:**

HSK-A/T100 ▶ Motorized spindle 261 Nm, 14,500 rpm



— Power S1: 100% duty cycle — Power S6: 40% duty cycle  
— Torque S1: 100% duty cycle — Torque S6: 40% duty cycle

## Spindle clamping

### CLAMPING DISK

- For mill-turn operations with HSK-A/T63, the spindle shaft is clamped by means of a clamping disk. This disk is permanently connected to the spindle shaft and forms the connection to the spindle housing by means of a hydraulic piston
- This allows the tool to be positioned anywhere



### HIRTH GEARING

- During mill-turning operations with the HSK-A/T100, the spindle shaft of the motorized spindle is automatically positively locked by an axially acting, frontal gearing (Hirth gearing)
- The positioning of the turning tools is possible in 2° steps



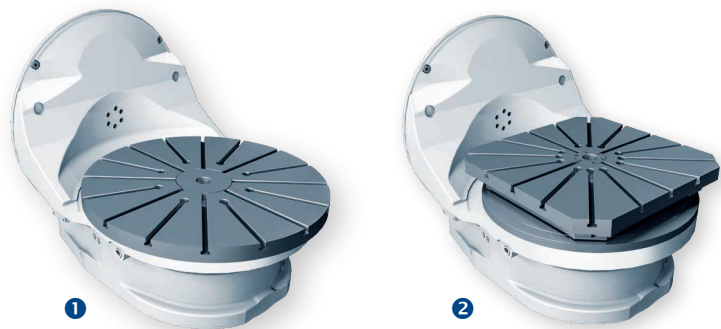
Table versions

# MILL-TURN TABLE A-/B-AXIS ARRANGEMENT.

## GENERAL TECHNICAL DATA OF THE ROTARY AXES A / B

	G350T	G550T	G750T
Swiveling angle A-axis [°]	-185/+45*	-185/+45*	-180/+45*
Max. rotational speed A-axis [rpm]	35	25	20
Type of drive for A-/B-axis	Torque motor	Torque motor	Torque motor
Angle of rotation B-axis [°]	n x 360	n x 360	n x 360
Max. rotational speed B-axis [rpm]	1,200	800	500
Max. torque B-axis at 100 % / 40 % duty cycle [Nm]	1,250 / 1,420	1,200 / 1,380	3,110 / 3,740
Max. holding torque B-axis with additional clamping [Nm]	1,500	2,500	6,000

\* Extended swivel range on request



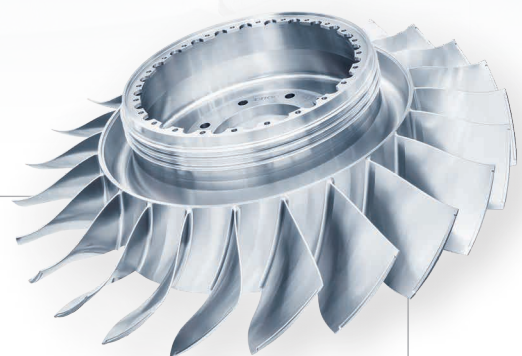
### 1 MILL-TURN TABLE WITH T-SLOTS ARRANGED IN A STAR SHAPE (standard)

	G350T	G550T	G750T
Aligning slot (quantity/width/quality)	2 x 14 H7	4 x 14 H7	4 x 18 H7
Clamping slot (quantity/width/quality)	14 x 14 H12	12 x 14 H12	12 x 18 H12
Table diameter [mm]	570	770	950
Interference diameter [mm]	620	900	1,280
Max. permissible loading weight incl. clamping fixture [kg]	350	750	1,500

### 2 MILL-TURN TABLE WITH PALLET CLAMPING SYSTEM (option)

	G350T	G550T	G750T
Pallet size [mm]	400 x 400	630 x 630	800 x 800
Max. pallet load [kg]	270	600	1,000





## Your benefits at a glance

- ✚ Versatile machining options with powerful mill-turn tables
- ✚ Significantly higher maximum speed compared to pure universal milling machining centers



*Versatile combinations*

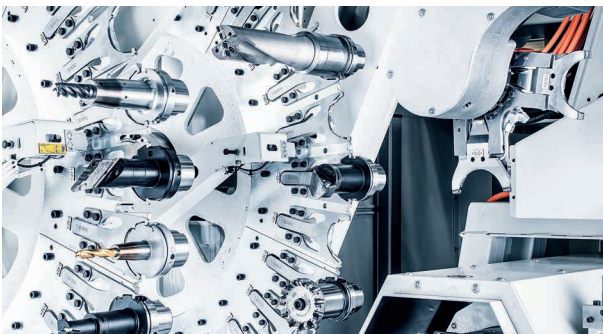
# TOOL MAGAZINES BY GROB.

GROB tool magazine technology is set apart by fast chip-to-chip times, a small space requirement, and optimized accessibility. You will also profit from fast tool change thanks to a highly dynamic tool changer arm with a swiveling double gripper, loading and unloading in parallel to machining operation, and permanent access to the tool magazine disk.



## SINGLE DISK-TYPE TOOL MAGAZINE

- ⊕ Horizontal magazine disk arrangement on G350T and G550T



## DOUBLE DISK-TYPE TOOL MAGAZINE

- ⊕ Horizontally stacked magazine disks on G350T and G550T
- ⊕ Vertically adjacent magazine disks with G750T

## ADDITIONAL TOOL MAGAZINE TM (option)

- ⊕ Increases the basic machine's tool capacity with block-wise setup up to:
  - ▶ Six HSK-A/T63 tools for TM200, TM308 and TM373
  - ▶ Five HSK-A/T100 tools for TM180 and TM250
- ⊕ The additional tool magazine can be equipped with tools during the machining operation
- ⊕ Tool provision in parallel with machining
- ⊕ Tool and magazine management through the control system of the machine





## Number of tool pockets

# G350T / G550T / G750T

### G350T ▶ BASIC MACHINE ◀▶ ADDITIONAL TOOL MAGAZINE TM

Motorized spindle	Tool interface	Number of tool pockets <sup>(1)</sup>	Total number of tools of the basic machine and the TM		
Single disk-type tool magazine			TM200	TM308	TM373
For all spindle types	HSK-A/T63	60	251	359	424
Double disk-type tool magazine			TM200	TM308	TM373
For all spindle types	HSK-A/T63	117	311	419	484
	HSK-A/T63	105 <sup>(2)</sup>	293	401	466

### G550T ▶ BASIC MACHINE ◀▶ ADDITIONAL TOOL MAGAZINE TM

Single disk-type tool magazine			TM200	TM308	TM373	TM180	TM250
For all spindle types	HSK-A/T63	70	261	369	434	—	—
	HSK-A/T100	40	—	—	—	211	281
Double disk-type tool magazine			TM200	TM308	TM373	TM180	TM250
For all spindle types	HSK-A/T63	137	331	439	504	—	—
	HSK-A/T63	123 <sup>(2)</sup>	317	425	490	—	—
	HSK-A/T100	77	—	—	—	251	321
	HSK-A/T100	69 <sup>(2)</sup>	—	—	—	243	313

### G750T ▶ BASIC MACHINE ◀▶ ADDITIONAL TOOL MAGAZINE TM

Double disk-type tool magazine			TM200	TM308	TM373	TM180	TM250
For all spindle types	HSK-A/T63	117	311	419	484	—	—
	HSK-A/T100	65	—	—	—	241	312
Triple disk-type tool magazine			TM200	TM308	TM373	TM180	TM250
For all spindle types	HSK-A/T63	177	371	479	544	—	—
	HSK-A/T63	167	361	469	534	—	—

<sup>(1)</sup> Depends on machine configuration

<sup>(2)</sup> Ability to store oversize tools across both magazine disks with double assignment

GROB<sup>4</sup>Pilot

# YOUR POWERFUL MACHINE CONTROL PANEL.

The innovative GROB<sup>4</sup>Pilot machine control panel offers the machine operator a convenient working environment on the machine through a multi-functional user interface. The entire production process – from the CAD model to the NC simulation – is now digitally mapped on the GROB<sup>4</sup>Pilot control system itself.

- ⊕ Enhanced user comfort thanks to simplified and intuitive machine operation
- ⊕ Access to the GROB-NET<sup>4</sup>Industry platform
- ⊕ Expanded applications for increased efficiency
- ⊕ Paperless production is possible

## OPTIMIZED KEYBOARD

- ⊕ For easy input

## 3D-SPACEMOUSE® (option)

- ⊕ For controlling CAD applications

### AVAILABLE CNC CONTROL PROVIDERS FOR GROB<sup>4</sup>PILOT

	SIEMENS 840D sl	HEIDENHAIN TNC 640	SIEMENS ONE
<b>G350T</b>	•	•	•
<b>G550T</b>	•	•	•
<b>G750T</b>	•	•	•

The implementation of GROB<sup>4</sup>Pilot can differ between SIEMENS and HEIDENHAIN



## FLEXIBLE DISPLAY LAYOUT

- ⊕ Free division into up to three apps

## 24" MULTI-TOUCH DISPLAY

- ⊕ For intuitive operation

## 2x POWERRIDE

- ⊕ Convenient operation thanks to multifunctional assignment

## TRACKBALL

- ⊕ For alternative screen use in addition to the multi-touch function



Example illustration

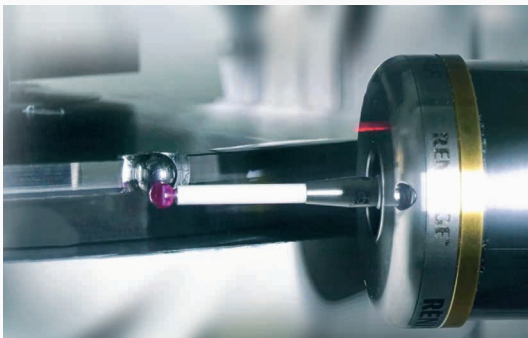
*Perfect accuracy – automatic – any time*

## SOFTWARE OPTIONS.

GROB has set the standard for machine calibration accuracy with the GROB swivel axis calibration (GSC). With the new GSC Advanced option, the machine calibrates itself fully automatically, permanently maintaining phenomenal accuracy.

### GSC CLASSIC (SWIVEL AXIS CALIBRATION)

- + Complete package for calibrating machine geometry, managing accuracy, and automating warm-up processes
- + Calibrates swivel axis errors and the perpendicularity of the main axes
- + Fast determination of machine accuracy by means of indicator measurement
- + Detection of sensing errors prevents miscalibration (only with SIEMENS control system and high-precision touch probe, e.g. RMP600)
- + Measurement of space accuracy using 5X check
- + Application via user-guided dialogs



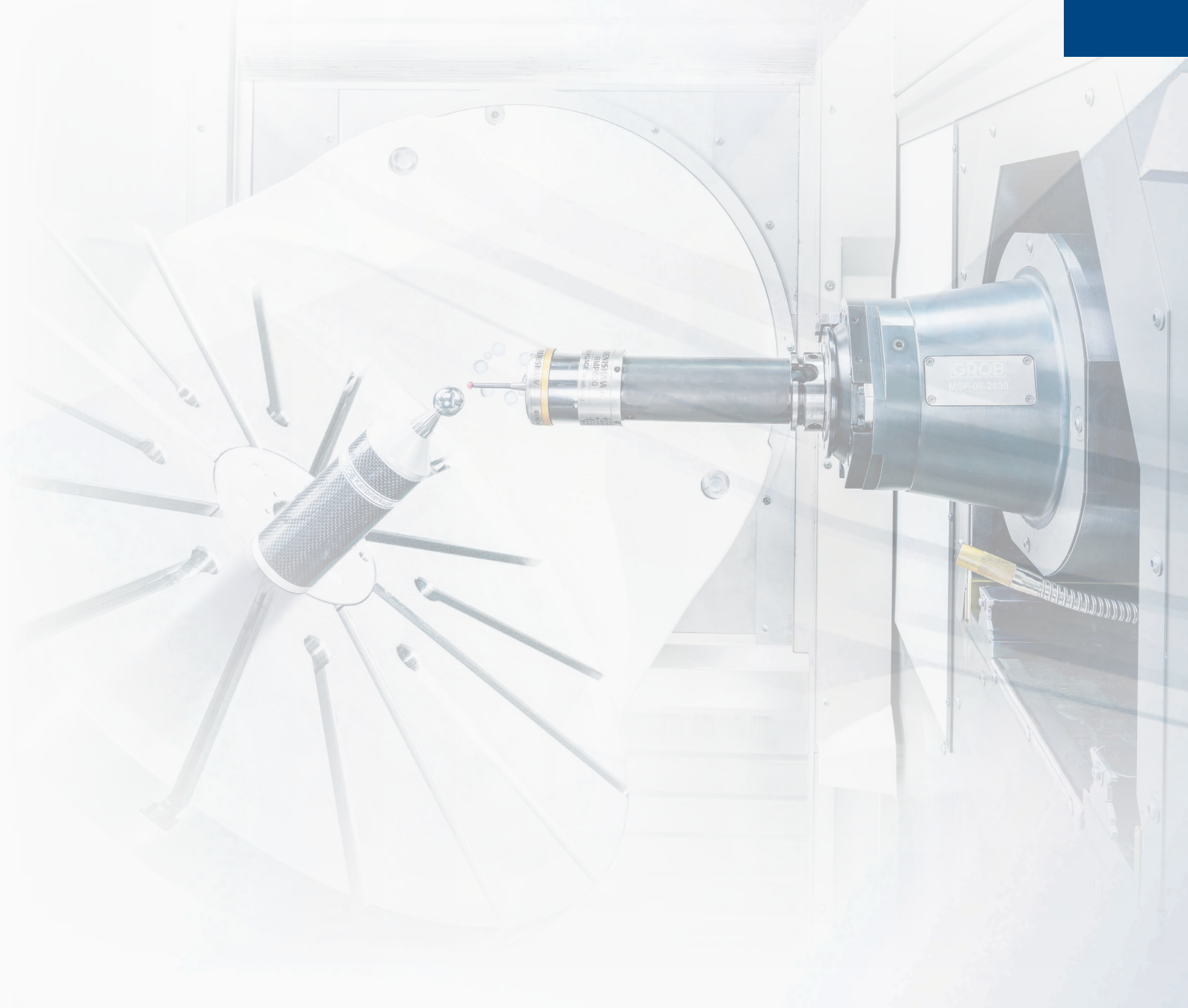
### GSC ADVANCED (option)

- + Expansion of GSC Classic to make machine calibration even more intuitive and take it to the next level
- + The machine recognizes the need for calibration fully automatically and uses the non-removable calibration sphere for it (without operator interaction e.g. during pallet change)

### ENERGY EFFICIENCY PACKAGE

- + For efficient use of energy by reducing the power consumption of 5-axis universal machining centers with a SIEMENS control system
- + Shut-down strategies for machine cooling unit, chip conveyor, and various fans
- + Optimized control strategy for motorized spindle and axis drives
- + Timed machine shutdown





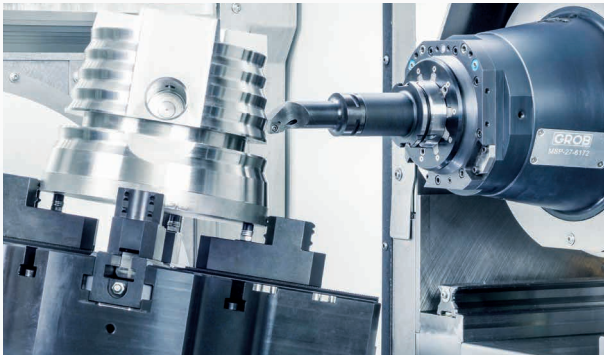
## GROB KINEMATICS SET

- + All measuring equipment needed for calibrating the machine or touch probe are included in this case. The parts are only used during calibration of the touch probe or machine. Therefore, only one set is sufficient for all machines.
- + Two carbon magnetic bases
- + Two high-precision calibration spheres with unique test IDs
- + Mounting material for the bases
- + Parallel gauge block
- + Calibration ring
- + Lever-type dial indicator



## Interpolation turning & gearing cycles

# SOFTWARE OPTIONS.



### INTERPOLATION TURNING PLUS

- ⊕ As a pure software solution, it enables any turning operations on GROB universal machining centers – including turning operations that are not coaxial to the B-axis
- ⊕ The software solution simulates a diameter axis (transverse slide) by means of simultaneous interpolation of the X-axis, Y-axis, and motorized spindle
- ⊕ Programming and handling correspond to that of a CNC turning machine and can be combined with a spindle operation

### GROB TRAORI TURNING

- ⊕ Simultaneous interpolation of the GROB universal machining center's linear and rotary axes
- ⊕ Dynamic alignment of the tool cutting edge to the contour of the turned part in consideration of tool length and tool radius
- ⊕ Easy to understand and very user-friendly turning cycle
- ⊕ Significantly longer tool life due to more efficient usage of the tool cutting edge as well as the usage of short tools in case of internal and relief cut turning



### WAY MEASUREMENT SOFTWARE

- ⊕ The rough parts are positioned as on measuring machines – the clamping points can be freely selected without rough part alignment
- ⊕ WAY allows for probing geometric elements with any number of points and fitting them in with Best Fit. The additional sensing points also make it possible to determine shape accuracy (e. g. roundness)
- ⊕ Rough part deviations are identified directly in the machine and compensated for during machining



*Availability at a glance*

## CNC CONTROL SYSTEM (options).

	SIEMENS 840D sl	SIEMENS ONE	HEIDENHAIN TNC 640
Swivel axis calibration GSC	•	•	•
Swivel axis calibration GSC Advanced	•	•	•
Energy Efficiency Package EEP	•	•	—
Interpolation turning PLUS	•	•	—
Hobbing (G_GEAR_HOB)	•	•	—
Gear skiving (G_GSK)	•	•	—
WAY Coordinate measurement software	•	•	—
WAY Light Coordinate measurement software	•	•	—
Speed Feed Tools (G_SFT)	•	•	—
Extended tool change (G_UTL_TC)	•	•	—
Read & write Matrix code (G_UTL_MC)	•	•	—
Setup table height (G_GSC_TTH)	•	•	—
Setup touch probe (G_OCTC)(G_UTL_MC)	•	•	—
Tool sorting close to the spindle (SNS)	•	•	—
A / C Kinematics change	—	—	•

Maximum part size  
Footprint

# G350T

A- / B-axis (max.) [mm]	B-axis (max.) [mm] (for A-axis 0°)
Basic machine	

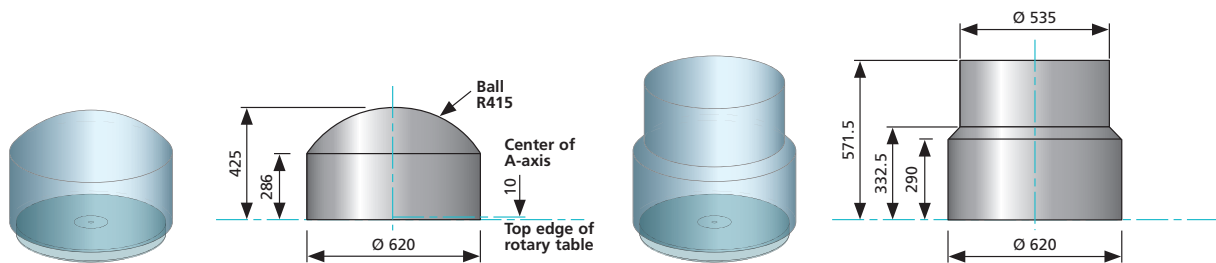
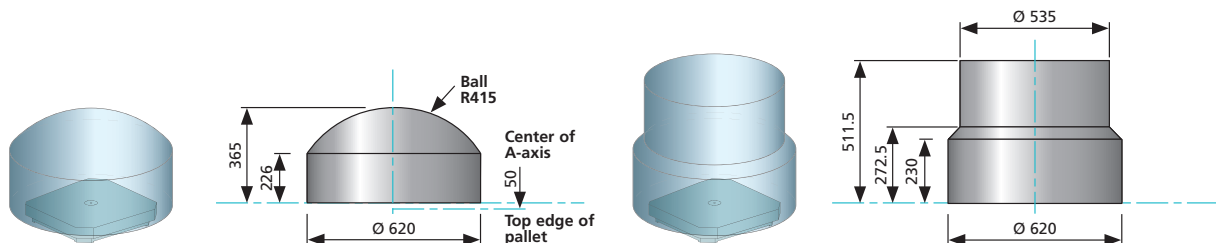


Table diameter Ø 570

## Basic machine with pallet clamping system (without pallet changer, incl. design for PSS-R)

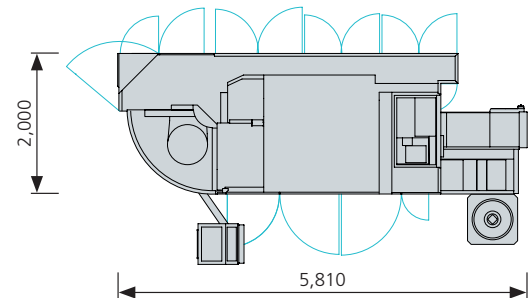
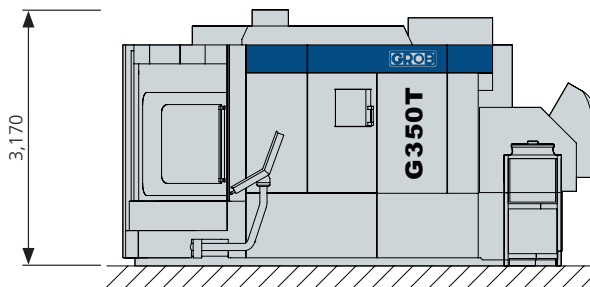


Pallet size □400x400

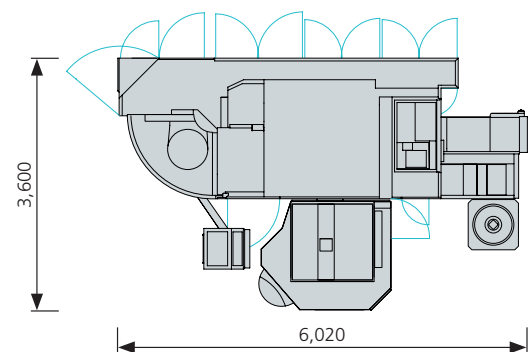
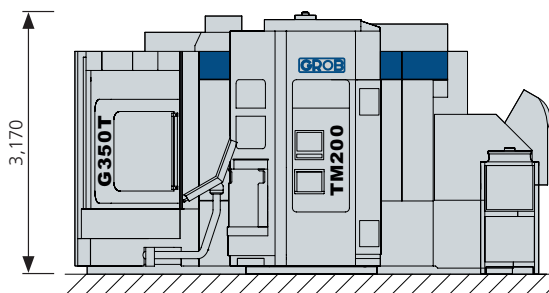


Side view / top view  
max. [mm]

Basic machine



Basic machine with pallet changer



Dimension values [mm] not taking into account preventive maintenance and operating areas or emulsion and chip disposal

Illustrations may contain options

Maximum part size  
Footprint

# G550T

A- / B-axis (max.) [mm]	B-axis (max.) [mm] (for A-axis 0°)
Basic machine	

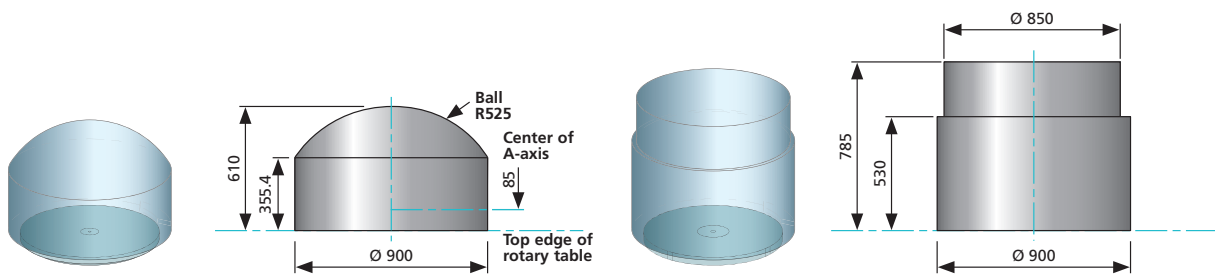
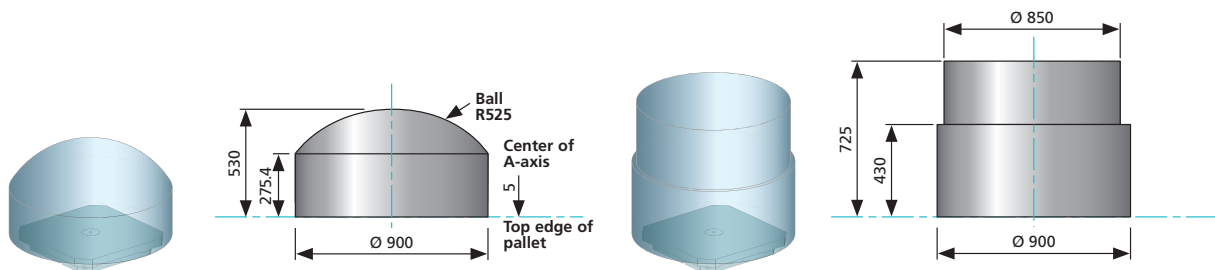


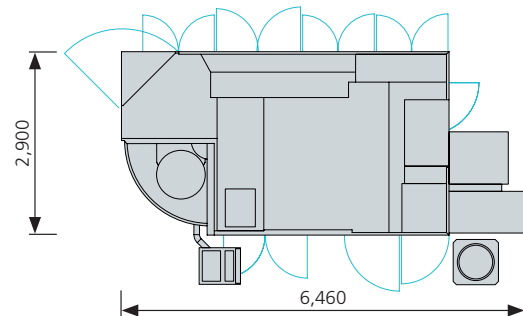
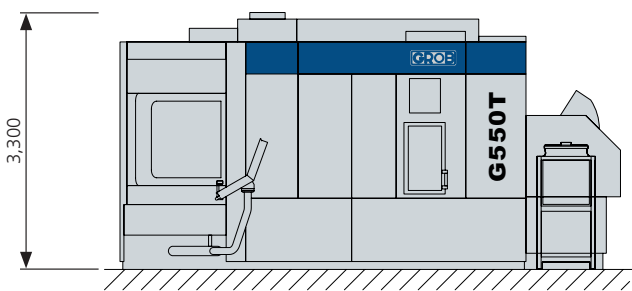
Table diameter  $\varnothing 770$

## Basic machine with pallet clamping system (without pallet changer, incl. design for PSS-R)

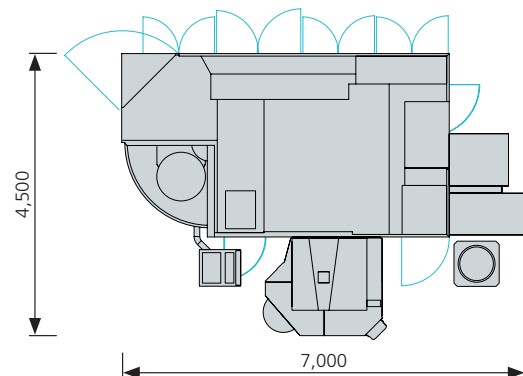
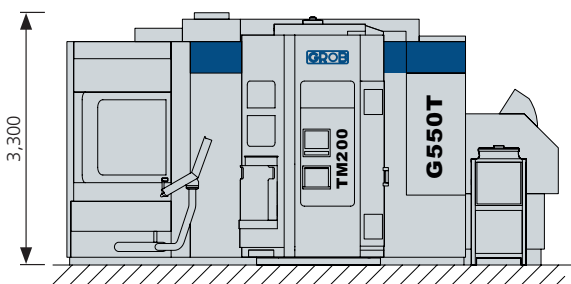


Pallet size  $\square 630 \times 630$





**Basic machine with pallet changer**



Dimension values [mm] not taking into account preventive maintenance and operating areas or emulsion and chip disposal

Illustrations may contain options

Maximum part size  
Footprint

# G750T

A- / B-axis (max.) [mm]	B-axis (max.) [mm] (for A-axis 0°)
Basic machine	

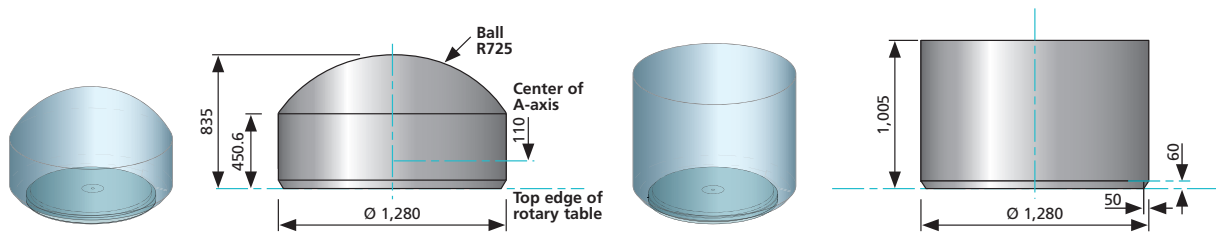
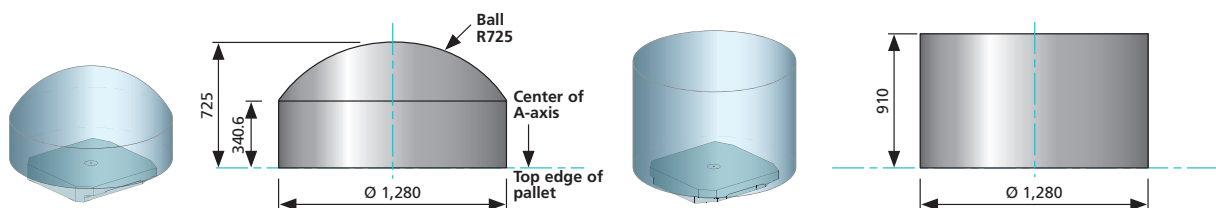
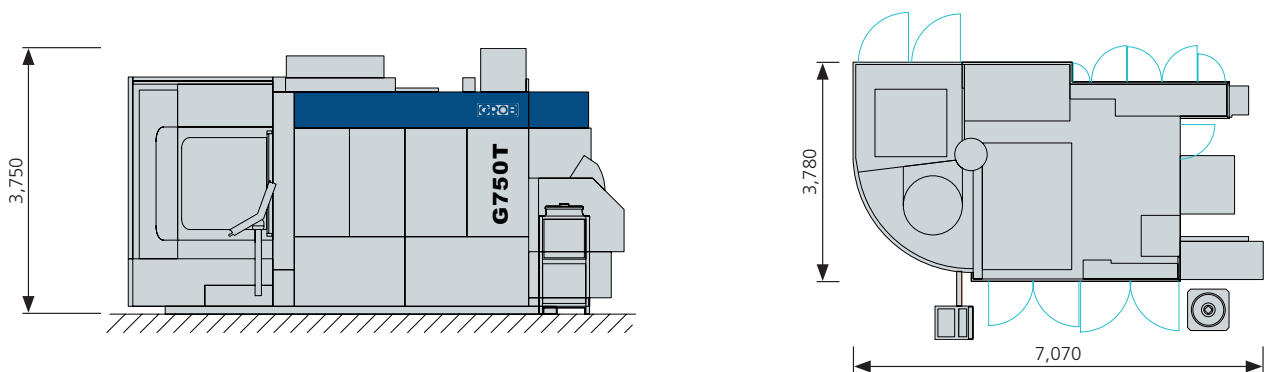


Table diameter Ø950

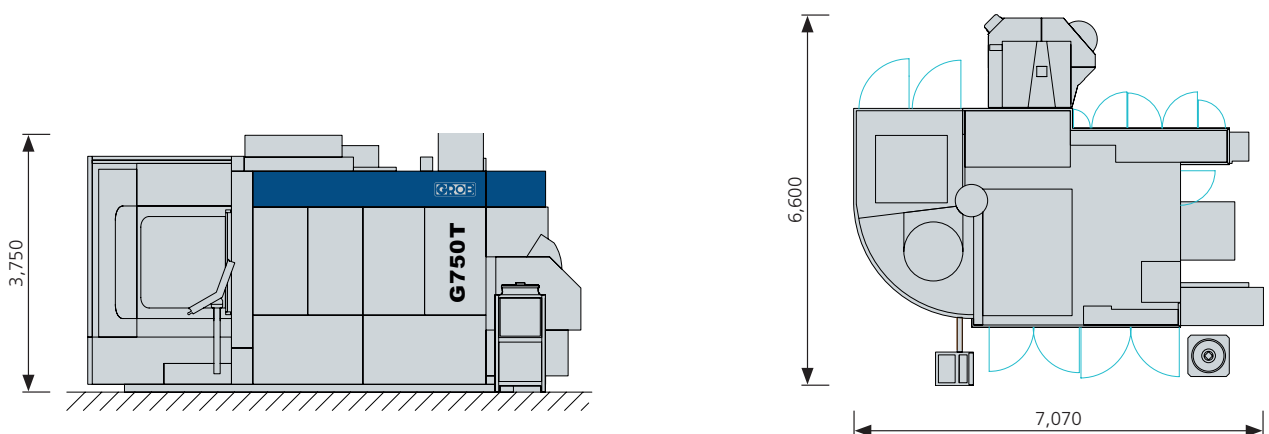
## Basic machine with pallet clamping system (without pallet changer, incl. design for PSS-R)



Pallet size □800x800



Basic machine with pallet changer



Dimension values [mm] not taking into account preventive maintenance and operating areas or emulsion and chip disposal

Illustrations may contain options



## Technical data – overview

# G350T/G550T/G750T

MACHINE TYPE		G350T		
SLIDE				
Working travels in X-/Y-/Z-axis [mm]		600/855/750		
Max. speeds in X-/Y-/Z-axis [m/min]		70/45/90		
Max. accelerations in X-/Y-/Z-axis [m/s²]		4.5/4/6.5		
Max. feed forces in X-/Y-/Z-axis [kN]		8/8/8		
Positioning accuracy* in X-/Y-/Z-axis [mm]		0.006		
Repeat precision of positioning* in X-/Y-/Z-axis [mm]		<0.0025		
MAIN SPINDLE				
Drive: Standard	Tool interface for short hollow taper tools in acc. with ISO 12164-3		HSK-A/T63	
	Diameter at front bearing of spindle bearing [mm]		80	
	Speed n <sub>max</sub> [rpm]		16,000	
	Max. drive power at 100 % /40 % duty cycle [kW]		25/32	
	Max. spindle torque at 100 %/40 % duty cycle [Nm]		159/206	
	Spindle shaft arrest [Nm] <sup>(1)</sup>		300	
	Chip-to-chip time t <sub>i</sub> according to VDI 2852 [s] SIEMENS control system and tool changer arm (dynamic package/standard)		2.7	
DISK-TYPE TOOL MAGAZINE		Single disk-type tool magazine	Double disk-type tool magazine	
TOOL INTERFACE		HSK-A/ T63	HSK-A/ T63	HSK-A/ T63
Number of tool pockets		60	117	105
Max. tool length [mm]				
▶ Horizontal disk arrangement (disk 1 / disk 2 / disk 3 extra-long)		365	365/180	365/180/550 <sup>(2)</sup>
▶ Vertical disk arrangement (disk 1 / disk 2 / disk 3 extra-long)		—	—	—
Max. tool diameter [mm]				
▶ No diameter restrictions for adjacent pockets		70	70	70
▶ Diameter restrictions for adjacent pockets		170	170	170
Max. tool weight [kg]		8	8	8
Max. tilt moment around gripper groove [Nm]		12	12	12
MILL-TURN TABLE				
Table diameter [mm]		570		
Max. table load [kg] (with/without pallet)		350/270		
Interference diameter [mm]		620		
B-axis speed n <sub>max</sub> [rpm] (with intelligent imbalance detection)		1,200		
Max. B-axis torque at 100 % /40 % duty cycle [Nm]		1,250/1,420		
Holding torque with additional clamping [Nm]		1,500		
CONNECTION RATINGS				
Power requirements at 3 AC 400 V/50 Hz [kVA]		at least 42		
Compressed air [bar]		5		
WEIGHT (approx.)				
Max. total weight [kg] (incl. fixture/part/tool/COL)		15,500		
PROCESS STAGES				
Pallet size on basic machine with pallet clamping system [mm]		400x400		
Tool magazine expansion		TM200; TM308; TM373 (HSK-A/T63)		

<sup>(1)</sup>For turning operation

<sup>(2)</sup>With restrictions in the work area

	G550T						G750T				
	800/1,020/970						1,000/1,100/1,175				
	65/50/80						60/50/75				
	6/4.5/7.5						4.0/3.3/6.5				
	8/8/10						8/8/10				
	0.006						0.006				
	<0.0025						<0.003				
	HSK-A/T63	HSK-A/T100		HSK-A/T100		HSK-A/T63		HSK-A/T100		HSK-A/T100	
	80	100		100		80		100		100	
	16,000	14,500		10,000		16,000		10,000		14,500	
	25/32	50/58		50/66		25/32		50/66		50/58	
	159/206	225/261		258/340		159/206		258/340		225/261	
	300	1,200		1,200		300		1,200		1,200	
	3.0	3.7		3.7		3.8		3.8		3.8	
	Single disk-type tool magazine		Double disk-type tool magazine				Double disk-type tool magazine			Triple disk-type tool magazine	
	HSK-A/T63	HSK-A/T100	HSK-A/T63	HSK-A/T100		HSK-A/T63	HSK-A/T63	HSK-A/T100	HSK-A/T63	HSK-A/T63	
	70	40	137	123	77	69	117	117	65	177	167
	465	500	465/280	465/280/700 <sup>(2)</sup>	500/260	500/260/750 <sup>(2)</sup>	—	—	—	—	—
	—	—	—	—	—	—	400/400	400/650 <sup>(2)</sup>	450/650 <sup>(2)</sup>	400/270/400	400/270/400/650 <sup>(2)</sup>
	70	118	70	70	118	118	68	68	115	68	68
	170	260	170	170	260	260	170	170	260	170	170
	8	22	8	8	22	22	12	12	35	12	12
	12	40	12	12	40	40	12	12	40	12	12
	770						950				
	750/600						1,500/1,000				
	900						1,280				
	800						500				
	1,200/1,380						3,110/3,740				
	2,500						6,000				
	at least 42						at least 42				
	5						5				
	24,800						34,500				
	630x630						800x800				
	TM200; TM308; TM373 (HSK-A/T63)		TM180; TM250 (HSK-A/T100)				TM200; TM308; TM373 (HSK-A/T63)			TM180; TM250 HSK-A/T100	

G350T, G550T and G750T also available as milling machining centers  
Subject to technical changes without notice; \* according to ISO230-2:2014







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#PSS-R #PSS-T #PSS-L #GRC  
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#turnkeymanufacturinglines

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- Optimum entry into automated and highly efficient production

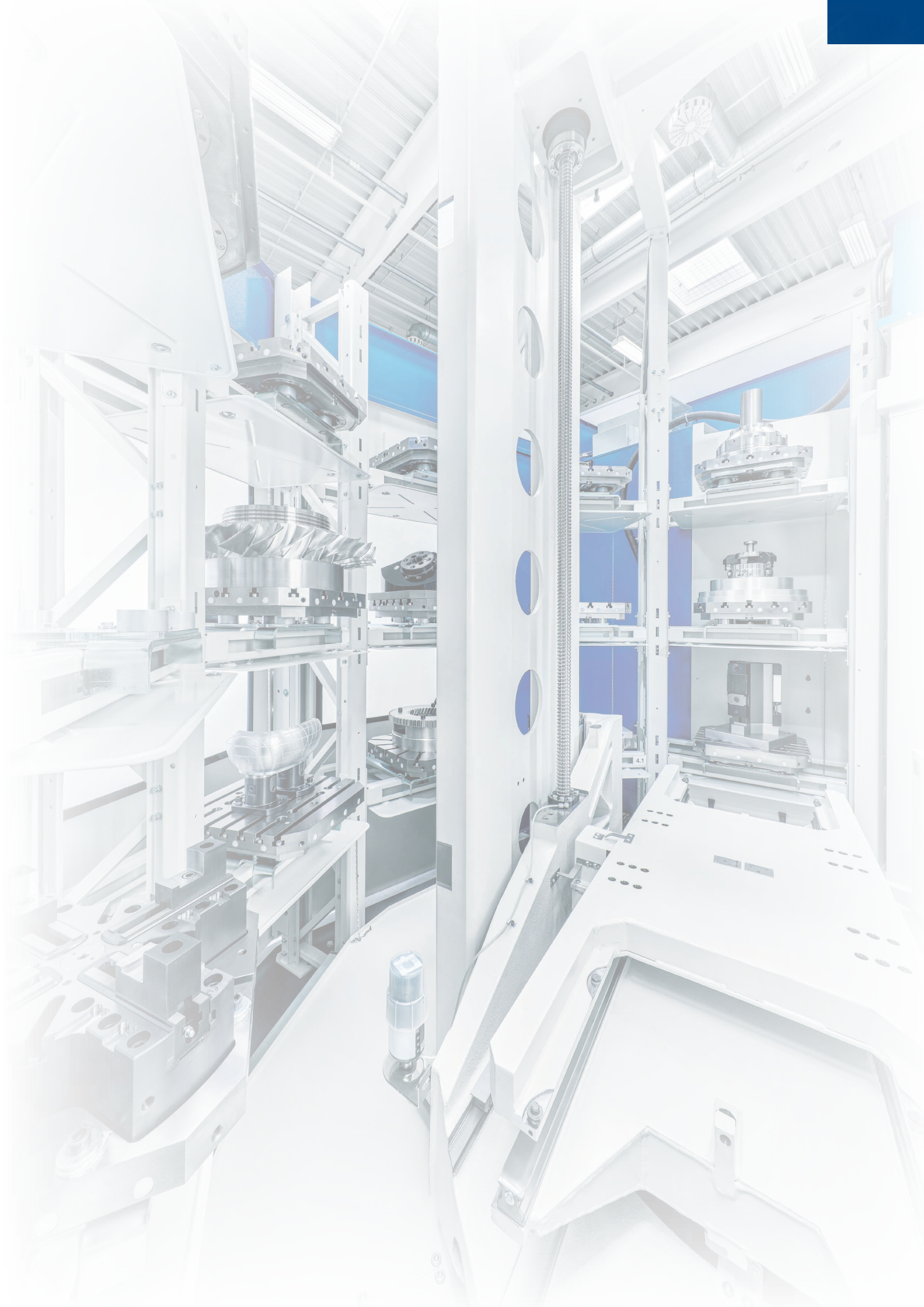


### LINEAR PALLET STORAGE SYSTEM (PSS-L)

- Highly automated, flexible manufacturing line for a wide variety of part machining processes













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- ✦ GROB<sup>4</sup>COACH – programming, simulation and training



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