## #youraccesstosuccess



# 5-AXIS UNIVERSAL 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.



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.



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



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



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



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.



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.

























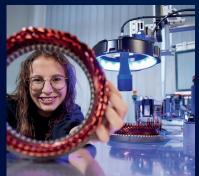
















5-axis universal machining centers by GROB

# THE RIGHT CONCEPT FOR YOUR INDUSTRY.

#### 5-AXIS UNIVERSAL MACHINING CENTERS.

Machine concept

Machine components

Machine characteristics

Technical data

**AUTOMATION SOLUTIONS.** 

DIGITALIZATION.

SERVICE.











# Smart entry into GROB technology THE ACCESS SERIES.

Short payback period with best machining quality: No matter whether mechanical engineering or automotive – our basic models G350a and G550a cover a convincingly broad range of possible applications. The access-series meets the broadest range of part requirements, offering customers an exclusive entry into the unique GROB technology.

- High productivity and process reliability
- Optimized availability and durability
- Excellent maintainability
- Designed for automation solutions



OUR PORTFOLIO. #G350a #G550a

## Smart and cost-conscious entry

# THE BASIC MODELS G350a AND G550a.

The option of modular expansion with automation packages makes the G350a and G550a base models the perfect solution for your efficient and cost-conscious production facility. Three linear axes and two rotary axes permit 5-sided machining.

The drive concept is based on a ball screw and for the G550a on a weight compensation in the Y-axis. A torque motor in the B-axis ensures dynamic and wear-free machining of parts.

#### **ERGONOMIC AND SAFE**

- Perfect view of the machining operation through a laminated glass safety screen
- Wide-opening work area doors for optimized accessibility and crane loading

## UNIQUE OVERHEAD MACHINING

• With excellent chip fall and reduced heat input into the part



• Choice between SIEMENS and HEIDENHAIN machine control systems

Illustration of G350a may contain options

#### **DISK-TYPE TOOL MAGAZINE**

• Fast chip-to-chip times thanks to the integrated disktype tool magazine with double gripper technology

#### **EFFICIENT MACHINE COOLING**

• Active temperature control of machine components

#### STABLE SPINDLE AXIS

 Special design for consistent stability in every machining position

## UNIQUE AXIS CONCEPT

- Optimally designed machining point (TCP) for especially high cutting volume
- 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]		
	G350a	<b>G550</b> a
Single disk-type tool magazine HSK-A63	365	465
Compact double disk-type tool magazine HSK-A63 (outside/inside)	365/200	465/200
Single disk-type tool magazine HSK-A100	_	500
Compact double disk-type tool magazine HSK-A100 (outside/inside)	_	500/200

## 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

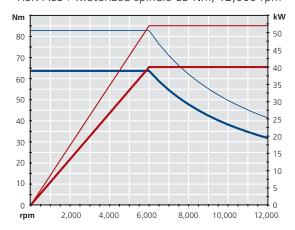
## **Spindle types** – Availability at a glance!

SPINDLE TYPE +> MACHINE						
<b>Tool interface</b> for short hollow taper tools in acc. with ISO 12164-1	HSK- A63	HSK- A63	HSK- A63	HSK- A100	HSK- A100	HSK- A100
Spindle type	5	9/25	1	7	3	29
Max. spindle torque at 100 %/40 % duty cycle [Nm]	63.7 <i>/</i> 82.8	159/ 206	34.6/ 46.6	470/ 575	262/ 340	226/ 265
Spindle bearing Ø at front bearing [mm]	70	80	70	110	100	100
Speed n <sub>max</sub> [rpm]	12,000	16,000	18,000	9,000	10,000	13,000
Max. drive power at 100 %/40 % duty cycle [kW]	40/ 52	25/ 32	29/ 39	54/ 65	20/ 26	64/ 75
Spindle bearing lubrication ▶ Lifetime lubrication	•	•	•	•	•	_
▶ Oil/air lubrication	_	0	_	_	_	•
G350a	•	0	0	_	_	_
G550a	•	0	0	0	0	0

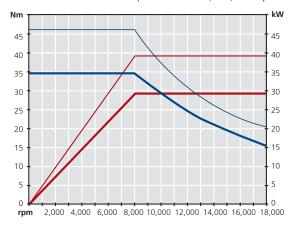
## Torque - rotational speed - output

## MOTORIZED SPINDLE VERSIONS.

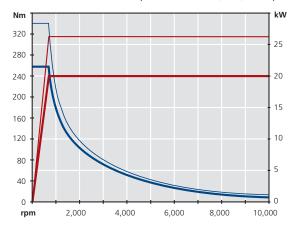
**TYPE 5:** HSK-A63 ▶ Motorized spindle 83 Nm, 12,000 rpm



**TYPE 1:** HSK-A63 ➤ Motorized spindle 47 Nm, 18,000 rpm

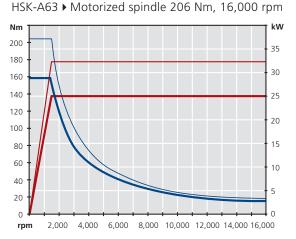


TYPE 3: HSK-A100 ▶ Motorized spindle 340 Nm, 10,000 rpm

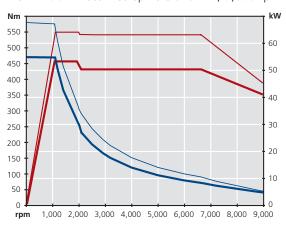


— Power S1: 100% duty cycle — Power S6: 40% duty cycle

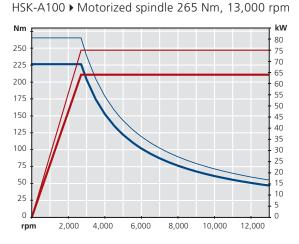
TYPE 9/25:



**TYPE 7:** HSK-A100 ▶ Motorized spindle 575 Nm, 9,000 rpm



TYPE 29:



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

## Table versions

## TILTING ROTARY TABLE, A-/B-AXIS ARRANGEMENT.

GENERAL TECHNICAL DATA OF THE ROTARY AXES A/B						
	G350a	<b>G550</b> a				
Swiveling angle A-axis [°]	-185/+45	-185/+45				
Max. rotational speed A-axis [rpm]	12	12				
Type of drive for A-/B-axis	Worm gear/torque motor	Worm gear/torque motor				
Angle of rotation B-axis [°]	nx360	nx360				
Max. rotational speed B-axis [rpm]	50	50				





● TILTING ROTARY TABLE WITH T-SLOTS ARRANGED IN PARALLEL (standard)						
	G350a	<b>G550</b> a				
Aligning slot (quantity/width/quality) Clamping slot (quantity/width/quality)	1 x 14 H7 4 x 14 H12	1 x 14 H7 6 x 14 H12				
Table diameter [mm]	570	770				
Interference diameter [mm]*	720	900				
Max. permissible loading weight incl. clamping fixture [kg]	400	700				

2 TILTING ROTARY TABLE WITH PALLET CLAMPING SYSTEM (option)						
	G350a	G550a				
Pallet size [mm]	400 x 400	630x630				
Max. pallet load [kg]	340	600				

<sup>\*</sup> Maximum part size with restrictions on machines with pallet changer

## 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/COMPACT DOUBLE DISK-TYPE TOOL MAGAZINE

• Vertically adjacent magazine disks (disks can be rotated individually)

#### ADDITIONAL TOOL MAGAZINE TM (OPTION)

- Increases the basic machine's tool capacity with block-wise setup up to:
  - ▶ Six HSK-A63 tools for TM200
  - ▶ Five HSK-A100 tools for TM180
- 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

## G350a/G550a

G350a → BASIC MACHINE ↔ ADDITIONAL TOOL MAGAZINE TM						
Motorized spindle	Tool interface	Total number of tools of the basic machine and the TM				
Single disk-type tool mag	gazine	TM200				
- U : U :	HSK-A63	34/40	228/234			
For all spindle types	HSK-A63 <sup>(2)</sup>	50/60	244/253			
Compact double disk-typ	e tool magazine	TM200				
For all spindle types	HSK-A63 <sup>(2)</sup>	90/100	_			

G550a ► BASIC MACHINE ↔ ADDITIONAL TOOL MAGAZINE TM							
Single disk-type tool mag	gazine	TM200	TM180				
For all spindle types	HSK-A63	50/60	244/253	<u> </u>			
For all spindle types	HSK-A63 <sup>(2)</sup>	30/34	_	204/208			
Compact double disk-type tool magazine			TM200	TM180			
For all spindle types	HSK-A63 <sup>(2)</sup>	90/100	_	_			
For all spindle types	HSK-A100 <sup>(2)</sup>	46/50		_			

<sup>(1)</sup> Depending on machine configuration (2) Optional

## 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								
G350a	•	•	•						
G550a • • •									

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



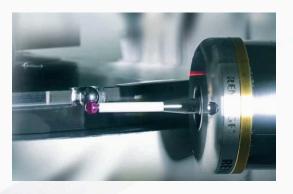
## Perfect accuracy - automatic - any time

## 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





- 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

#### **GEARING CYCLES IN GENERAL**

- Axes coupled as on a gear wheel milling machine
- Programming via NC cycles
- Individual correction option (e.g. crowned, tapered, etc.)
- Gear hobbing: For external gearing with gear hobbing tools; ideal for gearing on shafts; frontal part access not required
- Gear skiving: For external and internal gearing with gear skiving tools; frontal part access required





#### 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

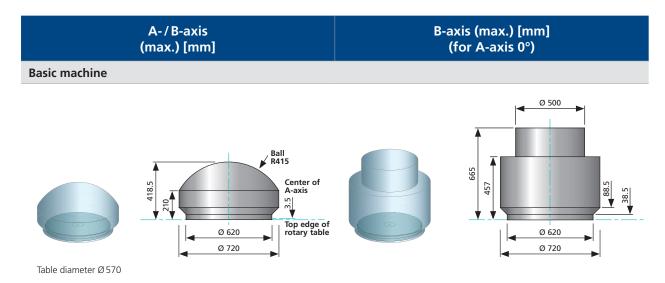
## Availability at a glance

## CNC CONTROL SYSTEM (options).

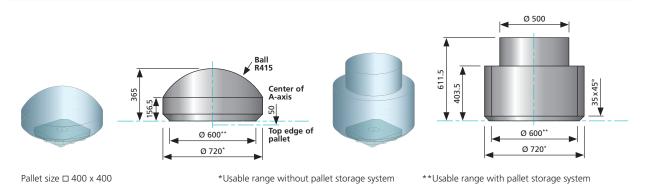
	SIEMENS 840D sl	SIEMENS ONE	HEIDENHAIN TNC 640
Swivel axis calibration GSC	•	•	•
Swivel axis calibration GSC Advanced	•	•	•
Energy Efficiency Package EEP	•	•	_
Interpolation turning PLUS	•	•	_
Hobbing (G_GEAR_HOB)	•	•	_
Gear skiving (G_GSK)	•	•	_
WAY Coordinate measurement software	•	•	_
WAY Light Coordinate 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

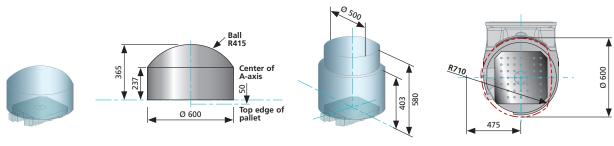
## G350a



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



#### Basic machine with pallet changer

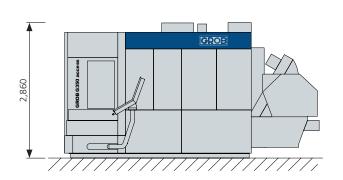


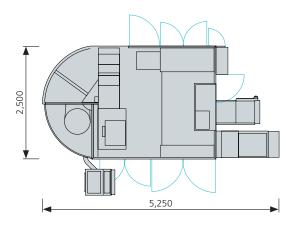
Pallet size □400 x 400



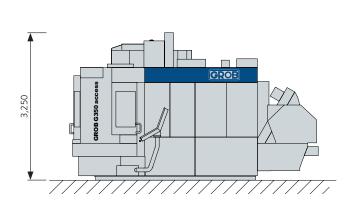
## Side view/top view max. [mm]

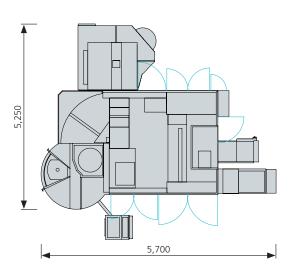
#### **Basic machine**





### Basic machine with pallet changer and additional tool magazine TM200



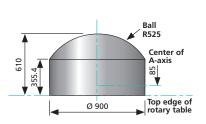


## Maximum part size Footprint

## G550a

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







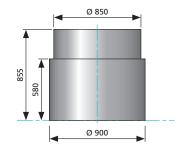
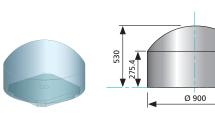


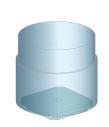
Table diameter Ø 770

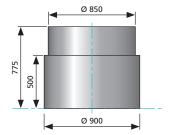
#### Basic machine with pallet clamping system (without pallet changer, incl. design for PSS-R)

Ball R525

Top edge of pallet

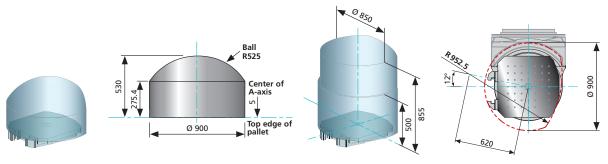






Pallet size □630 x 630

#### Basic machine with pallet changer

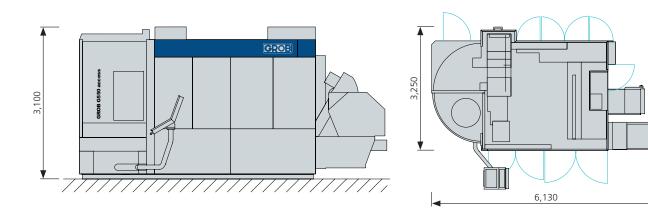


Pallet size □630 x 630

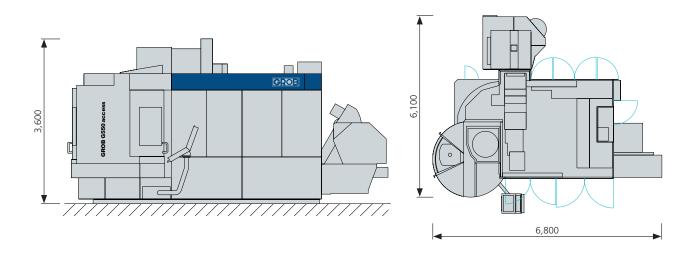


## Side view/top view max. [mm]

#### **Basic machine**



### Basic machine with pallet changer and additional tool magazine TM200



## Technical data – overview

## G350a/G550a

#### **MACHINE TYPE**

#### SLIDE

Working travels in X-/Y-/Z-axis [mm]

Max. speeds in X-/Y-/Z-axis [m/min]

Max. accelerations in X-/Y-/Z-axis [m/s<sup>2</sup>]<sup>(1)</sup>

Max. feed forces in X-/Y-/Z-axis [kN] (1)

Positioning accuracy\* in X-/Y-/Z-axis [mm]

Repeat precision of positioning\* in X-/Y-/Z-axis [mm]

#### **MAIN SPINDLE**

Tool i

Tool interface for short hollow taper tools in acc. with ISO 12164-1

Diameter at front bearing of spindle bearing [mm]

Speed n<sub>max</sub> [rpm]

Max. drive power at 100 % / 40 % duty cycle [kW]

Max. spindle torque at 100 % / 40 % duty cycle [Nm]

Chip-to-chip time t<sub>1</sub> according to VDI 2852 [s], SIEMENS control system and tool change process: Pick-up

Tool interface for short hollow taper tools in acc. with ISO 12164-1

Diameter at front bearing of spindle bearing [mm]

Speed n<sub>max</sub> [rpm]

Max. drive power at 100 % / 40 % duty cycle [kW]

Max. spindle torque at 100 % / 40 % duty cycle [Nm]

 $Chip-to\text{-}chip\ time\ t_1\ according\ to\ VDI\ 2852\ [s],\ SIEMENS\ control\ system\ and\ tool\ change\ process:\ Pick-up$ 

#### DISK-TYPE TOOL MAGAZINE

#### **TOOL INTERFACE**

Number of tool pockets (1)

Max. tool length [mm]

▶ Vertical disk arrangement (outside/inside)

Max. tool diameter [mm] (1)

▶ No diameter restrictions for adjacent pockets

▶ With diameter restrictions for adjacent pockets (outside/inside)

Max. tool weight [kg]

Max. tilt moment around gripper groove [Nm]

#### PART

Table diameter [mm]

Max. table load [kg] (without/with pallet)

Interference diameter [mm]

A-axis swiveling angle [°]

Max. A-axis rotational speed [rpm]

Type of drive A-/B-axis [mm]

B-axis angle of rotation [°]

Max. B-axis rotational speed [rpm]

#### **CONNECTION RATINGS**

Power requirements at 3 AC 400 V/50 Hz [kVA]

Compressed air [bar]

#### WEIGHT (approx.)

Max. total weight [kg] (without/with pallet changer) (incl. part/tool/COL)

#### PROCESS STAGES

Automatic pallet changer

Pallet size [mm]

Pallet change time according to VDI 2852 [s] (2)

Tool magazine expansion

<sup>&</sup>lt;sup>(1)</sup>Depends on the motorized spindle type

<sup>&</sup>lt;sup>(2)</sup>Time value without seating check system

		G350	)a				G5!	50a			
		600/770/	/805				800/95	0/1 020	)		
		60/42/						2/60	,		
		5/3/1					6/4				
		8/8/8					8/8				
		0.006	5				0.0	006			
		< 0.002	25		<0.0025						
		HSK-A6									
			HSK-A63 70								
		70 12,000	0				12,0				
		40/52					40/				
		63.7/82	2.8				63.7	/82.8			
		4.5					4.	.8			
	HSK-A63			HSK-A63	HSK-A63	HSK-A63	HSK-	A100	HSK-A100	HSK-A100	
	80			70	80	70	11	10	100	100	
	16,000			18,000	16,000	18,000	9,0	000	10,000	13,000	
	25/32			29/39	25/32	29/39	547		20/26	64/75	
	159/206			34.6/46.6	159/206	34.6/46.6	470/		262/340	226/265	
	4.5			4.5	4.8	4.8 Comp	5.		5.9	5.9 Compact	
	Single-disk~	Single-di	isk~	Compact double-disk~	Single-disk~	double-		Sing	le-disk~	double-disk~	
	HSK-A63	HSK-A	63	HSK-A63	HSK-A63	HSK-A	<b>163</b>	HS	K-A100	HSK-A100	
	34/40	50/60	)	90/100	50/60	90/1	00	3	80/34	46/50	
_	365/—	365/-	-	365/200	465/—	465/2	.00	5	00/—	500/200	
	86/72	86/72	2	86/72	86/72	86/7	2	14	10/124	140/124	
	160/—	160/-	_	160/72	160/—	160/	72	2	50/—	250/100	
	8	8		8	8	8			22	22	
	12	12		12	12	12			40	40	
		570					7-	70			
		400/34	10		770 700/600						
		720					90				
		-185/+	45				-185	/+45			
		12					1	2			
		Worm gear/tor	que motor			Wor	m gear/t		notor		
		nx360	)				nx3				
		50					5	0			
		at least	12				at lea	oct 42			
		5	42				at lea				
		21,500/25,200									
		15,100/16									
		2-fold	ı				2-f	old			
		400 x 40						k630			
		12.0					13	8.0			
		TM200 (HSI	<-A63)		TM20	0 (HSK-A63)			TM180 (HS		
							Subje	ect to tec	hnical changes	without prior notic	







# The ideal automation solution for your project AUTOMATION MADE BY GROB.

Our customers in small, medium, and large-scale production have been relying on GROB automation solutions for decades. The experience gained is fed straight into our automation solutions, making GROB a strong partner – for solutions with pallet or part storage systems to highly flexible, turn-key manufacturing lines. GROB automation technology allows you to flexibly adapt to capacities and guarantees pallet and part handling perfectly in tune with your needs.

- Mechanical machining and automation from a single source
- Optimal automation for your production plant
- Responsibility for quality and scheduling with one partner
- Turn-key project management



OUR AUTOMATION PORTFOLIO.

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

## Automation overview

# THE IDEAL AUTOMATION SOLUTION FOR YOUR MACHINE.

GROB offers components manufactured in-house for the entire product portfolio for semi- to fully-automatic manufacturing with the highest quality standards.

### ROTARY PALLET STORAGE SYSTEM (PSS-R)

 Optimum entry into automated and highly efficient production

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





### PALLET CHANGER SYSTEM

• Allows retooling during part machining



## PALLET TOWER STORAGE SYSTEM (PSS-T)

• Expands the G-module to a flexible manufacturing cell

## GROB ROBOT CELL (GRC)









## Moving into a digital future INDUSTRY 4.0.

Transparency and connectivity – our modular GROB-NET<sup>4</sup>Industry web applications let you network and digitalize your production processes across all plants to make your production even more efficient. From planning to engineering to maintenance, GROB-NET<sup>4</sup>Industry combines relevant modules for increasing productivity and offers you an all-round package for modern production in the Industry 4.0 era.

- GROB<sup>4</sup>LINE watch the machine on your smartphone
- GROB<sup>4</sup>ANALYZE machine feedback for the CIP
- GROB<sup>4</sup>ANALYZE OFFICE CLIENT flexible data analysis
- GROB<sup>4</sup>OEE reduce machine downtime, increase efficiency
- GROB<sup>4</sup>TDX transfer tool data automatically
- GROB<sup>4</sup>CONNECT connection from the real world to the ERP system
- GROB<sup>4</sup>INTERFACE easy route to machine communication
- GROB<sup>4</sup>PORTAL the secure cloud for the industry
- GROB<sup>4</sup>CARE service and maintenance portal
- GROB<sup>4</sup>OPTIMIZATION motorized spindle process evaluation
- GROB<sup>4</sup>TRACK machine axes in view at all times
- GROB<sup>4</sup>AUTOMATION intuitive production control software for unmanned operation
- GROB<sup>4</sup>PILOT multi-functional machine operation
- GROB<sup>4</sup>COACH programming, simulation and training



OUR SOFTWARE PORTFOLIO.

#grobnet4industry #interactiveapplication #cloud4machine







## Friendly, committed, competent GROB SERVICE.

From 24-hour service and a comprehensive range of spare parts and training courses to professional machine maintenance and analysis: The GROB service spectrum offers you a comprehensive range of products and services and is available to you worldwide thanks to our global production plants and service branches.

- Worldwide service network
- Available 24/7/360
- One hotline for everything
- We are right where our customers are



OUR SERVICE PORTFOLIO.

#hotline #webshop #serviceagreements #replacementparts #repaircenter #overhaul&optimization #motorizedspindleservice #grobtechnicalacademy

## Worldwide throughout the machine service life

# GROB – GLOBAL AND INTERNATIONAL.

From Bavaria to the world: Since our founding in 1926 in Munich, we as a global, family-managed company have been on a constant growth trajectory developing and manufacturing systems and machine tools. Our customers include the world's leading automotive manufacturers, their suppliers, and renowned companies from the aerospace, mechanical engineering, and other industries. With our production facilities in Germany, Brazil, the USA, China, Italy and India, as well as 14 worldwide service centers and sales branches, we are represented around the globe, ensuring the highest quality.



Our global production sites





#### **EUROPE**

#### Mindelheim, Germany

#### Pianezza, Italy

Stratford-upon-Avon, Great Britain

Hengelo, Netherlands

Senlis, France

Baar, Switzerland

Poznań, Poland

Győr, Hungary

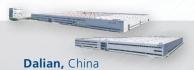
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8,300 EMPLOYEES WORLDWIDE















Bangalore, India



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## GROB-WERKE GmbH & Co. KG

Pioneers in designing and building highly innovative production and automation systems for over 95 years.

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











