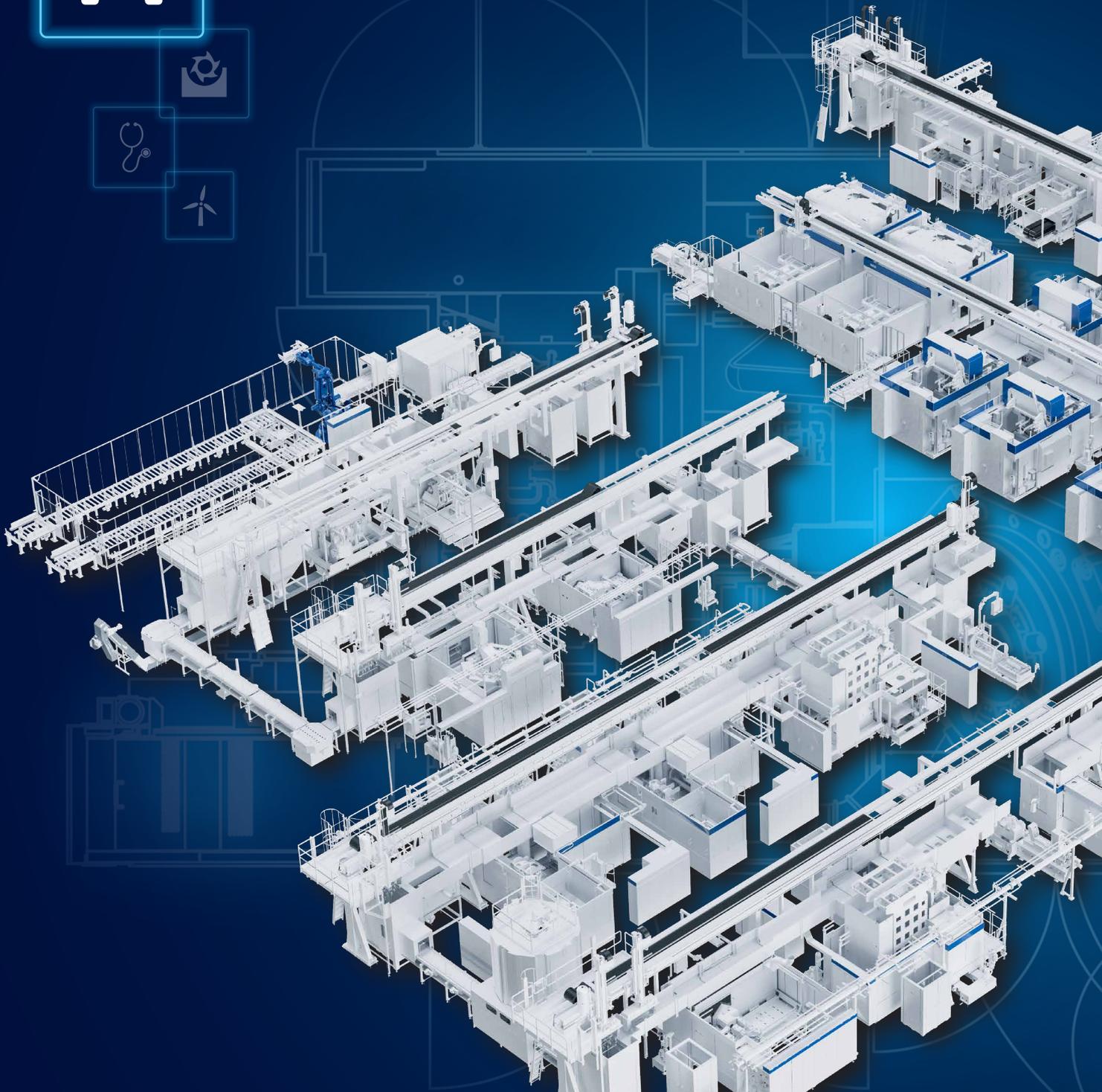


#Ready&Reliable



HEAVY-DUTY SOLUTIONS



This is who we are
GROB-WERKE



Technology at its best
**STEP INTO A
GREEN FUTURE
WITH US**

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. But we also place great emphasis on 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 the carbon footprint.

Excellence in sustainable technology



OUR PRODUCT RANGE

#MachiningTechnology #UniversalMachiningCenters
#AssemblyPlants #Electromobility
#Automation #AdditiveManufacturing #Digitalization
#NewAndQualityCheckedUsedMachines #Service

Concentrated competence worldwide

INTELLIGENT TECHNOLOGY IS HUMAN

For generations, we at GROB have lived and experienced this principle by making customer 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.

TAZ 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.



Ensure the optimal solution for your success

OUR SOLUTIONS FOR THE HEAVY-DUTY SECTOR

G-SERIES (G700, G720)

Machine concepts

Maximum part size/minimal footprint

Technical data

4-AXIS UNIVERSAL MACHINING CENTERS (G640, G840)

Machine concepts

Maximum part size/minimal footprint

Technical data

F-SERIES (G700F, G720F)

Machine concepts

Maximum part size/minimal footprint

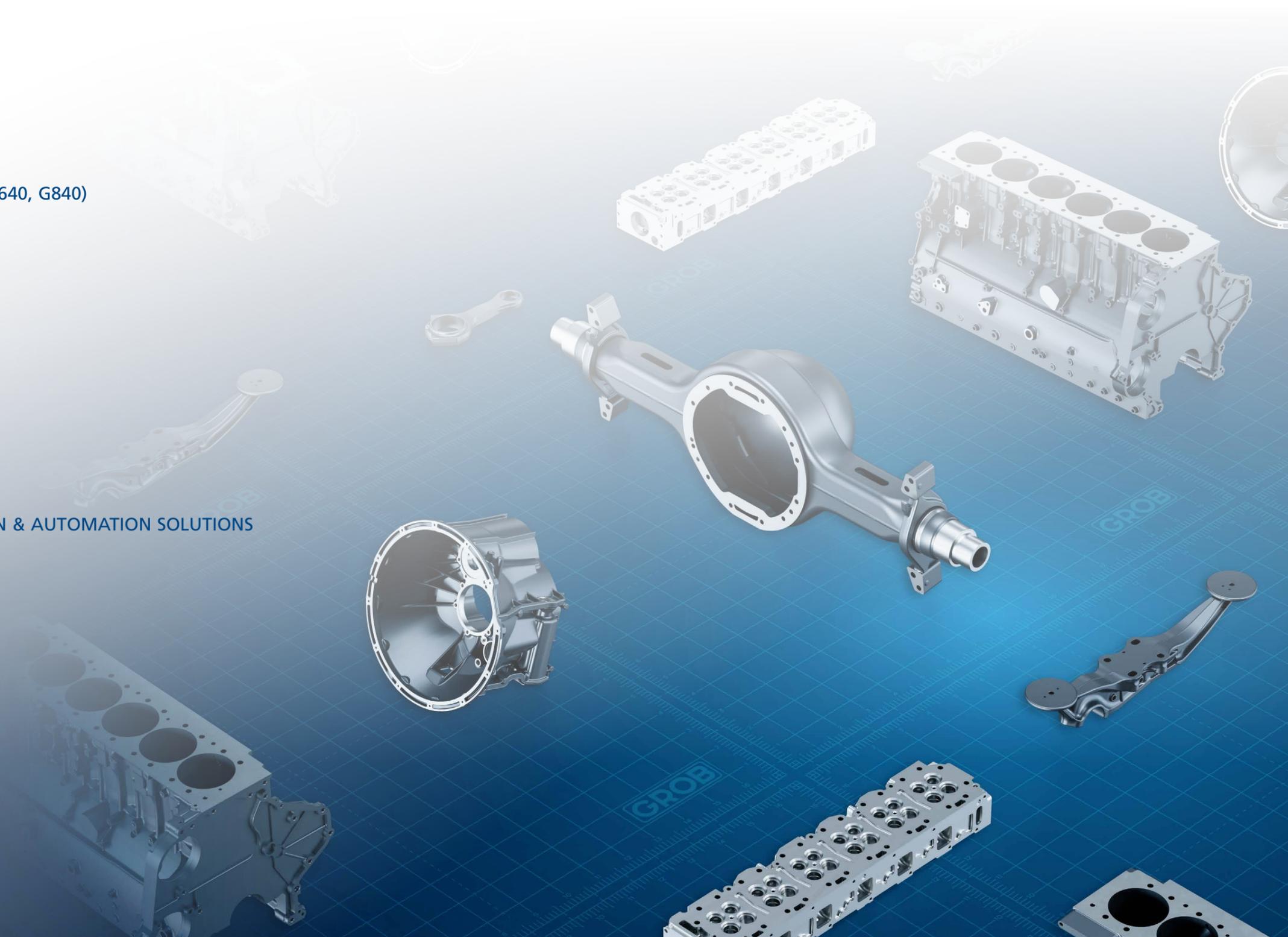
Technical data

MOTORIZED SPINDLES

SPECIAL-PURPOSE MACHINE CONSTRUCTION & AUTOMATION SOLUTIONS

DIGITALIZATION

SERVICE





*Flexible, dynamic &
productive*

THE GROB G-SERIES

Extensive expertise and the use of state-of-the-art technologies have made GROB a recognized expert in the heavy-duty sector. GROB's machine concepts help you master any challenge.

- ✦ In-house tool and clamping fixture design as well as clamping fixture construction – ensure the optimal solutions for your success
- ✦ Greatest process and engineering experience among machine tool manufacturers
- ✦ Automation solutions tailored to your needs
- ✦ One single supplier responsible:
From individual machines to turn-key production lines



OUR PORTFOLIO
#G700 #G720

Available as single and two-spindle machining centers

THE GROB G-SERIES (G700 / G720)

GROB's G700 and G720 are specifically designed for use in flexible series production and provide the ideal solution for high-precision machining. No matter which machine concept you choose – your GROB machine can be stand-alone or interlinked with other machines in an automated production line.

In the heavy-duty sector, the G700 and G720 can also be deployed in special configurations – for example, for taper turning as well as reaming of valve seats and guides, with fixed taper-turning heads mounted on the spindle.

Benefit from the **PROCESS RELIABILITY**, **EFFICIENCY**, and **DURABILITY** of our machine concept.



TILTING ROTARY TABLE

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

HORIZONTAL MOTORIZED SPINDLE

- ⊕ For meeting the toughest machining requirements

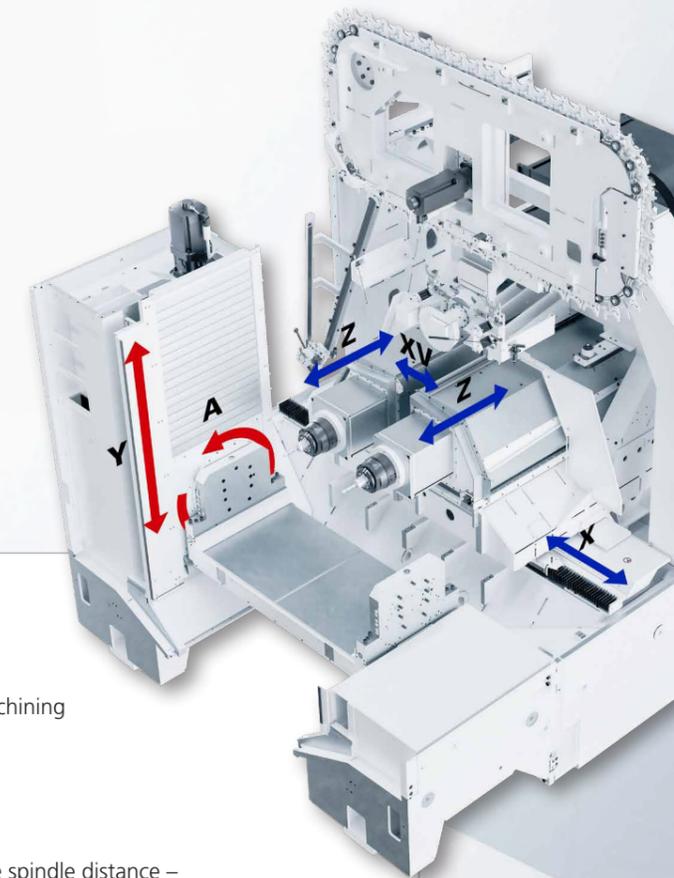
CHIP DISPOSAL

- ⊕ Uninterrupted part machining with chip disposal by a flume, material handling or direct discharge



"OVERHEAD" PART MACHINING

- ⊕ Ideal for machining with MQL
- ⊕ Best chip fall
- ⊕ Low heat input by hot chips on the fixture
- ⊕ Flexible for front and top loading



UNIQUE AXIS CONCEPT

- ⊕ Modular designs allows flexible selection of 4- or 5-axis machining
- ⊕ The linear axes X and Z move the machining spindle
- ⊕ Optimal temperature concept
- ⊕ X- and Z-axis with optimized dynamics and rigidity
- ⊕ Flexibly adjustable XV-axis allows variable adjustment of the spindle distance – so the Z-axes can be optimally adapted to different requirements



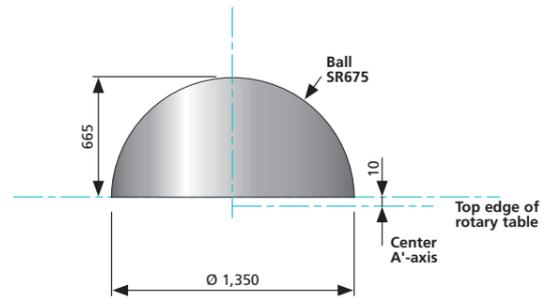
Maximum part size
Minimal footprint

G700

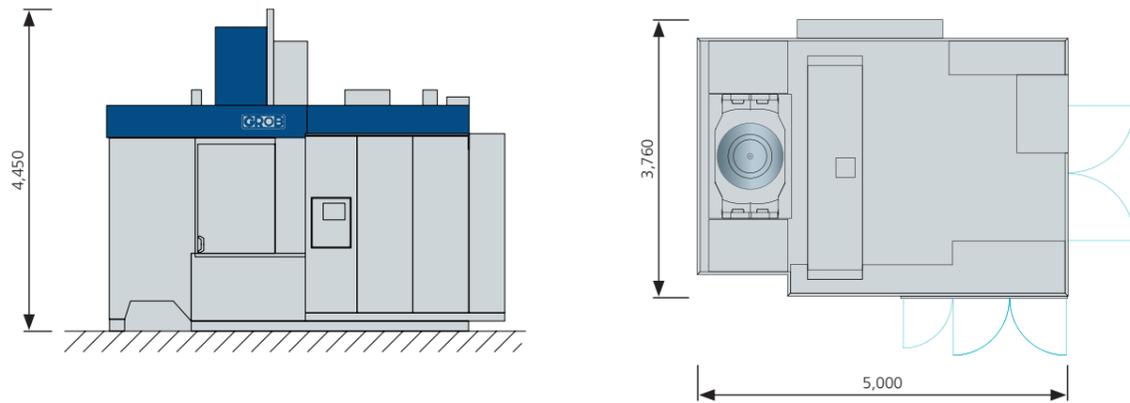


A- / B-axis
max. [mm]

Basic machine



Basic machine



Dimension values [mm], not taking into account preventive maintenance and operating areas or emulsion and chip disposal; * Flattening for top/front loading

Illustrations may contain options
Subject to technical changes without prior notice

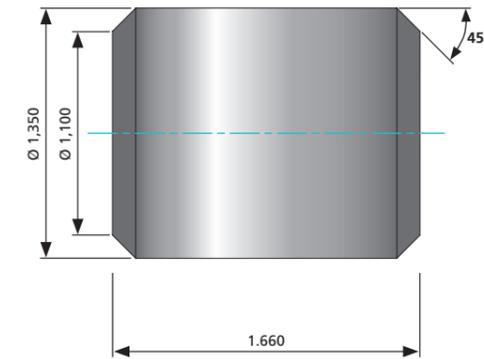
Maximum part size
Minimal footprint

G720

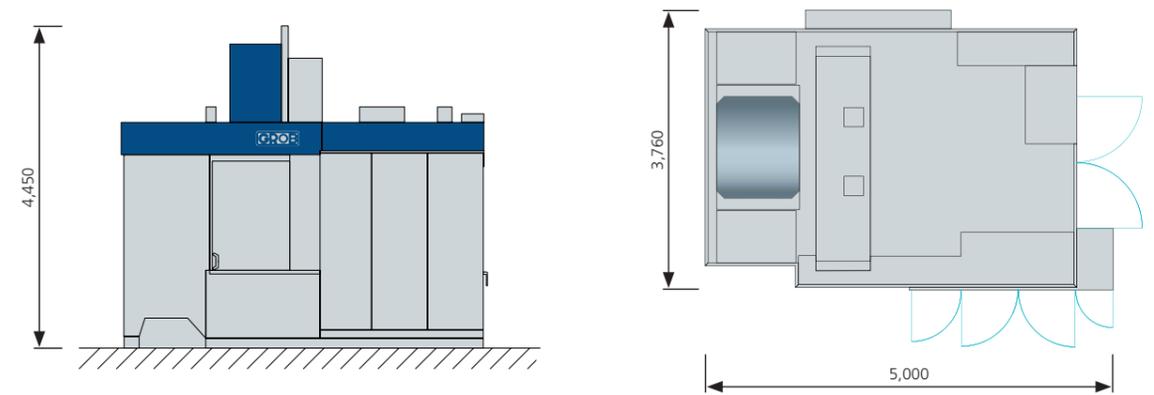


Max.
A-axis [mm]

Basic machine



Basic machine



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

Illustrations may contain options
Subject to technical changes without prior notice

Technical data – overview

G700 / G720

MACHINE TYPE		G700		G720	
Spindle distance [mm]		—		450–520 ⁽²⁾	
Working travels in X-/Y-/Z-axis [mm]		1,250/920/1,160		690 ⁽³⁾ /920/1,160	
Max. speeds in X-/Y-/Z-axis [m/min]		60/50/60		50/50/60	
Max. accelerations in X-/Y-/Z-axis [m/s ²] ⁽¹⁾		5/5/6		5/5/7	
Max. feed forces in X-/Y-/Z-axis [kN] ⁽¹⁾		12/12/12		6/6/12	
Positioning accuracy* in X-/Y-/Z-axis [mm]		0.006		0.006	
Repeat precision of positioning* in X-/Y-/Z-axis [mm]		<0.003		<0.003	
DISK-TYPE TOOL MAGAZINE		CHAIN-TYPE TOOL MAGAZINE		CHAIN-TYPE TOOL MAGAZINE	
TOOL INTERFACE		HSK-A100		HSK-A100	
Number of tool pockets per motorized spindle with full occupancy		49	65	24	32
Max. tool length [mm] (vertical disk arrangement)		500/760 ⁽⁴⁾		500	
Max. tool diameter [mm] ▶ No diameter restrictions for adjacent pockets ▶ Diameter restrictions for adjacent pockets		125 250	125 250	125 250	125 250
Max. tool weight [kg]		22	22	22	22
Chip-to-chip time t ₁ according to VDI 2852 [s] SIEMENS control system**		4.8–6.0		6.0	
PART					
Table diameter [mm]		870		870	
Table load [kg]		up to 2,000		up to 2,000	
Interference diameter [mm]		1,350		1,350	
WEIGHT (approx.)					
Total weight [kg]		30,000		32,000	

⁽¹⁾ Depends on motorized spindle type
⁽²⁾ Special solutions possible
⁽³⁾ Depending on the set spindle spacing
⁽⁴⁾ Opt. tool length

Subject to technical changes without prior notice
*According to ISO230-2:2014 **The chip-to-chip time depends on motorized spindle type and tool holder



*A machine series
tailored to your needs*

4-AXIS UNIVERSAL MACHINING CENTERS BY GROB

The 4-axis universal machining centers G640 and G840 offer our customers a heavy-duty machine series that at the same time guarantees robust, optimal and dynamic processes.

- ⊕ High productivity and process reliability
- ⊕ Optimized availability and durability
- ⊕ Excellent maintainability
- ⊕ Extensive configuration possibilities
- ⊕ Designed for automation solutions



OUR PORTFOLIO
#G640 #G840

Highly resilient and dynamic

4-AXIS UNIVERSAL MACHINING CENTERS FROM GROB (G640/G840)

High productivity, reliable components, and unique durability characterize the 4-axis series. Thanks to extensive configuration options, our machining centers can be perfectly matched to the requirements of your production.

Depending on the equipment, the drive concept is based on one ball screw drive arranged in the mass center or two symmetrically arranged ball screw drives in the Y-axis. The torque motor in the B-axis, which is already installed in the standard model, also enables a fast positioning movement with maximum precision.

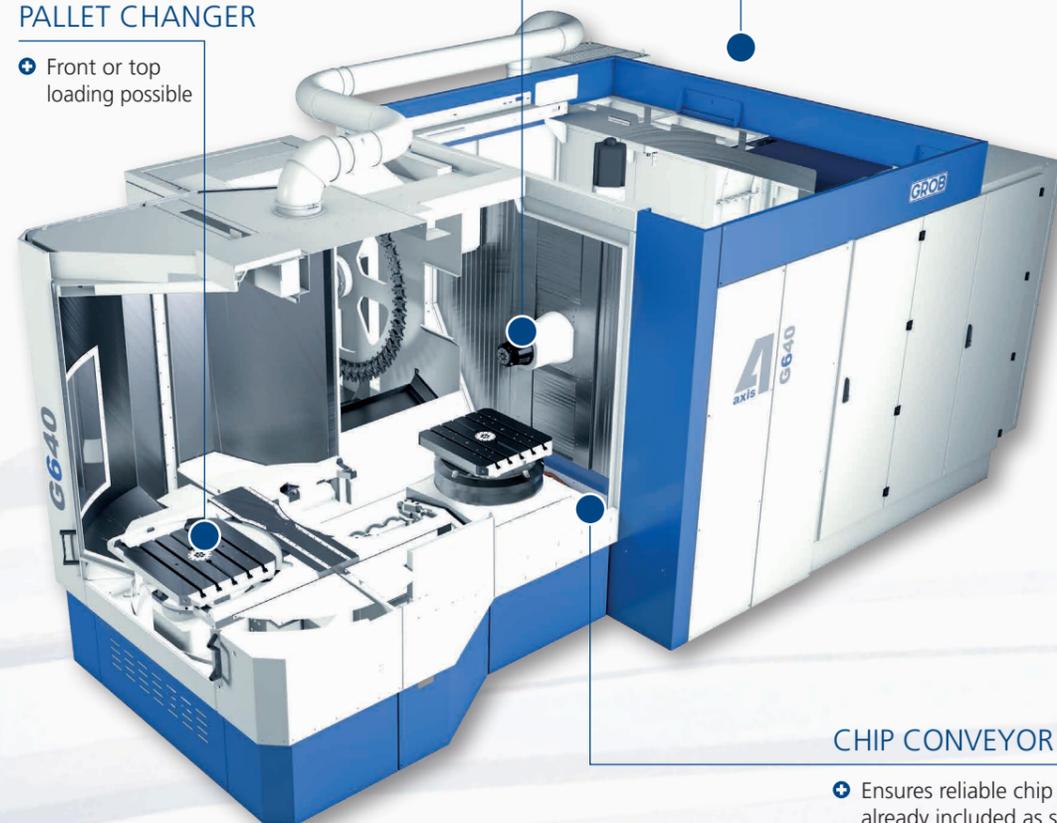


WIDE SELECTION OF MOTORIZED SPINDLES

- ⊕ Different spindle types are available depending on the machine type

AVAILABLE WITH/WITHOUT PALLET CHANGER

- ⊕ Front or top loading possible



CHIP CONVEYOR

- ⊕ Ensures reliable chip management; already included as standard

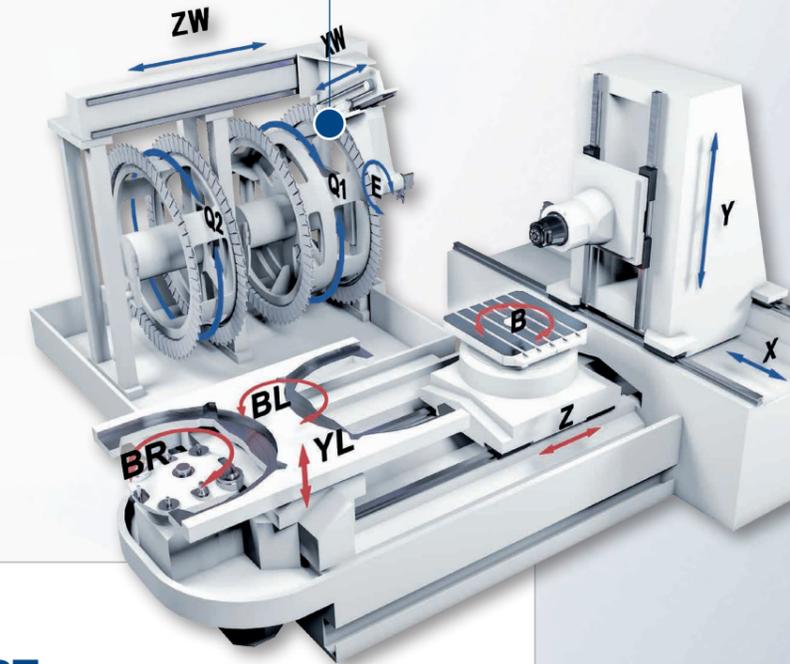
Illustration of G640 may contain options

DISK-TYPE TOOL MAGAZINE

- ⊕ Individually configurable as desired

EFFICIENT MACHINE COOLING

- ⊕ Available in different packages and can be extended with various additional options



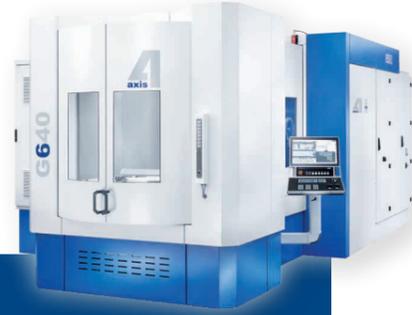
UNIQUE AXIS CONCEPT

- ⊕ Topology optimization for a perfect combination between stability, cushioning, and dynamics
- ⊕ A diverse range of options in a modular design for customized machines

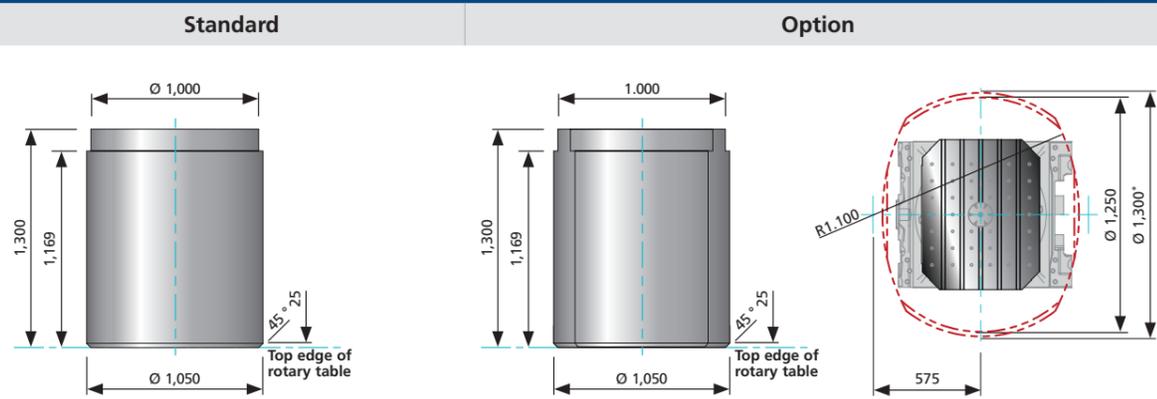


Maximum part size
Minimal footprint

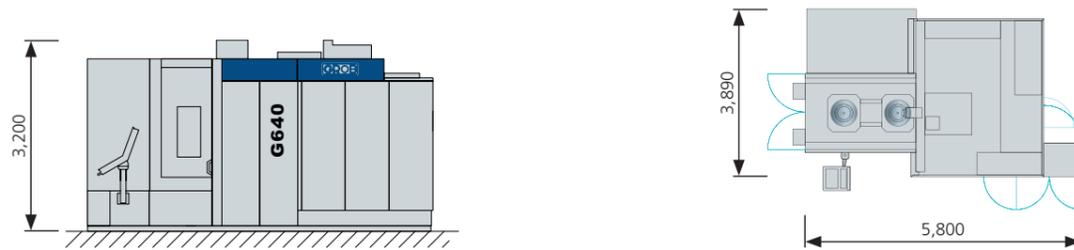
G640



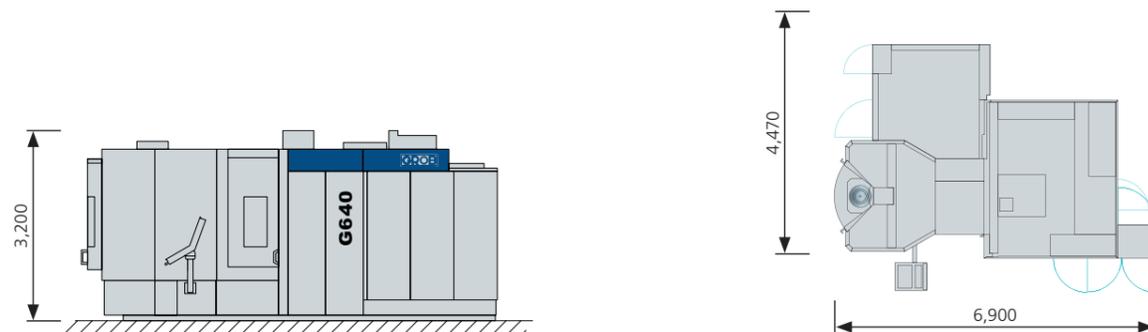
Maximum part size [mm]



Basic machine without pallet changer and compact magazine



Basic machine with pallet changer and large tool magazine



Dimension values [mm], not taking into account the sphere of operation and preventive maintenance
*Optionally extended interference diameter with flattened diameter

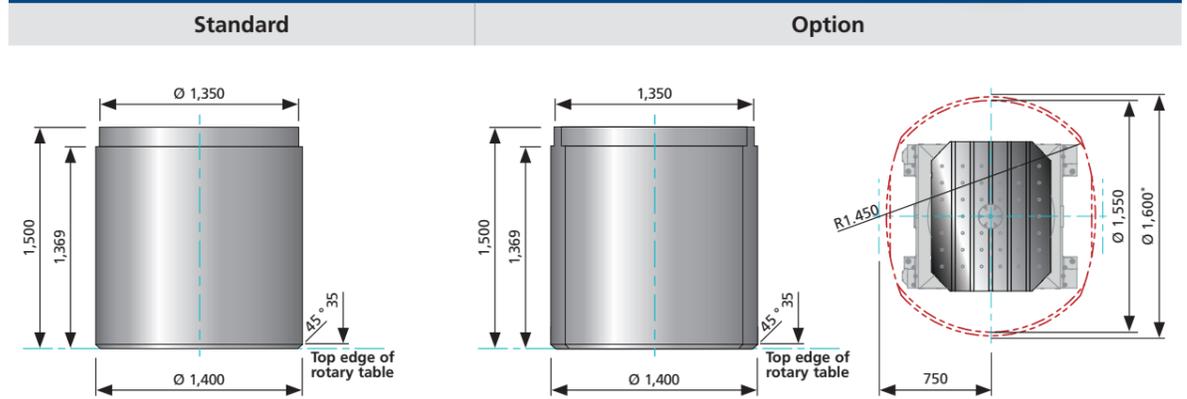
Illustrations may contain options
Subject to technical changes without prior notice

Maximum part size
Minimal footprint

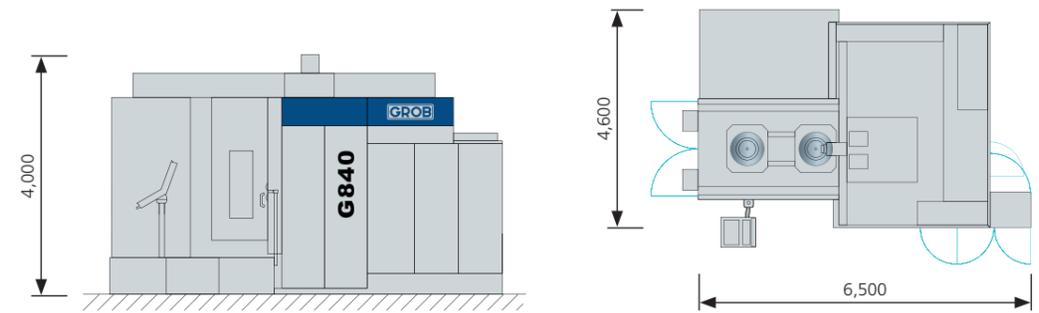
G840



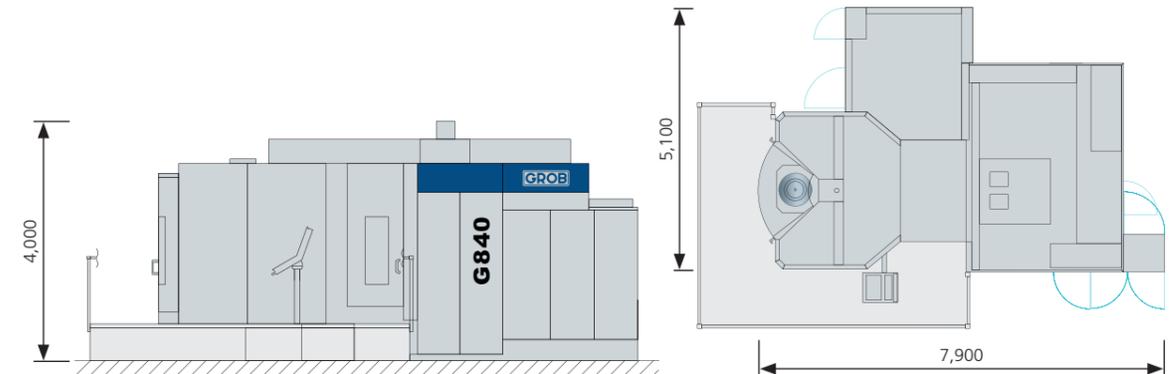
Maximum part size [mm]



Basic machine without pallet changer and compact magazine



Basic machine with pallet changer and large tool magazine



Dimension values [mm], not taking into account the sphere of operation and preventive maintenance
*Optionally extended interference diameter with flattened diameter

Illustrations may contain options
Subject to technical changes without prior notice

Technical data – overview

G640 / G840

MACHINE TYPE	G640					G840				
Spindle distance [mm]	—					—				
Working travels in X-/Y-/Z-axis [mm]	1,050/800/1,050		1,050/1,000/1,050 ⁽⁷⁾			1,400 (1,500) ⁽⁹⁾ /1,200 ⁽¹⁰⁾ /1,400		1,400 (1,500) ⁽⁹⁾ /1,400/1,400 ⁽⁷⁾		
Max. speeds in X-/Y-/Z-axis [m/min]	70/60/60 (80/70/70) ⁽⁶⁾		60/60/60 (70/70/70) ⁽³⁾			50/50/50				
Max. accelerations in X-/Y-/Z-axis [m/s ²] ⁽¹⁾	6/6.5/6 (6.5/8/8.2) ⁽⁶⁾		4.5/5.5/6 (4.5/6.5/8.2) ⁽³⁾			4.5/5.5/4.5				
Max. feed forces in X-/Y-/Z-axis [kN] ⁽¹⁾	10/10/12					12/12/15				
Positioning accuracy ⁽²⁾ in X-/Y-/Z-axis [mm]	0.006					0.006				
Repeat precision of positioning ⁽²⁾ in X-/Y-/Z-axis [mm]	<0.003					<0.003				
DISK-TYPE TOOL MAGAZINE	CDTM	CTTM	QDM	SDM	TM	CDTM	CTTM	QDM	SDM	TM
TOOL INTERFACE	HSK-A100					HSK-A100				
Number of tool pockets per motorized spindle with full occupancy	57 (52) ⁽⁴⁾	87 (82/77) ⁽⁴⁾	117 (112) ⁽⁴⁾	172 (167) ⁽⁴⁾	238 (476) ⁽⁴⁾	57 (52) ⁽⁴⁾	87 (82/77) ⁽⁴⁾	117 (112) ⁽⁴⁾	172 (167) ⁽⁴⁾	238/476 ⁽⁴⁾
Max. tool length [mm]	500 (680) ⁽⁴⁾	260 (545/680) ⁽⁴⁾	500 (680) ⁽⁴⁾	260 (545/680) ⁽⁴⁾	500 (680) ⁽⁴⁾	500 (830) ⁽⁴⁾	500 (545/830) ⁽⁴⁾	500 (830) ⁽⁴⁾	260 (545/830) ⁽⁴⁾	500 (830) ⁽⁴⁾
Max. tool diameter [mm] ▶ No diameter restrictions for adjacent pockets ▶ Diameter restrictions for adjacent pockets	120 280	120 280	120 280	120 280	152/120 280	120 280	120 280	120 280	120 280	152/120 280
Max. tool weight [kg]	35	35	35	35	35	35	35	35	35	35
Chip-to-chip time t ₁ according to VDI 2852 [s] SIEMENS control system **	4.0 – 4.8					5.3 – 6.2				
PART										
Max. load on pallet [kg] (standard/option)	1,000/1,500 ⁽⁸⁾					1,700/2,200 ⁽⁸⁾				
Pallet size [mm] (standard/option)	630x630/630x800;800x800					800x800/800x1,000				
B-axis interference diameter [mm]	1,050 (1,300) ⁽⁹⁾					1,400 (1,600) ⁽⁹⁾				
WEIGHT (approx.)										
Total weight [kg] (with pallet changer)	23,500					37,600				
PROCESS STAGES										
Automatic pallet changer	yes					yes				
Pallet change time according to VDI 2852 [s] ⁽⁵⁾	14.0					17.0				

⁽¹⁾ Depending on type of motorized spindle and load weight
⁽²⁾ According to ISO 230-2:2014
⁽³⁾ Opt. work area expansion with dynamic package
⁽⁴⁾ Long tool only possible on first disk
⁽⁵⁾ Without seating check
⁽⁶⁾ Dynamic package
⁽⁷⁾ Opt. work area expansion
⁽⁸⁾ Available independent of opt. work area expansion
⁽⁹⁾ Extended interference with flattened diameter
⁽¹⁰⁾ Y-axis working travel deviates in case of gearbox spindle: 1,180 mm

CDTM = compact double disk-type tool magazine; CTTM = compact three disk-type tool magazine; QDM = quadruple disc magazine; SDM = sextuple disc magazine; TM = tower magazine
 Subject to technical changes without prior notice
 * Only available in conjunction with the optional work area expansion ** chip-to-chip time depending on motorized spindle and tool holder



*Flexible, dynamic &
productive*

THE GROB F-SERIES

Extensive expertise and the use of state-of-the-art technologies have made GROB a recognized expert in the heavy-duty sector. GROB's machine concepts help you master any challenge.

- ✦ In-house tool and clamping fixture design as well as clamping fixture construction – ensure the optimal solutions for your success
- ✦ Greatest process and engineering experience among machine tool manufacturers
- ✦ Automation solutions tailored to your needs
- ✦ One single supplier responsible:
From individual machines to turn-key production lines
- ✦ Ideal for demanding applications such as drilling, reaming, and fine milling
- ✦ Double productivity: Two spindles simultaneously machine one workpiece each – delivering double output with just one machine



OUR PORTFOLIO
#G700F #G720F

Available as single and two-spindle machining centers

THE GROB F-SERIES (G700F / G720F)

GROB's G700F and G720F provide the ideal conditions for efficient series production in the heavy-duty sector. Regardless of which of the two machine concepts is selected, your GROB machine can stand alone, or be interlinked with other machines in an automated production line.

Benefit from the **PROCESS RELIABILITY, EFFICIENCY**, and **DURABILITY** of our machine concept.



OUTSTANDING DESIGN FOR MINIMUM QUANTITY LUBRICATION MACHINING

- Thanks to optimized design of work area

UNHINDERED CHIP FALL AND OPTIMAL HEAT DISSIPATION

- Thanks to steep machine bed slants in the work area and optimized axis configuration

HIGH DYNAMICS AND SHORT CHIP-TO-CHIP TIMES

- Thanks to optimized and coordinated axis drives

HIGH MACHINING ACCURACY

- Thanks to the rigid design and horizontal spindles in cross slide construction

HIGH MANUFACTURING FLEXIBILITY

- Thanks to the modular design and ease of retooling

UNIQUE AXIS CONCEPT

- Three linear axes and one or two rotary axes enable 4- to 5-sided machining.
- The linear axes X and Z move the machining spindle
- Optimal temperature concept
- X- and Z-axis with optimized dynamics and rigidity
- Perfect for automated loading

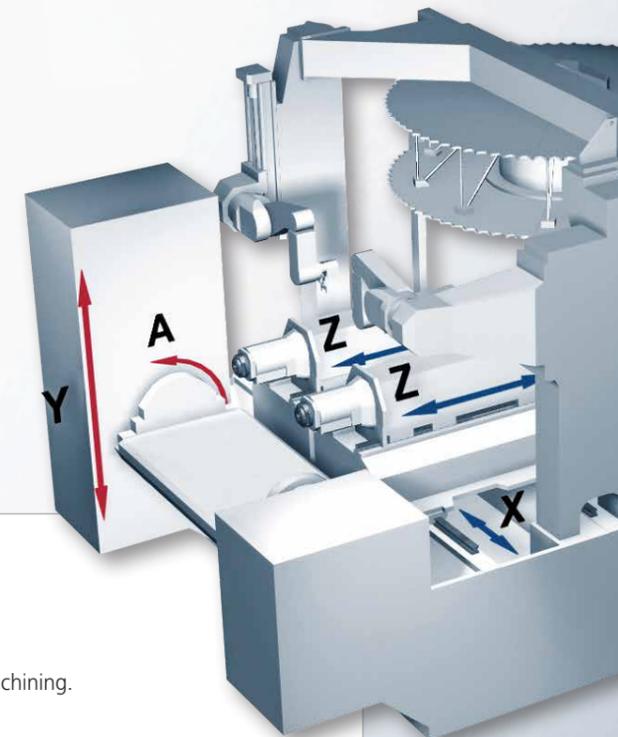


Illustration of G720F may contain options

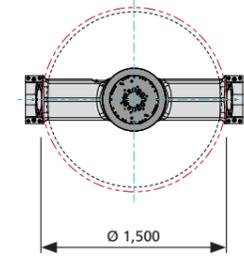
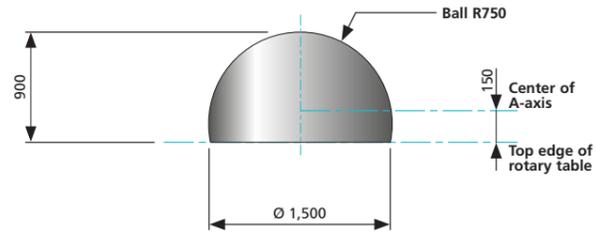


Maximum part size
Minimal footprint

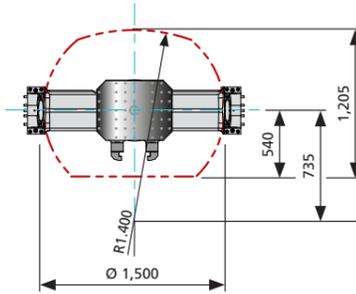
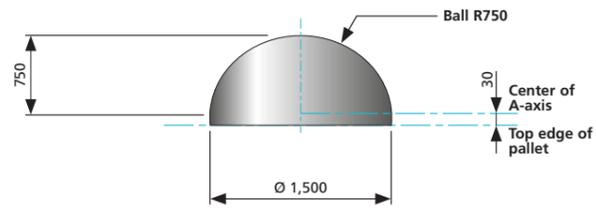
G700F



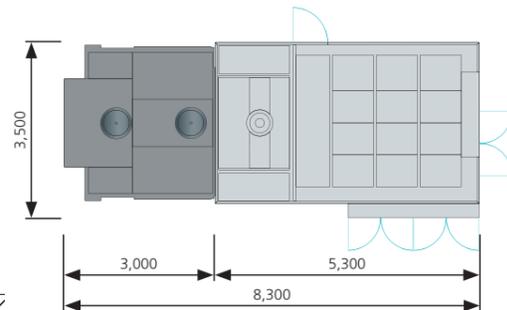
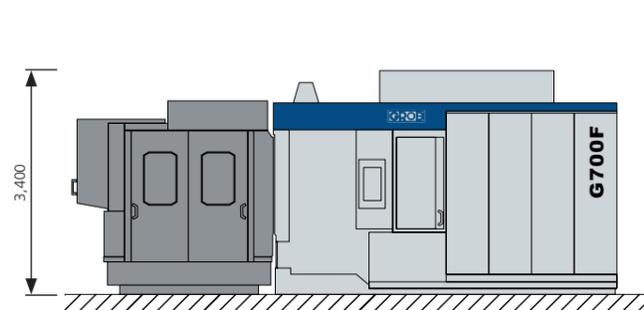
A- / B-axis max. [mm]	Top view max. [mm]
Basic machine	



Basic machine with pallet changer



Basic machine with optional pallet changer



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

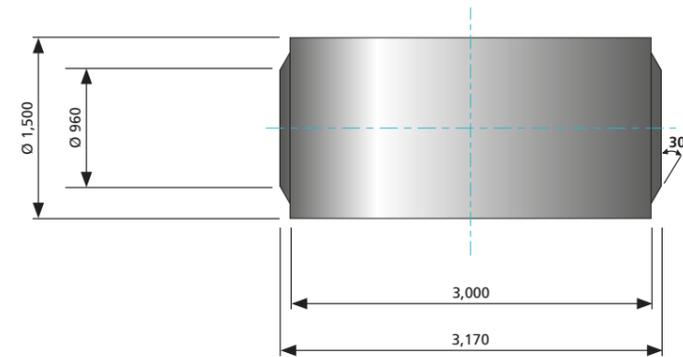
Illustrations may contain options
Subject to technical changes without prior notice

Maximum part size
Minimal footprint

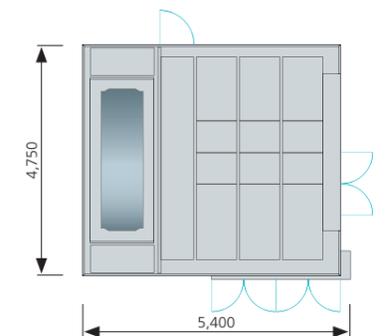
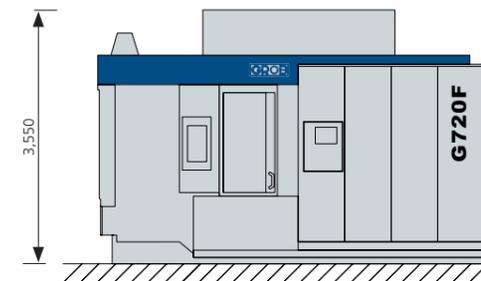
G720F



Max. A-axis [mm]
Basic machine



Basic machine



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

Illustrations may contain options
Subject to technical changes without prior notice

Technical data – overview

G700F / G720F

MACHINE TYPE		G700F				G720F				
Spindle distance [mm]		—				1,500				
Working travels in X-/Y-/Z-axis [mm]		1,450/990/1,035				1,450/1,200/1,035				
Max. speeds in X-/Y-/Z-axis [m/min]		60/75/100				80/50/100				
Max. accelerations in X-/Y-/Z-axis [m/s ²] ⁽¹⁾		6.5/5.5/14				8/4/14				
Max. feed forces in X-/Y-/Z-axis [kN] ⁽¹⁾		6/6/6				5/5/5				
Positioning accuracy * in X-/Y-/Z-axis [mm]		0.01				0.01				
Repeat precision of positioning * in X-/Y-/Z-axis [mm]		<0.005				<0.005				
DISK-TYPE TOOL MAGAZINE		STM	DTM	STM	DTM	STM	DTM	STM	DTM	
TOOL INTERFACE		HSK-A63		HSK-A100		HSK-A63		HSK-A100		
Number of tool pockets per motorized spindle with full occupancy		80	160	40	80	40	80	40	35	55
Max. tool length [mm] (vertical disk arrangement)		400	600	400	635	400	600	400	635	590
Max. tool diameter [mm] ▶ No diameter restrictions for adjacent pockets ▶ Diameter restrictions for adjacent pockets		70 170		130 260		70 170		130 260		
Max. tool weight [kg]		8		22		8		22		
Chip-to-chip time t ₁ according to VDI 2852 [s] SIEMENS control system **		2.9		3.4		2.9		3.4		
PART										
Table diameter [mm]		512				512				
Table load [kg] (without/with pallet) (A-/B-axis)		750/600				2x 750/—				
Pallet size [mm]		500x630				—				
Interference diameter [mm]		1,500				1,500				
WEIGHT (approx.)										
Total weight [kg] (without/with pallet changer)		24,800/31,500				35,000				

⁽¹⁾ Depends on motorized spindle type
⁽²⁾ Time value without seating check system

STM = single disk-type tool magazine; DTM = double disk-type tool magazine; TTD = three disk-type tool magazine
 Subject to technical changes without prior notice
 * According to ISO 230-2:2006 ** The chip-to-chip time depends on motorized spindle type and tool holder



The heart of our machines **GROB MOTORIZED SPINDLES**

Besides the broad range of spindles, the motorized spindles designed and produced by GROB itself are the preferred choice for optimized process design. These are perfectly tailored to our machining centers and have optimized quality features.

- ⊕ In-house development tailored to market requirements
- ⊕ Inventory of the main spindles
- ⊕ Global repair centers
- ⊕ Replacement program ensures short delivery times, attractive prices, and sustainability

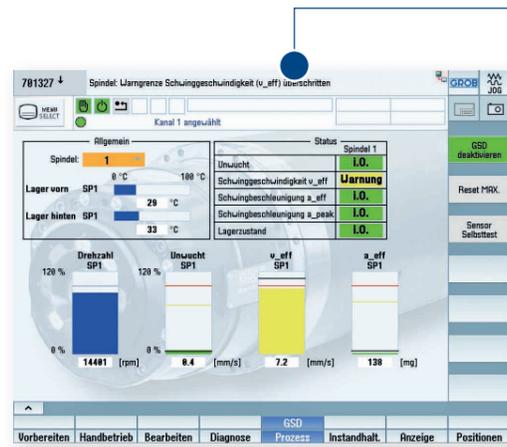
Machine components

GROB MOTORIZED SPINDLES

GROB SPINDLE DIAGNOSTICS (GSD) – OPTION

GROB Spindle Diagnostics is a system that automatically monitors both the condition of the motorized spindle (condition monitoring) and 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 exceed limits
- ⊕ Service life of the motorized spindle extended through identification of critical operating states
- ⊕ Perfect process optimization is possible
- ⊕ Machine downtimes avoided through scheduled maintenance



GROB CHIP-IN-SPINDLE DETECTION SYSTEM (SiS) – OPTION

Detection of deformations within a few milliseconds

- ⊕ Inspection and detection of chip and foreign body errors between flat and tapered surfaces
- ⊕ Automatic interruption if a clamping error is detected
- ⊕ System independently takes fault clearance measures

SPIKE® PROCESS FORCE MONITORING SYSTEM** – OPTION

Monitoring of bending moments and pull-in forces. Based on these values, the system detects and monitors:

- ⊕ Tool wear and incipient tool breakage
- ⊕ Vibrations and rattling
- ⊕ Tool change planning based on system data
- ⊕ Reduction of tool damage and optimal utilization of the tool life
- ⊕ Continuous monitoring during the machining process

**The GROB chip-in-spindle detection system (SiS) is always included in this option

Spindle types – Availability at a glance!

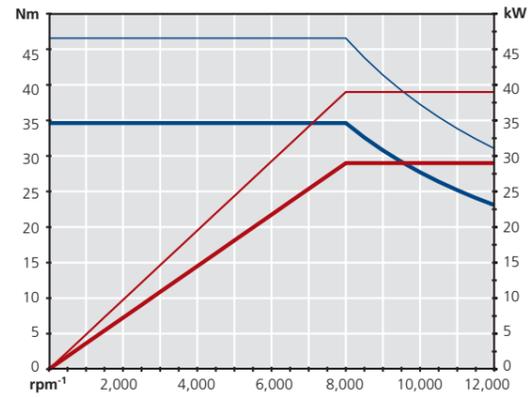
SPINDLE TYPE ** ◀ MACHINE										
Tool interface for hollow taper shanks acc. to ISO 12164-1	HSK-A63	HSK-A63	HSK-A63	HSK-A63	HSK-A100	HSK-A100	HSK-A100	HSK-A100	HSK-A100	HSK-A100*
Spindle type	4	1	5	38	3	6	7	8	F2	22
Spindle bearing Ø at front bearing [mm]	70	70	70	70	100	100	110	120	120	100
Rotational speed n _{max} [rpm]	12,000	18,000	12,000	17,000	10,000	6,000	9,000	7,200	6,000	6,000
Max. drive power at 100% / 40% duty cycle [kW]	29/39	29/39	40/52	40/52	20/26	20/26	54/65	80/100	63/78	31.5/36
G700	—	—	—	—	•	•	•	•	—	•
G720	—	—	—	—	•	•	—	—	—	—
G640	—	—	—	—	•	•	•	•	—	—
G840	—	—	—	—	•	•	•	•	•	•
G700F	•	•	•	•	•	•	—	—	—	—
G720F	•	•	•	•	•	•	—	—	—	—

* Motorized spindle with cross-feed unit; only in combination with tool changer arm and a SIEMENS control system. Subject to technical changes without prior notice.
 ** Special spindles for special-purpose machine construction available on request, configured according to customer requirements

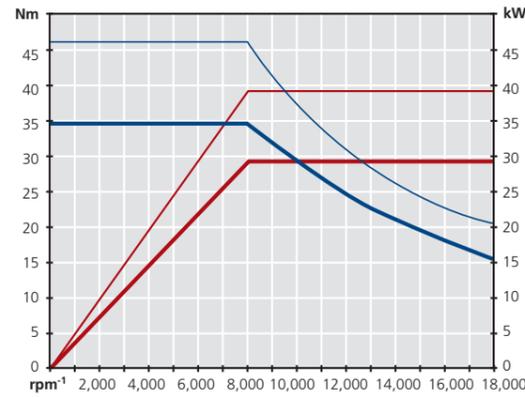
Torque – rotational speed – output

MOTORIZED SPINDLE VERSIONS

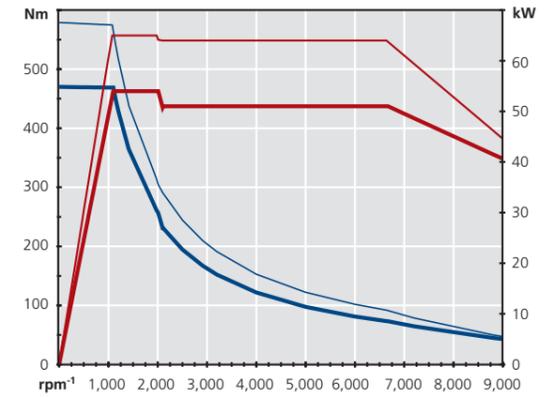
TYPE 4:
HSK-A63 ▶ Motorized spindle 47 Nm, 12,000 rpm⁻¹



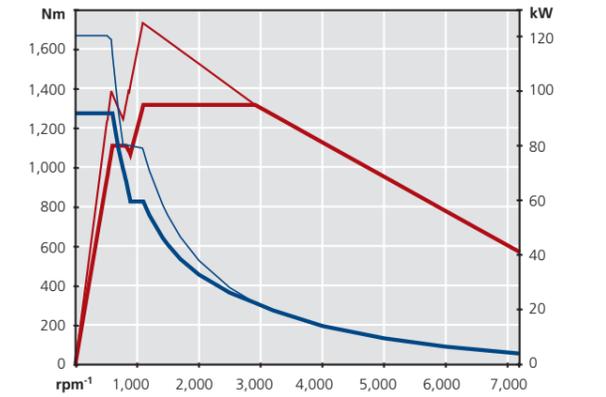
TYPE 1:
HSK-A63 ▶ Motorized spindle 47 Nm, 18,000 rpm⁻¹



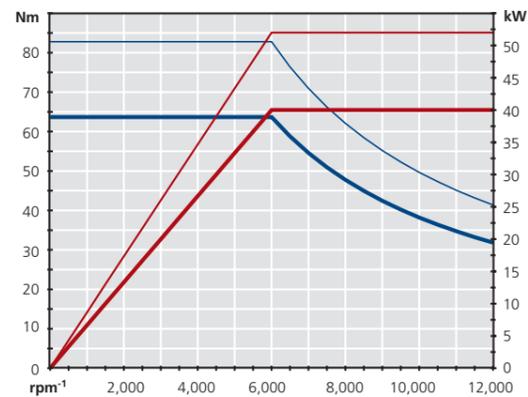
TYPE 7:
HSK-A100 ▶ Motorized spindle 575 Nm, 9,000 rpm⁻¹



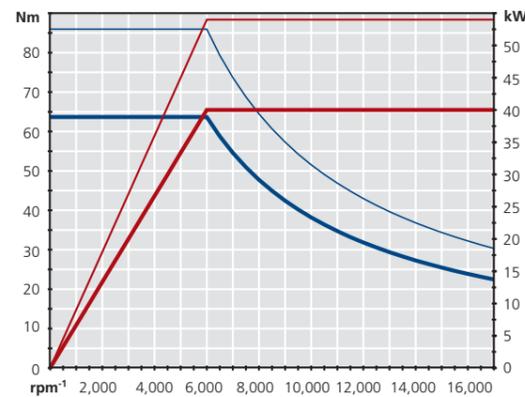
TYPE 8:
HSK-A100 ▶ Motorized spindle 1,666 Nm, 7,200 rpm⁻¹



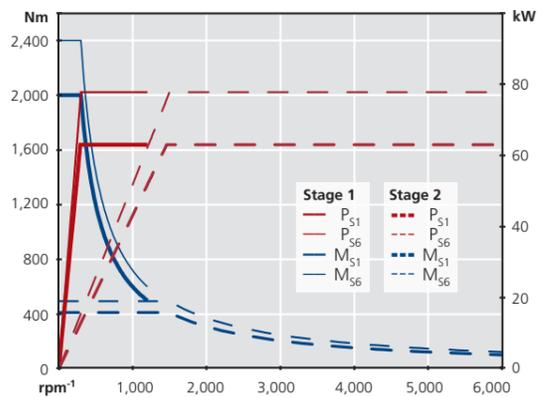
TYPE 5:
HSK-A63 ▶ Motorized spindle 83 Nm, 12,000 rpm⁻¹



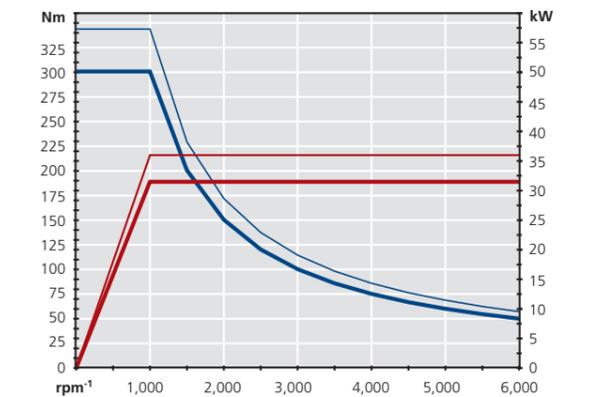
TYPE 38:
HSK-A63 ▶ Motorized spindle 86 Nm, 17,000 rpm⁻¹



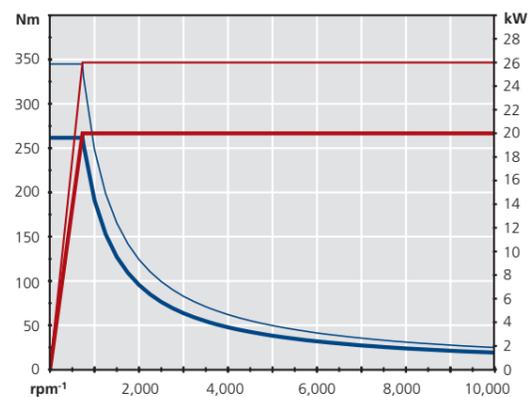
TYPE F2:
HSK-A100 ▶ Gearbox spindle 2,400 Nm, 6,000 rpm⁻¹



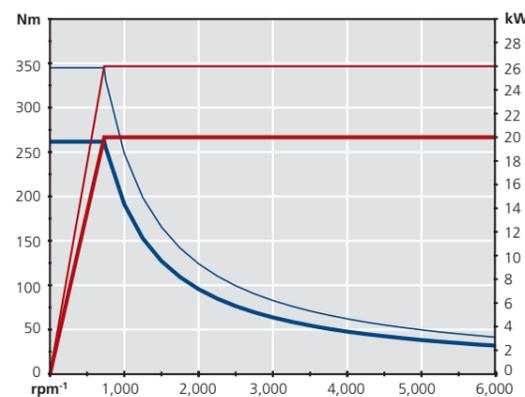
TYPE 22:
HSK-A100 ▶ Motorized spindle 344 Nm, 6,000 rpm⁻¹



TYPE 3:
HSK-A100 ▶ Motorized spindle 340 Nm, 10,000 rpm⁻¹



TYPE 6:
HSK-A100 ▶ Motorized spindle 340 Nm, 6,000 rpm⁻¹



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



*The ideal solution for
your project*

SPECIAL-PURPOSE MACHINE CON- STRUCTION AND AUTOMATION MADE BY GROB

Our customers in small, medium, and large-scale production have been relying on GROB automation solutions for decades. This expertise is directly reflected in our products and our special-purpose machine construction, making GROB a strong partner – from solutions with pallet or part storage systems to highly flexible turnkey production lines. GROB enables you to adapt flexibly to capacity requirements and guarantees a concept perfectly tailored to 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
- ⊕ Customized concepts for maximum loads in the heavy-duty sector



OUR AUTOMATION PORTFOLIO

#SwivelChangers #LinearGantries
#GRC #FlexibleManufacturingSystems
#TurnkeySystem

Turn-key manufacturing line

COMPLETE VALUE CREATION FROM A SINGLE SOURCE

The customer system shown here is a fully automated turnkey solution for machining complex large components. As part of the turnkey project, GROB supplied both the machining centers and the complete automation – consisting of a gantry system, robot automation, and automation system.

The linear gantry can be configured flexibly as either an I-loader or H-loader and is available with one or two vertical axes per carriage – ideal for short cycle times and maximum process reliability.

ROUGH PART STORAGE STATION

- ⊕ Optimized logistics and provision for continuous production processes

ROBUST PRE-MACHINING

- ⊕ Individually adapted to the component (cylinder bore; crankshaft half-round; combustion chamber side, (up to 9 mm machining allowance for GJL/CGI))

HIGH-PRECISION FINISHING OF THE ASSEMBLED CYLINDER BLOCK ("KING STAGE" MACHINING)

- ⊕ Component-specific configuration for maximum precision (cylinder bore; crankshaft; combustion chamber side; timing gear dowel holes)

GROB SWIVEL CHANGER

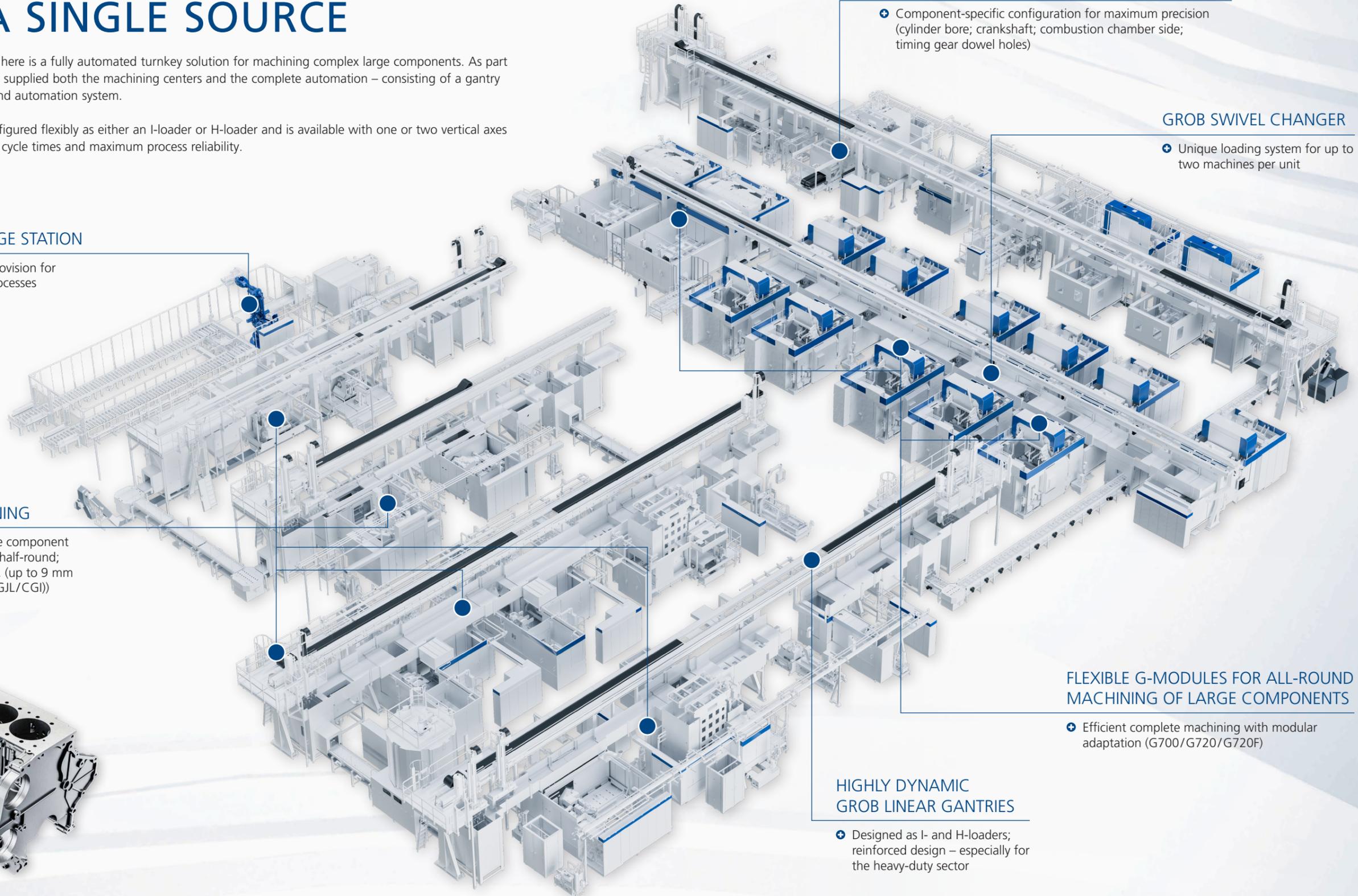
- ⊕ Unique loading system for up to two machines per unit

FLEXIBLE G-MODULES FOR ALL-ROUND MACHINING OF LARGE COMPONENTS

- ⊕ Efficient complete machining with modular adaptation (G700/G720/G720F)

HIGHLY DYNAMIC GROB LINEAR GANTRIES

- ⊕ Designed as I- and H-loaders; reinforced design – especially for the heavy-duty sector



Automation overview

THE IDEAL AUTOMATION SOLUTION FOR YOUR PROJECT



GROB MOBILE ROBOT

- Modular design – easily expandable to meet growing requirements
- Compact design – ideal for confined spaces
- Flexible positioning – can be integrated seamlessly into existing production environments



ROTARY PALLET STORAGE SYSTEM (PSS-R)

- Quick pallet change and innovative pallet handling unit
- Optimal access to the setup station allows pallet loading and unloading during the machining operation with accessibility from above, with optional clamping hydraulics
- Pallet storage racking with drip pans and optional cutting fluid recirculation

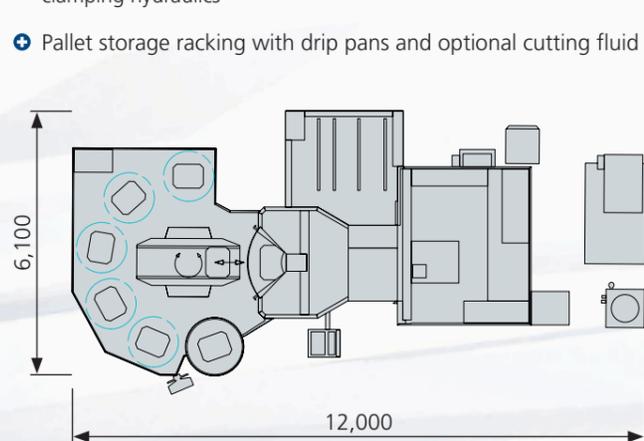


Fig.: G640 with pallet changer with PSS-R1800

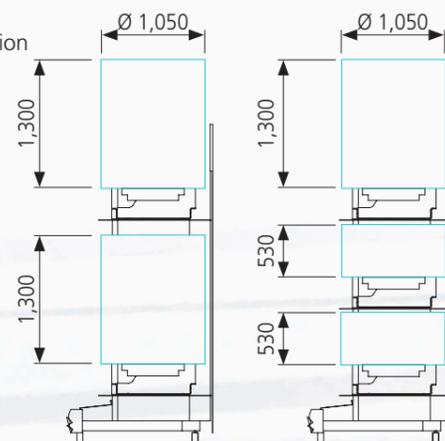


Fig.: 2 levels

Fig.: 3 levels

LINEAR PALLET STORAGE SYSTEM (PSS-L)

- Suitable for stand-alone machines and for interlinking identical machines
- Depending on the customer requirement, two or three magazine levels and the number of required setup stations can be freely selected for pallets of the same type
- Quick pallet change and innovative pallet handling unit
- Optimal access to the setup station allows pallet loading and unloading during the machining operation with accessibility from above
- Optimum access to the work area, good visibility for inserting parts and direct access to the work area/part

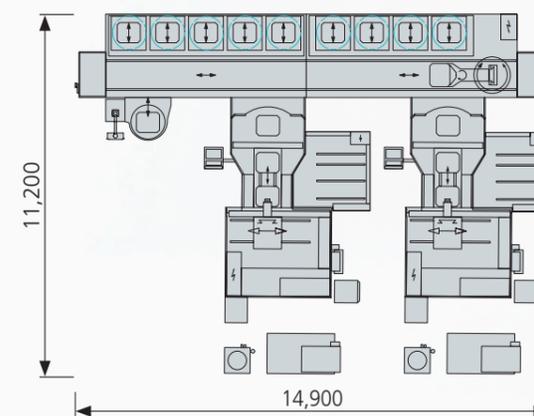


Fig.: G640 with pallet changer with PSS-L1800

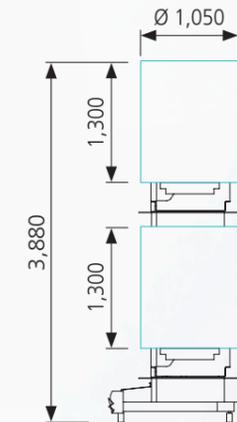


Fig.: 2 levels

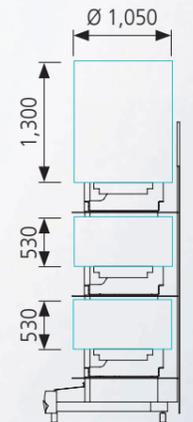


Fig.: 3 levels

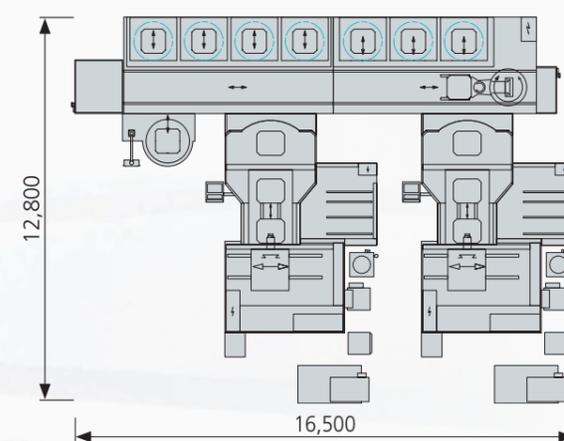


Fig.: G840 with pallet changer with PSS-L2700

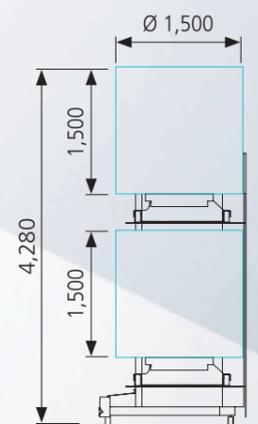
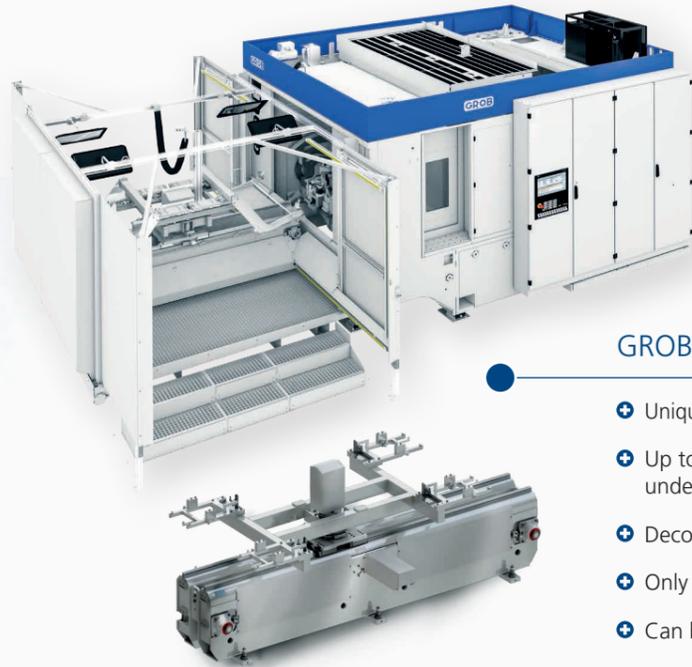


Fig.: 2 levels



Automation overview

THE IDEAL AUTOMATION SOLUTION FOR YOUR PROJECT



GROB SWIVEL CHANGER

- + Unique loading system for up to 2 machines per unit
- + Up to 8 swivel changer units and up to 16 machines under one linear gantry
- + Decoupling of the automation during machine run times
- + Only one fixture set required
- + Can be upgraded from manual to automatic loading



GROB ROBOT CELL (GRC)

- + Automation to fit your needs
- + Loading directly into the work area via double gripper
- + Integration of accompanying processes, e.g. deburring, washing, or marking of the parts
- + Standardized components allow quick installation and short commissioning times

AUTOMATION SYSTEM

- + Usable for all GROB machines
- + Zone and combination drive possible
- + Individual adjustment of the roller conveyor height
- + Adaptable to third-party products



Cartesian linear gantry



Cartesian linear gantry with telescope (option)

CARTESIAN LINEAR GANTRY

- + Fully automated direct loading from above
- + Available in three different versions
- + High efficiency thanks to simultaneous movement of both the horizontal and vertical level
- + Top loading provides free accessibility of the machine on the ground
- + Optionally available as a version with telescope for low hall heights

Overview

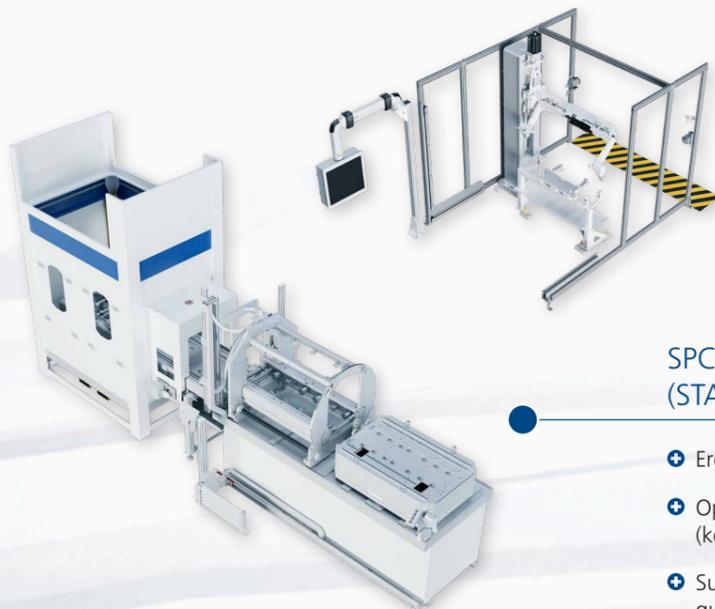
THE IDEAL SOLUTION FOR YOUR PROJECT

We develop customer- and part-specific solutions – from automation systems and measuring machines to complex special-purpose machines. We offer the right machine for every application and implement your requirements precisely.



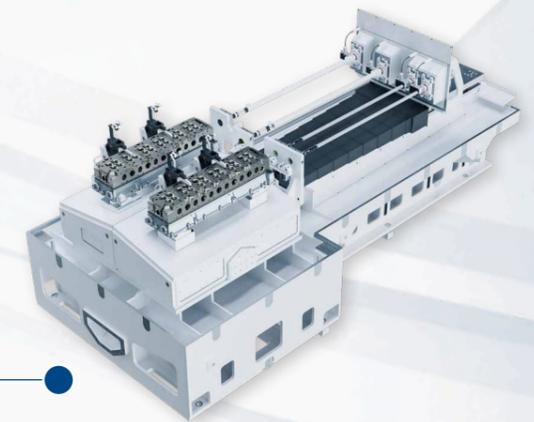
GROB BLOW-OFF BOX

- ⊕ Unique solution on the market
- ⊕ Cleaning with compressed air
- ⊕ "One-stop" solution, perfectly integrated into our automation solutions
- ⊕ Prevents cutting fluid carryover and facilitates SPC measurement thanks to clean parts



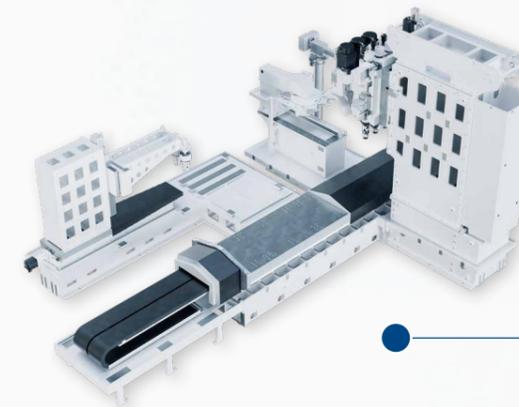
SPC STATIONS (STATISTICAL PROCESS CONTROL)

- ⊕ Ergonomic design for comfortable, manual measuring
- ⊕ Optimized for testing critical component features (key features)
- ⊕ Supports seamless process monitoring and quality documentation



MEASUREMENT MACHINE FOR CAMSHAFT AND CRANKSHAFT BORES

- ⊕ Precise measuring of camshaft bores
- ⊕ Automatic diameter compensation
- ⊕ Ideal for use in the automotive industry
- ⊕ Fast and reliable test results

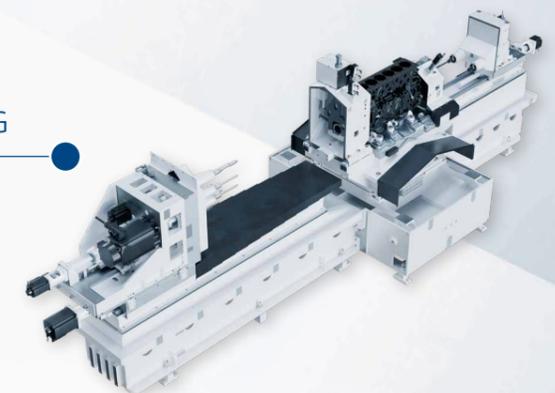


SPECIAL-PURPOSE MACHINE FOR MACHINING CYLINDER BORE AND COUNTERBORE DEPTH

- ⊕ Precise measurement of cylinder bore and counterbore depth
- ⊕ Automatic compensation for diameter fluctuations
- ⊕ Ideal for quality assurance in production

SPECIAL-PURPOSE MACHINE FOR MACHINING CRANKSHAFT AND CRANKSHAFT THRUST BEARING

- ⊕ Process-reliable and reproducible
- ⊕ Suitable for demanding manufacturing environments
- ⊕ Integrated automatic diameter compensation possible thanks to downstream measuring machine
- ⊕ Simultaneous machining of locating holes on both end faces for shortest machining times

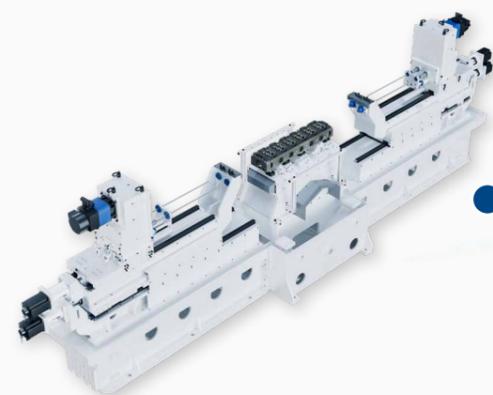
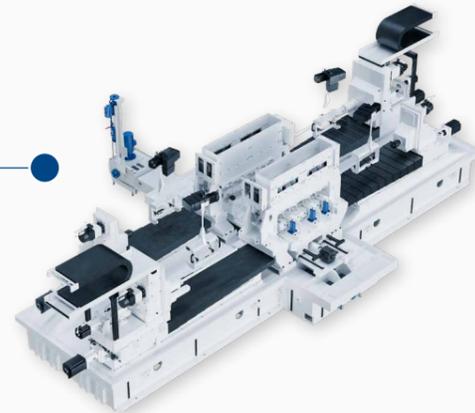


Overview

THE IDEAL SOLUTION FOR YOUR PROJECT

SPECIAL-PURPOSE MACHINE FOR CYLINDER HEAD FINISHING

- + Camshaft finishing at the highest level of precision
- + Reaming of the gear drive dowel holes for a perfect fit
- + Two stations for different cylinder head types
- + Efficient throughput for high output

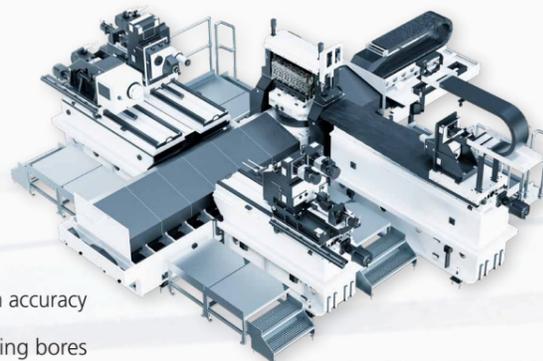


SPECIAL-PURPOSE MACHINE FOR DEEP HOLE DRILLING ON CYLINDER HEAD

- + Deep-hole drilling of the fuel channel from both end faces
- + Two machining units for different variants Top-side loading and unloading via gantry system
- + Top-side loading and unloading via gantry system

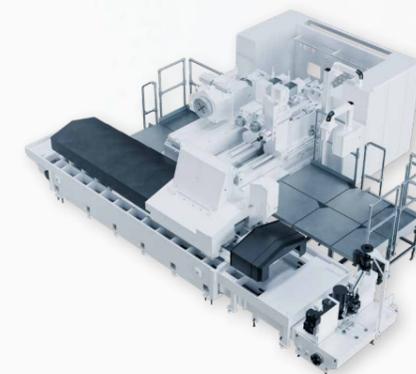
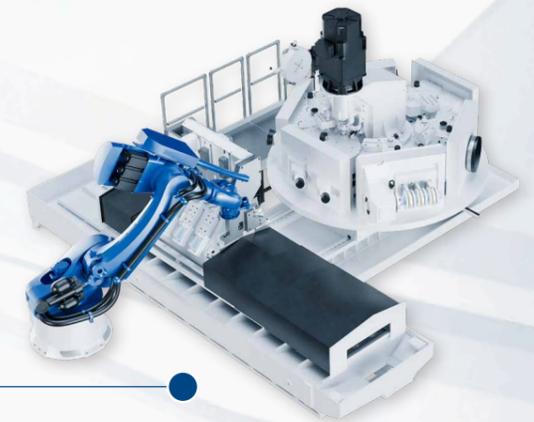
SPECIAL-PURPOSE MACHINE FOR CYLINDER HEAD FINISHING

- + Fully automated loading and unloading by robot
- + Indexed machining of the combustion chamber side for maximum accuracy
- + Integrated finishing of the dowel hole and rocker arm positioning bores
- + Precision finishing of the combustion chamber side, camshaft bore, and crankshaft thrust bearing



SPECIAL-PURPOSE MACHINE FOR CYLINDER BLOCK ROUGH MACHINING

- + Roughing of crankshaft semi-circular bearings with high stability
- + Roughing of oil pan and bearing cap seat in one clamping setup
- + Machining of bearing bridge widths on left and right in separate units
- + Semi-finishing of the oil pan for subsequent fine machining
- + Indexed drilling and reaming of the oil pan for precise fits
- + Robot-based loading and unloading for continuous automation

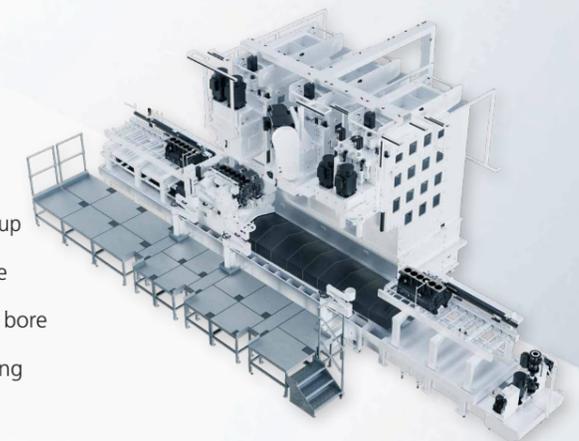


SPECIAL-PURPOSE MACHINE FOR CYLINDER HEAD MACHINING WITH MEASUREMENT

- + Finish milling of the combustion chamber side with maximum accurate repeatability
- + Taper turning for finishing of valve seat and guide
- + Integrated measuring station for in-process quality assurance
- + Robot-based loading and unloading for short cycle times

SPECIAL-PURPOSE MACHINE FOR CYLINDER BLOCK ROUGH MACHINING

- + Machining of the combustion chamber side in one clamping setup
- + Water jacket roughing with cross-feed – powerful and precise
- + Twin-spindle unit for highly efficient roughing of the cylinder bore
- + In-line machining from left to right with automated interlinking
- + Gantry unloading for rapid further processing
- + Loading via linear gantry or from the automation system, optionally with tool changer and up to 3 spindles





Moving into a digital future **INDUSTRY 4.0**

Transparency and connectivity – our modular GROB-NET⁴Industry 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-NET⁴Industry combines relevant modules for increasing productivity and offers you an all-round package for modern production in the Industry 4.0 era.

- ✦ GROB⁴LINE – watch the machine on your smartphone
- ✦ GROB⁴ANALYZE – machine feedback for the CIP
- ✦ GROB⁴INTERFACE – easy route to machine communication
- ✦ GROB⁴TRACK – machine axes in view at all times



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
#SpareParts #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 15 worldwide service centers and sales subsidiaries, we are represented around the globe, ensuring the highest quality.

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- Pianezza, Italy
- Stratford-upon-Avon, Great Britain
- Hengelo, Netherlands
- Lyon, France
- Baar, Switzerland
- Poznań, Poland
- Győr, Hungary
- Istanbul, Türkiye
- Steyr, Austria

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FOUNDED IN 1926

NORTH AMERICA

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- Detroit, Michigan, USA
- Querétaro, Mexico

6 PLANTS

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- Yokohama, Japan
- Suwon, South Korea
- Haiphong, Vietnam
- Bangkok, Thailand

Our global production sites



Mindelheim, Germany



São Paulo, Brazil



Bluffton, USA



Dalian, China



Pianezza, Italy



Bangalore, India



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GROB-WERKE GmbH & Co. KG

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#AssemblyPlants #Electromobility
#Automation #AdditiveManufacturing #Digitalization
#NewAndQualityCheckedUsedMachines #Service*



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