EXPERT'S PRIDE

MULTIPROCESS HORIZONTAL LATHES

"ALL IN ONE"

GEMINIS

MAHER HOLDING

GEMINIS

EXPERT´S PRIDE: CUSTOMER ORIENTED

We are leaders in the development of horizontal and multi-process lathes.

More than 60 years of experience and active listening to our customers guide us in designing and manufacturing our equipment and creating machines that are EXPERT´S PRIDE.

The values that guide our work are:

RELIABILITY

The reliability of a machine is defined as the likelihood that the machine will perform in accordance with established parameters of availability, accuracy, productivity and durability.

Our reliability is based on:

· Robustness of the structural bodies.
· In house machining of critical components.
· World-Class suppliers.

HUMAN CENTRIC DESIGN

Respect for the operator, the workshop and the environment inspires the design of the equipment manufactured by **GEMINIS LATHES.**

This respectful design is embodied in:

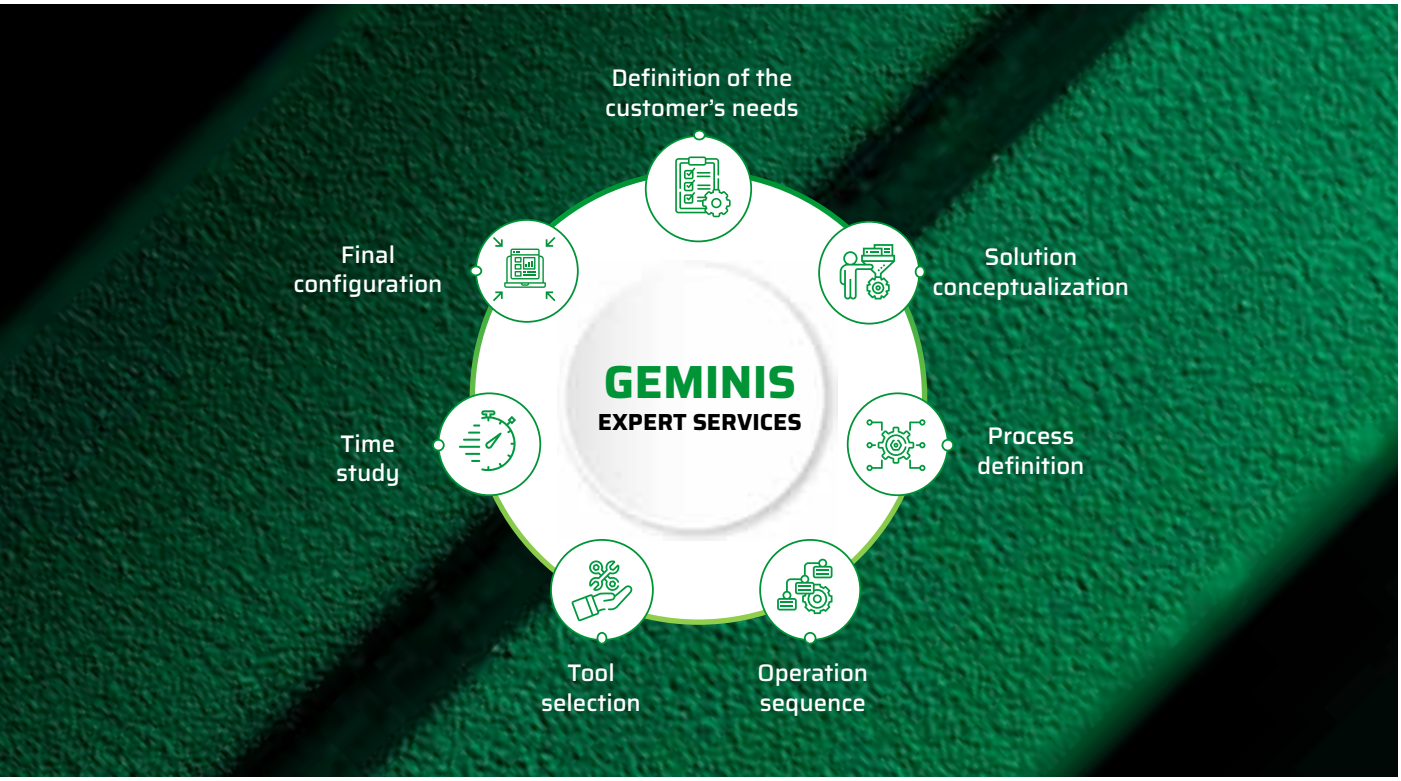
· Ergonomy.
· Order and Cleanliness.
· Ecodesign.

SPECIALIZATION

GEMINIS LATHES designs and manufactures equipment that responds to the needs of its customers and has become a reference supplier in leading and strategic industrial sectors.

GEMINIS LATHES manufactures the equipment that its customers need as a result of:

· Engineering process.
· Multiprocess solutions.
· Adaptability.



ENGINEERING PROCESS

The design process for **GEMINIS** equipment starts with active listening to the customer and covers all the fundamental aspects of creating a solution that meets all their needs in terms of capacity, precision and productivity.

Constant communication with our engineering department allows the customer to configure the multiprocess equipment best suited to their needs and circumstances, down to the smallest detail, with the help of **GEMINIS**.

ACCOMPANIMENT THROUGHOUT THE WHOLE ENGINEERING PROCESS

MULTIPROCESS LATHES

PRODUCTIVITY IS THE GOAL

THE MOST PRODUCTIVE LATHE FOR PARTS WITH MULTIPLE OPERATIONS

. HIGH VALUE-ADDED PARTS
. CRITICAL OPERATIONS
. COMPLEX MACHINING
. MAXIMUM PRECISION AND CONTROL




MULTIPROCESS MACHINES

THAT INTEGRATE TURNING, MILLING, BORING AND GRINDING HAVE SEVERAL ADVANTAGES COMPARED TO CONVENTIONAL MACHINES

TO INTEGRATE IN ONE UNIQUE MACHINE THE CAPACITY TO MAKE DIFFERENT MACHINING PROCESSES ALLOWS THE PART TO BE FINISHED IN ONE SET UP

- Down time reduction due to one set up machining.
- Minimization of risk in part manipulation.
- Less required space in the workshop.
- Failure minimization due to one set up machining.
- Elimination of movements of the part.
- Elimination of intermediate storage.

GEMINIS MULTIPROCESS

“ALL IN ONE” MACHINE ADVANTAGES

ALL OF GEMINIS’ EXPERIENCE IN DEVELOPING THE GTI RANGE OF HORIZONTAL LATHES FOR MAXIMUM ROBUSTNESS IS TRANSFERRED TO THE MULTIPROCESS RANGE. THE BEST MACHINE ARCHITECTURE FOR THE BEST USER EXPERIENCE

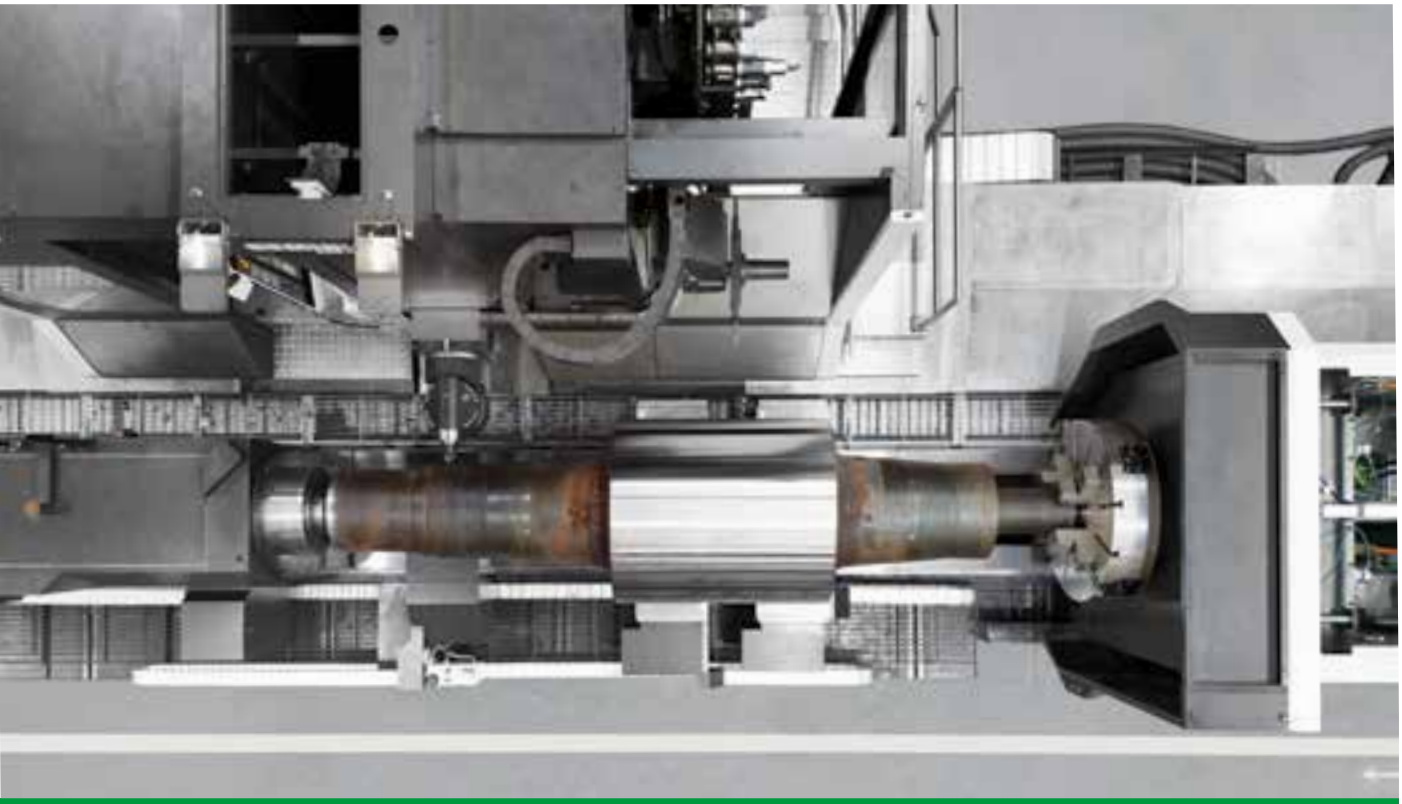
“STATIC” ADVANTAGE

Our multiprocess equipment places the center of gravity of the part to be machined completely inside the bed and in the center with respect to the guideways.

This advantage gives the assembly the capacity to machine heavy parts, as well as great stability, robustness and machining precision.

“DYNAMIC” ADVANTAGE

The positioning of the tool in a plane parallel to the guideways avoids adding extra loads to the workpieces during the machining process.



“ALL IN ONE” MACHINE ADVANTAGES

- We can machine parts of large size and high value.
- Our machine is more ergonomic.
- The operator can monitor the machining process directly and from close proximity.
- Our machine is more robust because the center of gravity of the part to be machined is located in the central part of the bed.
- The chip removal capacity is far superior.
- Our design is very open and adapts to the customer’s needs.
- Multiprocessing capability.
- Automatic head change.
- Automatic tool change.
- Higher productivity.
- Highly configurable.
- Diversity of clamping systems and workpiece centering solutions.
- The best solutions for chip and coolant evacuation and management.
- Multi-process lathes with easier cleaning.

GEMINIS MULTIPROCESS

“ALL IN ONE” MACHINE ADVANTAGES

QUICK DEVICE EXCHANGE SYSTEM
IMPROVEMENT IN MACHINE OEE AVAILABILITY
REDUCTION OF ADJUSTMENT TIMES

The **GEMINIS** multi-process devices allow operations to be carried out on a part fixed on the lathe, increasing the capacity of the lathe and reducing times, errors and risks due to the handling of heavy and valuable parts.

1

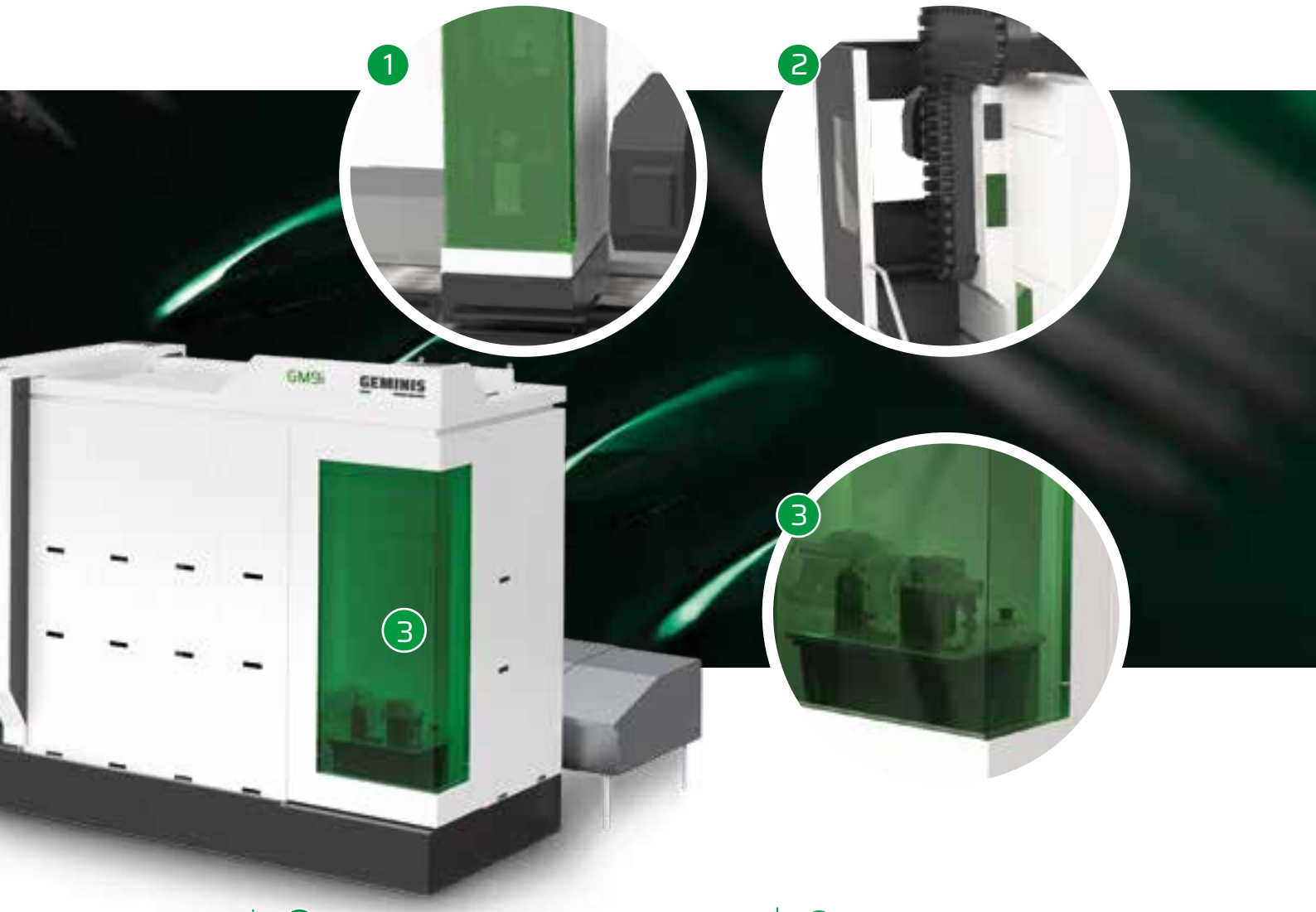
MACHINING DEVICE PICK-UP MAGAZINE

. All devices are stored in a pick-up magazine.
. Automatic change of machining devices, adjustable according to machine configuration and number of devices.

2

ATC TOOL MAGAZINE

. Tool change in horizontal position in both heads.
. Protected in external side.
. System for manual extraction of tool.
. Allows to add or remove tools while the machine is running.
. Tool cleaning system included.
. Tool management in the PLC and touch panel for ATC manipulation.



3

MAINTENANCE AREA

. Transparent maintenance area door.
. Direct visual control.
. Easy access to maintenance area.
. Easy access to pneumatic and hydraulic components.
. Centralized lubrication system.
. Fast maintenance operations.

HEADSTOCK MAINTENANCE AREA

. Removable panels.
. Easy access to headstock maintenance.
. Fast maintenance operations.

4

ENCLOSURE

. Full enclosure option.
. Prevents from chip or coolant splashes out of the machine.
. Great cleanliness in the work enviroment.

GEMINIS MULTIPROCESS

"ALL IN ONE" CONSTRUCTIVE CHARACTERISTICS

GMi TWIN DRIVE HEADSTOCK:

- For accurate "C" axis.
- Double gearbox motor.
- Two operation modes: Milling and turning.
- Maximum accuracy and Dynamic behaviour during milling mode by means of electronically preloades slave and master drives.
- High precision optical encoder assembled on the main axis.
- Optional centrically assembled brake for heavy duty cutting (positioning accuracy 0,001º).
- Thermally stabilized by cooled oil circulation.

GMi MULTIPROCESS COLUMN:

- X, Y and Z displacements by roller guides.
- Z axis displacement by master-slave electrically preloaded double pinion rack.
- Safety brake in vertical axis.
- Ram fall hydraulic compensation system.
- Vertical hydraulic compensation system.
- Hydraulic clamping systems for X and Y axis.

GMi BED:

- Very high stiffness for accurate machining.
- Single bed construction with two different sides.
- Workpiece side. Prismatic friction guideways.
- Multiprocess columna side. Roller guideways size 55.
- Made in EN-GJL-300 quality and thermally stabilized grey cast iron. Hardened guideways (450 HB).
- No interferences of slides movements with tailstock and steadies.

GMi TAILSTOCK:

- Motorized movement controlled from the tailstock itself or by CNC.
- Security clamping through mechanical cylinders with hydraulic unclamping.
- Automatick locking system of the quill for elimination of gaps.
- Cooled bearings.
- Thermally stabilized by cooled oil circulation.

GMi CHIP EVACUATION:

- For a clean and tidy workplace.
- Optimized chip and coolant evacuation design, allowing the thermal stability of the bed to be maintained.
- Two chip conveyors in both sides of the workpiece area.
- Machine and fundation is designed to recover all the coolant and avoid any leakage to the machine perimeter.

MAXIMUM PRODUCTIVITY

PRODUCTIVITY

- **High dynamic on slides & C axis.**
- **Wide range of machining heads.**
- **Automatic head change system.**
- **Automatic tool change.**
- Ram system to access narrow areas.

ACCURACY

- High accuracy C axis.
- Very good thermal stability.
- High positioning precision and repetibility.
- Specifically designed measuring strategies.

ERGONOMY

- **Optimal view of working area.**
- **Ergonomic position operator/work piece.**
- Adjustable control panel height.
- **GEMINIS** Smart Factory solutions
- Adjustable control panel height.
- PTZ video system.
- Cabin temperature control.

SPECIALIZATION

- Enginiered turnkey projects.
- Customized solutions according to customer requirements by building quality and reliable machines.

GEMINIS MULTIPROCESS

"ALL IN ONE" MACHINING HEADS

I Heavy duty turning.

GEMINIS LATHES HAS DEVELOPED A WIDE RANGE OF DEVICES THAT ALLOW DIFFERENT MACHINING AND FINISHING OPERATIONS TO BE CARRIED OUT ON PARTS

AUTOMATIC DEVICE CHANGING SYSTEM

- All devices are stored in the automatic pick up magazine.

CHAIN TYPE TOOL MAGAZINE

- Fixed magazine in the left side of the columna.
- Tool change in horizontal position in both heads.
- Protected in external side.
- System for manual extraction of tool.
- Allows to add or remove tools while the machine is running.
- Tool cleaning system included.
- Tool management in the PLC and touch panel for ATC manipulation.

HORIZONTAL MILLING HEAD

.

I 5 axis machining.

I B-axis milling head.

I OD / ID Grinding.

I Horizontal milling.

I Boring head.

ORTHOGONAL MILLING HEAD

- B and S axis movements.
- A axis movement as an option.
- Pearlitic grey cast iron quality EN-GJL-300 (UNE-EN 1561).

HEAVY DUTY TURNING HEAD

- HSK-100 T tool.
- Capto C8 available.
- Hydro mechanic type clamping system.
- Internal cooling.
- External cooling.
- Pearlitic grey cast iron quality EN-GJL-300 (UNE-EN 1561).

GRINDING HEAD

- Manual orientation of the grinding wheel in A axis.
- Wheel capacity up to Ø700 x 80
- Grinding wheel flange and balancing shaft.
- Diamond holder mounted on tailstock.
- Water cooled.
- Automatic balancing system and acoustic sensor.
- Special Geminis cycles for cylindrical, face and tapper grinding.
- Pearlitic grey cast iron quality EN-GJL-300 (UNE-EN 1561).

BORING HEAD

- Antivibratory silent tool tuned damped bar for better Surface finish.
- Internal cooling.
- External cooling.
- Modular quick change cutting unit.
- Pearlitic grey cast iron quality EN-GJL-300 (UNE-EN 1561).

CUSTOMIZED MACHINING UNITS UNDER REQUEST

GEMINIS MULTIPROCESS

INTEGRAL CLAMPING SYSTEM

THE STEADY REST PERMITS TO WORK WITH DIFFERENT CLAMPING AND CENTERING SOLUTIONS PENDING ON THE PROCESS THAT THE MULTI-PROCESS LATHE IS DOING, THESE FROM BELOW ARE THE POSSIBILITIES

CONTACT WITH ROLLERS
(For standard accuracy)

- Highly interesting for turning and milling operation.
- Very easy to adapt to different diameters.
- Bearings as rollers.

CONTACT WITH BABBIT
(For semi-precise accuracy)

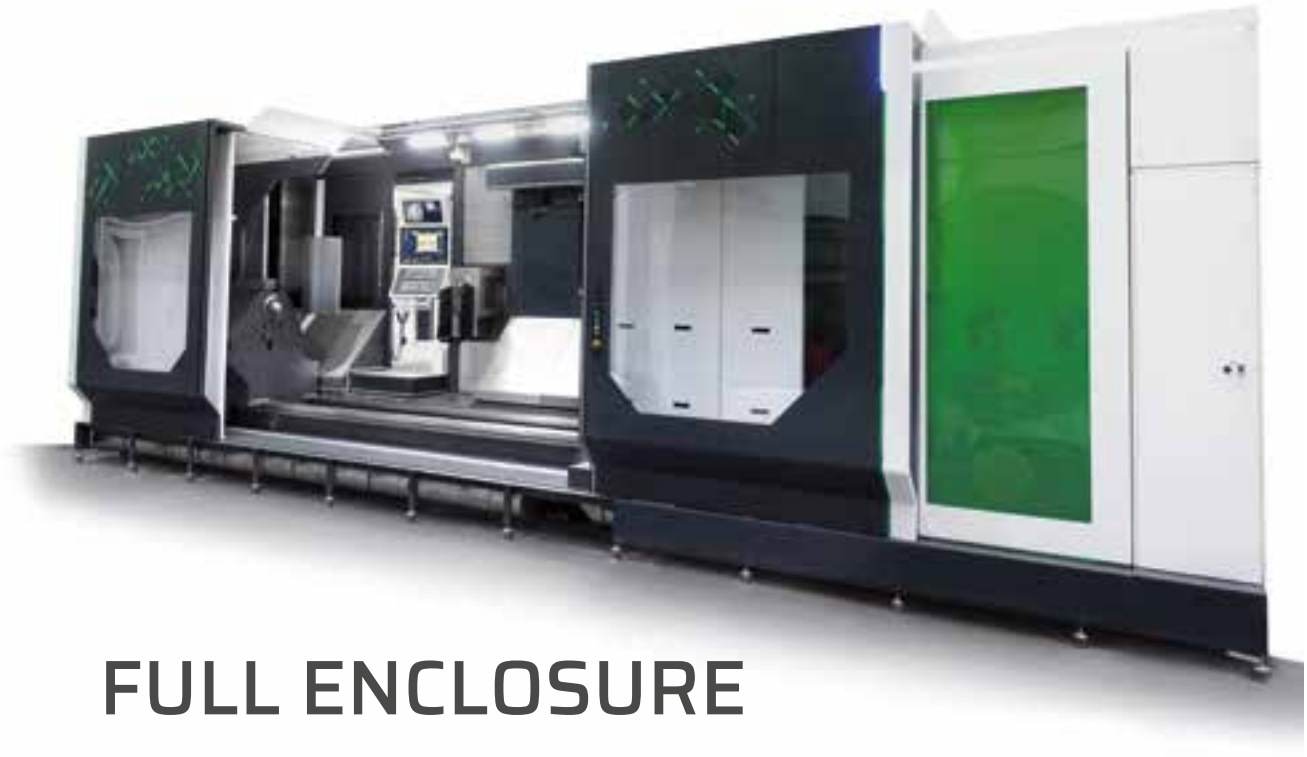
- Highly interesting for turning and milling operation.
- Very easy to adapt to different diameters.
- Bearings as rollers.

CONTACT WITH HYDROSTATIC LOWER PAD
(For precise accuracy)

- Allows grinding operations in work pieces up to 60 TN (using both steadies).
- Reduces the run out obtained while grinding (less than 0,005 mm).
- Does not generate any wear in the contact point (roller or babbitt) as the work piece is not touching directly the pad.

t tailstock

Combined steady rests (hydrostatic & roller or babbitt contact type).



FULL ENCLOSURE

COMPLETE PROTECTION OF THE ENVIRONMENT AND OPERATORS DURING THE MACHINING OF NON-METALLIC MATERIALS: COMPOSITES, FIBERGLASS...

FULL ACCESSIBILITY

· Full access to the workpiece and machining area.
· No need to open the front protective doors.

DIRECT AND SECURE VISION

. The operator has a direct view of the machining process.
. The control cabin provides a safe view during the machining process.

GEMINIS MULTIPROCESS
ACCURACY SYSTEM

MULTI-PROCESS EQUIPMENT WITH FULL INTEGRATION OF MEASURING INSTRUMENTS TO ENSURE HIGH MEASUREMENT ACCURACY DURING THE MACHINING PROCESS

TOOL MEASUREMENT
· To adjust lenght and diameter of tool.
· Detection of broken tool.
· Tool wear compensation.

WORKPIECE MEASUREMENT
· Centering measurement.
· Align measurement.
· Part measurement.

ROUGHNESS MEASUREMENT
· Measuring of the roughness of the part.

ROUGHNESS MEASUREMENT
· Measuring of the roughness of the part.

VOLUMETRIC COMPENSATION

3D CMM SOFTWARE FOR CNC MACHINE

LEAN DIGITAL MANUFACTURING

AT **GEMINIS** WE DEVELOP SOLUTIONS FOR SMART FACTORIES

OUR SMART MACHINES INTEGRATE INDUSTRY 4.0 SOLUTIONS

SMART HMI

Interface developed by **GEMINIS** for the integral management of all the Industry 4.0 solutions.

Simple and user-friendly monitoring of main parameters, visualization of drawings, self-diagnosis cycles, integral tool management, integrated management plan.

SMART FACTORY

The best tool to know the state and performance of all your machinery pool, and increase their efficiency, quality and profitability.

Using smart sensors and with an interface developed by **GEMINIS**, we achieve the integral management of all the Industry 4.0 solutions, simplifying the planning process.

SMART APPS

We use smart sensors controlled by applications installed in our machines.

See the advantages of our 4.0 tools at
geminislathes.com

GM HORIZONTAL MULTIPROCESS LATHES

Watch videos on this QR code

MULTIPROCESS GMi

SPECIFICATIONS	GM5i	GM7i	GM9i
Max. turnable swing **(mm)**	1.300/1.500	1.600/1.800	2.000/2.500
Distance between centres **(m)**	1 - 24	1 - 24	1 - 24
Main spindle power **(kW)**	56 - 84	56 - 92	74 - 120
Max. Torque **(Nm)**	17.600 - 26.400	14.700 - 28.000	23.000 - 120.000
C axis positioning accuracy **(º)**	0,001	0,001	0,001
Slides speed **(m/min)**	25	25	20
Vertical travel "Y" **(mm)**	1.100 (+880/-220)	1.400(+940/-460)	1.000(+750/-250)
Cross Ram slide travel "X" **(mm)**	900	900	1.200
Milling power **(kW)**	37/52	37/52	37/52
Milling torque **(Nm)**	1.300/1.650	1.300/1.650	1.300/1.650
Milling speed (2 ranges) **(min-1)**	3.000/4.000	3.000/4.000	3.000/4.000
Turn-milling toolholder	HSK 100/ Capto C8	HSK 100/ Capto C8	HSK 100/ Capto C8
Turn-milling head indexing degrees "a" and "b" axis **(º)**	1/0,003	1/0,003	1/0,003
Tool magazine	30 - 120	30 - 120	30 - 120
Weight between centres **(kg)**	15.000	30.000	80.000

I Finishing of turbine Blade fir tree roots.

I Turning part on GM9i machine.

GM HORIZONTAL MULTIPROCESS LATHES

MULTIPROCESS
GMi

I Gas turbine.

. THE MOST PRODUCTIVE MULTIPROCESS EQUIPMENT

. FOR HIGH VALUE-ADDED PARTS AND WITH SEVERAL OPERATIONS

. WE GUARANTEE CRITICAL OPERATIONS AND COMPLEX MACHINING

I Gas turbine.

I Gas turbine axle.

I Gas turbine.

SECTORS AND APLICATIONS

THESE ARE OUR BEST REASONS

We are recognized as partners of leading customers in different sectors to develop the most demanding applications.

OUR CUSTOMERS ARE OUR BEST GUARANTEE






STEEL MANUFACTURING ROLLING ROLLS

GEARBOX SHAFTS

AEROSPACE INDUSTRY

GAS AND STEAM TURBINE SHAFTS

GENERATOR SHAFTS

SHIP BUILDING

GEMINIS
MAHER HOLDING

Geminis Lathes S.A.
Lerún, 1 · 20870 Elgoibar
Gipuzkoa (Spain)

Tel: (+34) 943 748 060 · Fax: (+34) 943 744 182
sales@geminislathes.com

www.geminislathes.com
www.maherholding.es

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