

HORIZONTAL MACHINING CENTER



Pinnacle Machine Tool Co., Ltd.

No.35, Aly. 15, Ln. 330, Shenzhou Rd., Shengang Dist.,
Taichung 42949, Taiwan

TEL:886-4-25252995

FAX:886-4-25252991

E-mail:info@pinnacle-mc.com <http://www.pinnacle-mc.com>

1000.2012.10



A Dependable Source for Outstanding Machinery to Compliment Your Workforce

HORIZONTAL MACHINING CENTER

LH500A

- 500 x 500 mm Table
- 650 x 560 x 560 mm Travel
- Index Table $1^\circ / 0.001^\circ$
- 11/15 KW Spindle Motor
- Chain Type 40-Tool ATC
- ISO40 Spindle Taper
- X,Y,Z axis rapid traverse 30/24/30 m/min



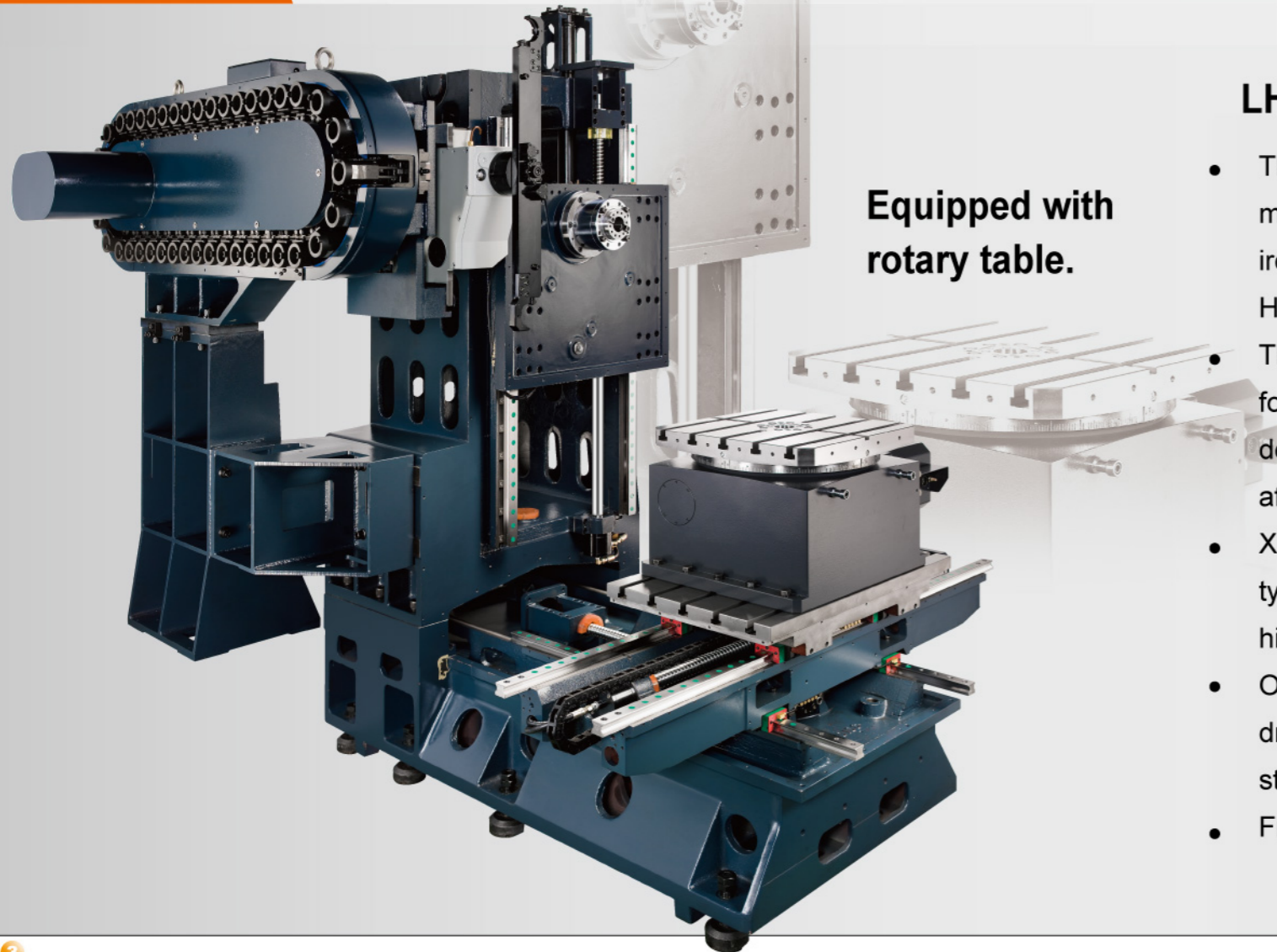
LH500B

- 500 x 500 mm Table x 2
- 650 x 560 x 560 mm Travel
- Index Table $0.001^\circ / 1^\circ$
- 11/15 KW Spindle Motor
- Automatic pallet change
- Chain Type 40-Tool ATC
- ISO40 Spindle Taper
- X,Y,Z axis rapid traverse 30/24/30 m/min



OPTIMAL STRUCTURE DESIGN

LH500A



Equipped with rotary table.

LH 500A / LH 500B FEATURES

- The major structural parts are manufactured from Meehanite cast iron, hardened to hardness over HB190.
- The structural parts are tempered for stress relief that ensures deformation-free performance year after year.
- X, Y, Z axis are mounted with roller type linear ways, exhibiting extra high rigidity and loading capacity.
- Oversized column structure dramatically increases machining stability.
- Fixed column construction.

LH500B

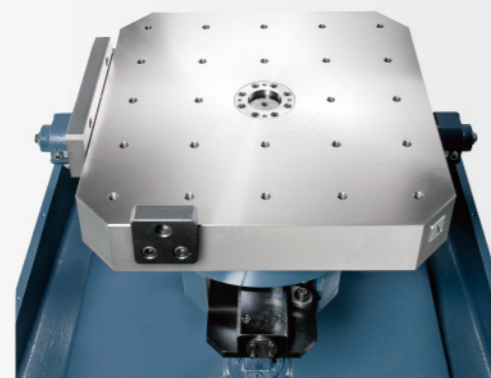
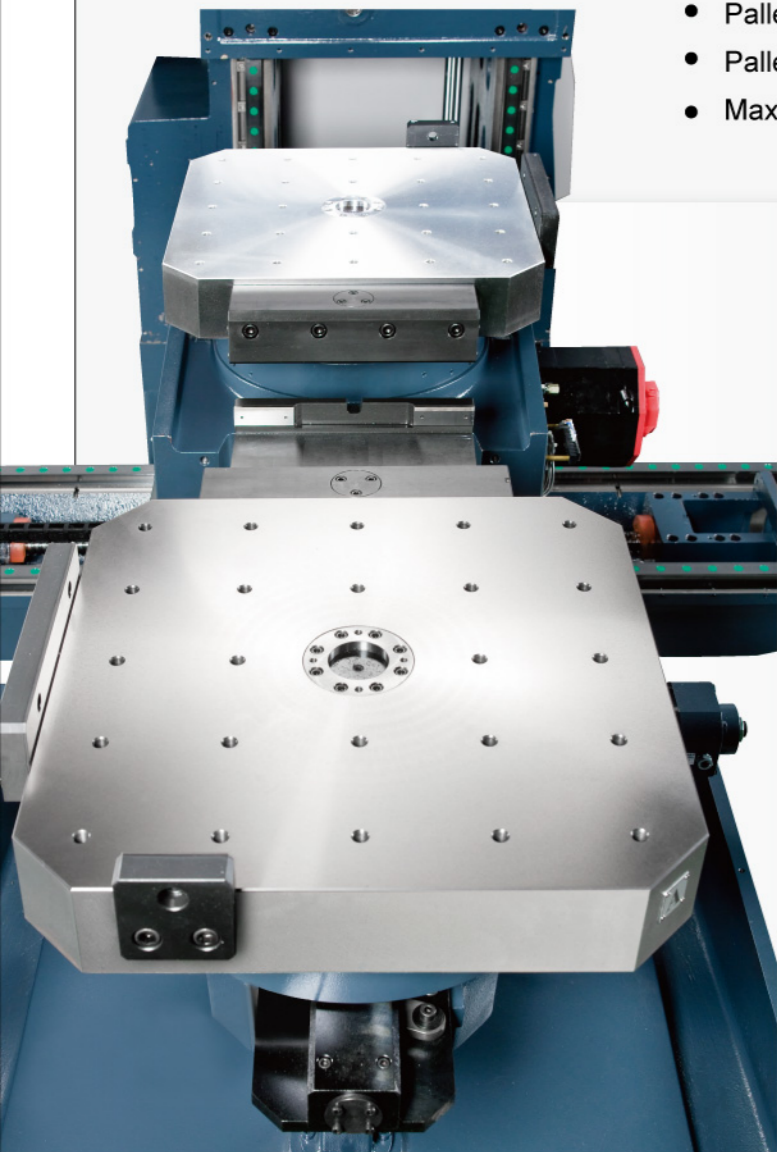


Equipped with automatic pallet change.

High Rigidity!
Exceptional Stability!

AUTOMATIC PALLET CHANGE (LH 500B)

- Swing type automatic pallet change features stable construction and smooth change motion.
- Pallet change is fast - accomplished in only 8 seconds.
- Pallet positions on oversized cones that guarantee high positioning accuracy.
- Max. pallet loading capacity is 400kg.



ROTARY TABLE (LH 500B)

HEAVY-CUTTING RESITANCE The rotary table is designed with hydraulic-expansion circular locking mechanism. During locking, the complete circumference is completely tightened. This results in higher rigidity and increased heavy cutting resistant capability.

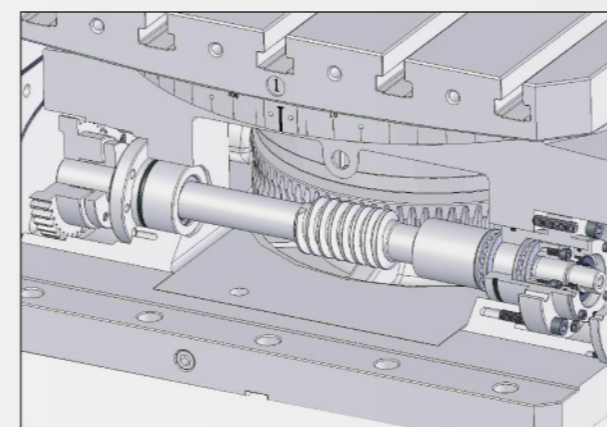
ROTARY TABLE (LH 500A)

- **HIGH ACCURACY** The rotary table employs three-piece teeth plate for high accuracy indexing.
- **HEAVY-CUTTING RESISTANCE** The three-piece teeth plate combined with hydraulic locking mechanism allows full teeth engagement. This results in higher rigidity and increased heavy cutting capacity.



GEAR BOX (Option)

- The spindle running is transmitted through a gear box, making the machine excellent for heavy cutting applications.
- With the gear box, the spindle provides two speed changes. The low speed range is 40~2000 rpm, and high speed range is 2001~8000 rpm. The wide speed range permits the machine to perform heavy cutting and fine finishing.
- All gears and bearings in the gear box are oil-bath lubricated.



DUAL PITCH WORM / WORM GEAR SET

The transmission mechanism employs high efficiency "Dual Pitch Worm / Worm Gear Set" for increasing teeth engagement percentage. This outstanding feature offers increased efficiency and wear-resistant capability.

Each Pinnacle machine is subject to dynamic and static accuracy tests. Pinnacle machine accuracy meets ISO 10791 VDI 3441, ISO 230, JIS B6388 and ASMEB5 standards.

ACCURACY

Standard		Axis Travel >500mm<800mm	
		ISO 10791-4	Pinnacle
Tolerances	Bi-directional Positioning	A: 0.025	0.003mm
	Bi-directional Repeatability	R: 0.015	0.003mm

JIS B6336-4 shows the same value as ISO Standard:
P value of VDI / DGQ3441 is equivalent to A of ISO10791-4, and PS is equivalent to R
All values shown above are measured for machine in good air conditioned environments.



<< TWO SCREW TYPE CHIP CONVEYORS ON BASE

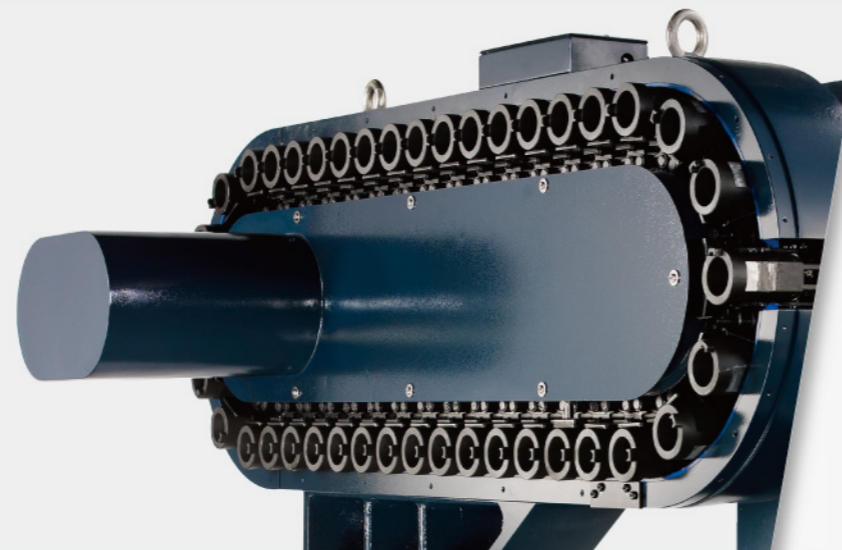
There are two screw type chip conveyors provided at right and left side of the base. During cutting, the chips are delivered through these chip conveyors for exhausting chips outside of the machine.

<< CHAIN TYPE CONVEYOR (OPTIONAL)

The chip conveyor is available to be mounted at the backside of the machine. It removes chips efficiently.

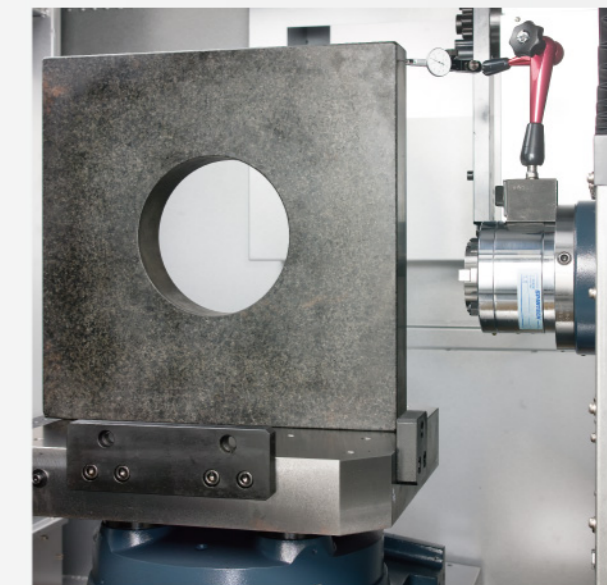
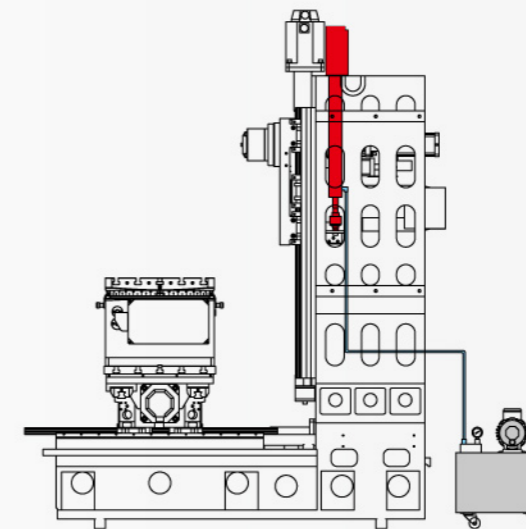
40 TOOLS CHAIN TYPE MAGAZINE (STANDARD)

- The magazine is driven by a precision cam, featuring fast and accurate tool positioning.
- Tool selection is bi-directional and random for fast tool change.
- The magazine accepts ISO40 tool shank.
- The magazine is separately mounted from the cutting area combined with a protection door to protect tools from contamination from chips or coolant.

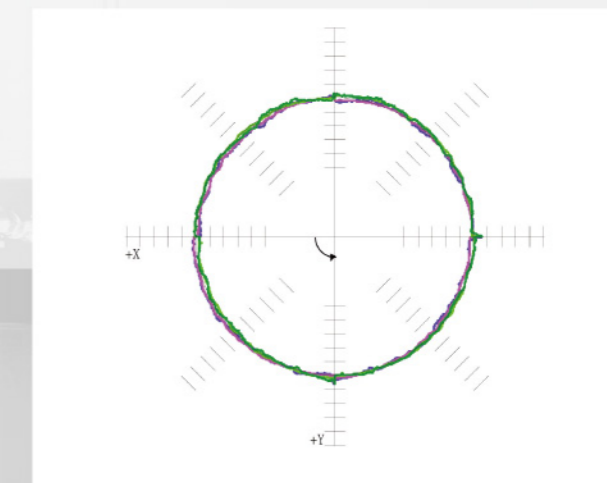


HYDRAULIC BALANCE SYSTEM >>

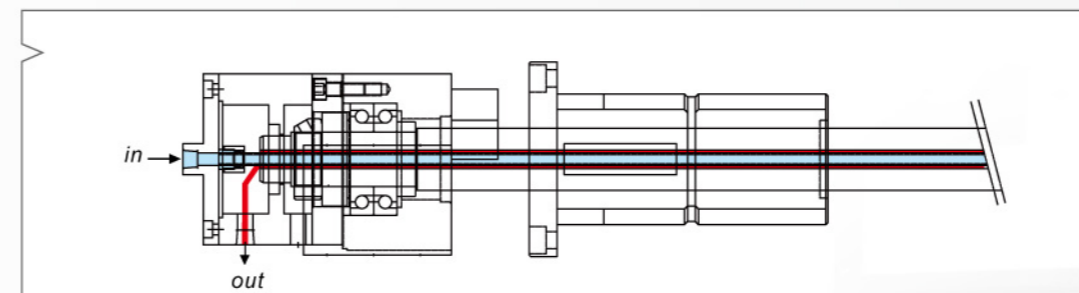
The Y-axis movement is counter-balanced through a hydraulic cylinder. An accumulator is equipped in the hydraulic circuit. This counter-balance system will reduce spindle head vibration to a minimum, while significantly improving machining accuracy.



RIGHT ANGLE INSPECTION



BALL BAR DIAGNOSTICS



HOLLOW BALL SCREW WITH COOLING SYSTEM

- Three axes are transmitted through class C3 high precision, high speed, no-noise ball screws.
- $\varnothing 36\text{mm}$ ball screws are pretensioned and preloaded to minimize deformation.
- A laser unit is applied to calibrate the machine accuracy to ensure machining accuracy.
- Coolant through ball screws on X, Y, Z axis minimizes thermal deformation and backlash, while ensuring smooth motion during rapid traverse.

