

VERTICAL LATHES VLC



STANDARD FEATURES

- Variable design
- Chuck or clamping plate 800 to 4500 mm
- Machines built by customer's specification
- High rigidity and accuracy
- Robust design
- Single-column version up to size 2500
- High quality cast iron, hardened guideways
- High performance, efficiency
- Powerful drives, optional Master-Slave for size 1600 and larger
- Long machine life, simple maintenance





STANDARD TECHNICAL DATA

- Swing diameter 1100 to 5000 mm
- Turning height 800 to 3200 mm
- Part weight 5000 to 35000 kg
- Machine weight 15000 to 145000 kg







ROBUST DESIGN

- Rigid machine frame, heavy machine
- Hardened guideways
- Robust section ram; travel "Z" 900, 1200, 1400 ... up to 2200 mm
- Ram cross section 180x180, 220x220 ... up to 320x320 mm
- Adjustable or fixed cross rail











- Joined with column creates machine frame
- Holds machine table and two-step gearbox
- Machines VLC size 1200 and 1600 allow optional bed version – more rigid with spindle drive in center, or simple variant with off-center drive





COLUMN

- Single-column design with ground and hardened guideways is more advantageous than solution featuring double-column for the same machine size.
- Single-column design provides substantially higher accuracy, rigidity and useful life and does not require regular service works.
- Bolted frame design is not so common recently due to its weakness.
- Machines up to table size of 2500 mm are designed as single-column. Machines with table larger than 2500 mm are double column





CROSS RAIL

- Is moved vertically by means of asynchronous motor with worm transmission and vertical trapezoidal screw with nut.
- According to machine version, cross rail can be moved in increments or moved to an infinite position and hydraulically clamped.
- Cross rail moves on vertical ground sliding guideways. Release, clamping and positioning of cross rail is controlled from operator's panel or is programmed and controlled by control system.





RAM

- Ram is nested in cross rail head and features square cross section.
- Ram is one of machine components exposed to highest load. It is designed to provide max. dynamic rigidity and ability to absorb shocks from machining.
- Standard machine version accepts SK 50 taper to clamp tool holders into spindle.



AUTOMATIC TOOL CHANGE (ATC)

- Standard ATC magazine is fixed to cross rail. It provides 12 positions (machines without C-axis) or 16 positions (machines with C-axis and live spindle).
- Optional 60 (or more) position magazine is on floor next to the machine.
- ATC magazine can be located on either side of the machine (left or right)



• Simple maintenance



TOOL HOLDERS

STANDARD OR CAPTO C6

- According to customer's needs
- Flexible solution
- Simple use
- Reasonable price
- Quick delivery

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MAIN DRIVE AND LIVE SPINDLE DRIVE

- Brushless Siemens drives
- Optional power versions available
- Two-step ZF gearbox
- Two main motor option for machine table size 1600 and higher (Master-Slave system)





WORKHOLDING

- Standard hydraulic chuck optional clamping plate optional magnetic table.
- Manual clamping plate of often used due to its versatility.
- Hydraulic chuck has advantages in repeated work.
- Magnetic plate is used for specialized works like bearing rings, etc..









CONTROL SYSTEM

- Computer unit SIEMENS
- Main drive SIEMENS
- Live spindle drive SIEMENS
- Sofisticated, easy to operate system
- Optimal solution in the view of other machine components (for example gearbox ZF)
- High reliability



TABLE BASE DESIGN, CROSS BEARING

- Table base features high thermal stability, low level of vibrations and high rigidity.
- Accurate positioning by rotary encoder Heidenhain of Fagor
- Key component is PSL Cross Bearing, which is optimal to accept high radial and axial forces.
- PSL bearings are widely used by many manufactures due to their reliability, accuracy, long life and simple maintenance.





SLIDING GUIDEWAYS

- Machine guideways are hardened by induction, precisely ground. Sliding guideways use loose hydrodynamic lubrication.
- All sliding guideways of cross rail and ram use TURCITE with opposite hardened (depth approx. 4 mm +- 55 Hrc) and ground cast iron.
- Sliding surface layer is approx. 1.5 mm thick, with grooves for lubrication oil as well as scraped "oil pockets" to hold oil along entire surface.
- All sliding surfaces are covered by lubrication oil for optimal sliding performance.
- Gibs and push plates are used to control gap between sliding surfaces.





TURN COMMON APLICATIONS OF VLC MACHINES

VERTICAL LATHES VLC ARE SUITABLE TO MACHINE VARIOUS COMPONENTS









Armatures Stators Rotors Closing flaps Turbines Motors





Railway wheels

Bearing rings

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