IMO ANLAGENBAU

Vertical Turret Lathe
IMO KD4S 40

A sophisticated solution in every detail

For over 10 years, the IMO engineering experts have been responsible for the sophisticated mechanical engineering of the IMO group and the production of high-quality slewing rings and slew drives. A lot of visionary products and solutions have been developed during this period.

Especially in the metal processing industry, it is important to reduce the production times and downtimes as far as possible. All current machine concepts are very similar therefore, a time saving is hardly possible. Conventional machines only insert one or two supports at the same time. Mostly there is only a certain amount of performance available because the mechanical configuration of the base concept does not entail enough stiffness.

The IMO engineers have faced the challenges of the practical utilization and have set a new benchmark with the vertical turret lathe KD 4S:

IMO KD4S – a technical revolution

- Within the machine, there are four supports available at the same time under the application of extreme cutting force. Four simultaneously executed production processes reduce the manufacturing time considerably.
- Each support is equipped with two Capto® C8 tensioning systems which makes it possible to directly use eight tools without time-consuming tool changes.
- The rotary table, which can either be equipped with a mechanical or electromagnetic tensioning system, comprises a special bearing-mounted slewing ring. This bearing is specially designed for this purpose by our affiliated company IMO Momentenlager – one of the leading specialists in slewing ring production worldwide.
- The machine bed, the stand and the supports of the machine consist of a steel and Hydropol® composition which guarantees extremely high stiffness.
- In cooperation with our partner Power Automation the machine control has been fitted for the usage of four CNC-channels. A user-friendly operator interface facilitates the machine operation.
- The complete machine is a closed system. The housing provides an exceptionally clean and quiet working atmosphere.
Vertical Turret Lathe IMO KD4S 40

**Standard version**
- vertical turret lathe with four simultaneously useable supports
- working range:  
  x-axis: 950 mm  
  y-axis: 800 mm
- each support is equipped with two Sandvik Capto® tensioning systems
- C8-tool holder with hydraulic clamp, distance 350 mm, saves time-consuming tool changes
- special bearing-mounted rotary table with mechanical or electromagnetic tensioning system
- table drive with two 67 kW drive motors
- control system PA 8000™ with user-friendly operator interface for the usage of four CNC-channels
- integrated chip conveyor
- the machine bed, stands and supports consist of Hydropol® providing extremely high stiffness
- enclosed machine housing provides an exceptionally clean and quiet working atmosphere
- internal cooling liquid supply
- automatic central lubrication system
- integrated covering system
- electrical manual control unit
- ball bearing spindle in each axis
- absolute measuring system

**Additional equipment**
- magnetic chuck
- mechanical chuck
- extension of through headroom
- vacuum unit

Of course, we are more than happy to develop and construct a machine suited to your individual requirements.
## Technical details

### General

<table>
<thead>
<tr>
<th>Specification</th>
<th>Unit</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions of the machine</td>
<td>m</td>
<td>7.80 x 4.50 x 4.70</td>
</tr>
<tr>
<td>Mass of the machine</td>
<td>to</td>
<td>130</td>
</tr>
<tr>
<td>Installed load</td>
<td>kW</td>
<td>305</td>
</tr>
<tr>
<td>Power connection</td>
<td></td>
<td>400 V / 50 Hz</td>
</tr>
<tr>
<td>Quantity CNC-axis</td>
<td>units</td>
<td>8</td>
</tr>
<tr>
<td>Max. cutting rate</td>
<td>m/min</td>
<td>300</td>
</tr>
<tr>
<td>Volume of the cooling liquid</td>
<td>l</td>
<td>980</td>
</tr>
<tr>
<td>Max. pressure (individually adjustable for every support)</td>
<td>l/min</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>bar</td>
<td>8</td>
</tr>
</tbody>
</table>

### Rotary table

<table>
<thead>
<tr>
<th>Specification</th>
<th>Unit</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing diameter</td>
<td>mm</td>
<td>2200 - 3900</td>
</tr>
<tr>
<td>Max. processing height</td>
<td>mm</td>
<td>600</td>
</tr>
<tr>
<td>Max. work piece weight</td>
<td>to</td>
<td>10</td>
</tr>
<tr>
<td>Outer diameter faceplate</td>
<td>mm</td>
<td>3700</td>
</tr>
<tr>
<td>Inner diameter faceplate</td>
<td>mm</td>
<td>2100</td>
</tr>
<tr>
<td>Max. revolution faceplate</td>
<td>R/min</td>
<td>63</td>
</tr>
<tr>
<td>Max. torque faceplate</td>
<td>kNm</td>
<td>90</td>
</tr>
<tr>
<td>Drive output</td>
<td>kW</td>
<td>134</td>
</tr>
</tbody>
</table>

### Supports

#### X-axis (horizontal)

<table>
<thead>
<tr>
<th>Specification</th>
<th>Unit</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traverse path</td>
<td>mm</td>
<td>950</td>
</tr>
<tr>
<td>Drive output</td>
<td>kW</td>
<td>11</td>
</tr>
<tr>
<td>Max. travel speed</td>
<td>m/min</td>
<td>9</td>
</tr>
<tr>
<td>Min. travel speed</td>
<td>m/min</td>
<td>0.01</td>
</tr>
<tr>
<td>Positioning accuracy</td>
<td>mm</td>
<td>± 0.012</td>
</tr>
</tbody>
</table>

#### Z-axis (vertical)

<table>
<thead>
<tr>
<th>Specification</th>
<th>Unit</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traverse path</td>
<td>mm</td>
<td>800</td>
</tr>
<tr>
<td>Drive output</td>
<td>kW</td>
<td>11</td>
</tr>
<tr>
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<td>m/min</td>
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The mentioned technical specifications are based on the standard equipment. Of course, we are more than happy to develop and construct a machine suited to your individual requirements.
Strong Partner

PA 8000™ -
The high end CNC-system for complex applications

• **Fastest block handling**
  Through high performance processors which achieve an extremely high block process thus enabling even high-precision contours with many small NC-blocks to be processed without loss of speed. The maximum productivity of the machine is always reached.

• **Cross-links CNCs**
  All PA CNC-systems are equipped with fast Ethernet ports of the latest generation thus enabling the machines to be easily integrated into networks. The fast data transfer guarantees minimal transfer time even with very large NC-programs.

• **Short cycle time due to ultra fast SPS**
  The integrated soft-SPS with IEC 61131-3 standard guarantees shortest cycle times. Additional work like charging and discharging or tool change are carried out in the shortest possible time.

Hydropol® -
The innovative material for mechanical engineering

**Greater stiffness – better damping**
Hydropol® is a composite material: Steel welded construction filled with special concrete. Machine beds consisting of Hydropol® feature high static and dynamic stiffness and an especially high damping behavior.

**Further advantages of Hydropol®**
- great thermal stability
- high thermal capacity
- integration of heating or cooling coils
- electrical equipotential bonding as defined by DIN VDE 0113
- due to the robust and vibration optimized design of a Hydropol® machine bed the tool replacement rate is reduced considerably
- by achieving lower machine vibrations the surface quality improves during the processing
Other IMO high-performance machines

IMO AZFF 30 external gear cutting machine
Gear cutting machine with the diameter 1.5 - 3.0 m for the mass production of straight external gear. The combination of an internally cooled, high-speed mill with a gearless direct drive, a highly resilient table bearing and extreme stiffness enable an exceptional gearing velocity. The complete system offers exceedingly low vibrations and guarantees high gearing quality even with extreme production activity.

IMO IZFF 25 internal gear cutting machine
Gear cutting machine with the diameter 1.5 - 3.0 m for the mass production of straight internal gear. This new machine concept is the result of numerous FEM calculations in combination with a vibration analysis. The internal gear cutting machine IMO IZFF 25 operates extremely smoothly therefore guaranteeing a high grade of gearing quality while the tool costs decline. The internally cooled high-speed mill is kept very close to the bearing due to a modern system which guarantees maximum stiffness and enables exceptional gearing speed.

Detailed descriptions of every single machine can be provided upon request. Datasheets can be found in our download area at: www.imo.de

IMO Anlagenbau – Your strong partner

Precision
Our machines and systems are state-of-the-art. Our machines have high inherent rigidity and low vibration thanks to specially cast machine parts. IMO solar power systems offer astronomic tracking which qualifies them for systems requiring precise tracking.

A single source for service
You can sit back and relax with our perfect service offer. We have the expertise, we can reduce your task load, for example we can take charge of planning, development, installation, maintenance and service or train your employees.

Quality
We make no compromises where quality is concerned. The most rigorous quality criteria assure our well-known IMO quality.

Robust construction and corrosion protection
IMO machines and systems are robust in construction and designed to withstand high loads.

Short development times
We take time for you. Our engineers are ready for challenging developments. Together with you we find the right solution in good time.