XL Manufacturing Systems

Highly productive machining solutions for complex metal cutting tasks
XL MANUFACTURING SYSTEMS

ELHA-MASCHINENBAU
The company ELHA-MASCHINENBAU Liemke KG is a mid-size family business with 240 employees.

ELHA has two locations:
- The main plant in the town center of Hövelhof houses the division XL Manufacturing Systems which includes research & development department, sales and purchase as well as the administration and the machining facilities.
- The 2002 founded division Production Modules was relocated to a new plant in the industrial zone of Hövelhof. Beside the research & development and sales department for Production Modules this location also houses the assembly facilities for all ELHA machines.

Capabilities
In the XL Manufacturing Systems division ELHA-MASCHINENBAU develops and produces special machining centers and special purpose machines mainly for large scale workpieces with the VTM-, RTX-, SMX- and SPX-series.

In the Production Modules division special solutions and processes for automotive workpieces are developed and realized based on the transfer center concept by the production module types FM 3+X and FM 4+X.

- Complete metal cutting solutions including the integration of special manufacturing processes
- Integration of automatic loading/unloading and other peripheral systems
- Delivery of production-ready turn-key solutions

Quality & Environment Management

ELHA-MASCHINENBAU offers competent after-sales service to ensure high machine availability. All system can be equipped with remote diagnosis capabilities.

Machining facility ELHA-MASCHINENBAU

Example for complete ELHA turn-key solution

SMX 6100
Double Vario Module with tool storage

SPX 4979
5 Station Planetary Table Machine

RTX 5130
Rotary Table Machining Center

SPX 5120
5 Station Linear Transfer Machine
SPX Special Purpose Machines

**Turn-Mill Machining Center SPX 5111**
- For machining of printing cylinder with max. diameter 800 mm and length of 2000 mm
- Highly productive turn-milling of cylinder envelope with HSK 160 spindle
- Precise slot machining with HSK 100 ram spindle
- 2 automatic tool changers
- Optimal damping by composite material components
- High thermal stability by optimized coolant system

**Horizontal Machining Center SPX 5176**
- Highly productive machining of large scale drums by two simultaneous working spindles HSK 100
- High dynamics and stability of the milling unit in spite of large travel with a “box-in-box” design
- Full NC rotary table designed for high loads
- Use of 2-spindle drill heads in both units doubling the machining performance
- Structural composite material components
- 2-piece machine base with high rigidity

---

**SPX 5111**
Work area with clamped printing cylinder

**SPX 5128**
2 Station Horizontal Machining Center

**SPX 5207**
6 Spindle Deep Hole Drilling Machine

**SPX 5134**
Rail Drilling Machine
VTM Vertical Turning Milling

Features

- Table diameter 2500 - 8000 mm and workpiece height up to 5000 mm
- Highly precise and dynamic segmented rotary table direct drive ELHA SDD
- Designed for soft- and hardturning as well as drilling, milling, grinding and 5-sides/5-axes simultaneous machining
- With fixed or movable crossbeam
- Table base and columns made from optimal damping composite material
- Hydrostatically guided linear and rotary axes
- RAM units with three different cross sections and stroke up to 3000 mm
- Exchangeable work units with tool spindle power up to 70 kW

Vertical surface machining:
- 3-axes interpolation with vertical milling head

Vertical surface machining:
- 4-axes interpolation with horizontal milling head

Sloping surface machining:
- 4 (5)-axes interpolation with HV milling head, fixed B-axes

Free form shape machining:
- 5-axes simultaneous machining with HV head, dynamic B-axes
VTM $ht$ (special type for hardturning)

- Budget optimized version of VTM turning and milling center
- VTM $ht$ is optimally designed for finish operations by hardturning, grinding, drilling, milling and threading
- Optimized work area for large diameter bearings, flanges and gear box parts
- Linear roller guide systems for X-/Z-axes
- Separated turning tool interface and tool spindle
- Powerful direct drive for tool spindle

Vertical turning milling center VTM 402 $ht$

RTX Rotary Table Machining Center

- Precise drilling and threading for ring shaped workpieces up to Ø 6000 mm
- Main machine components made from composite material
- 2 turn-slide tables for cycle-time-parallel loading and unloading and set-up of the fixture
- Workpiece clamping with automatic 6-jaw force chuck
- Tools driven by powerful motor spindles
- Automatic exchangeable drilling heads

Rotary table machining center RTX 5211

VTM 402 $ht$: Optimized for hardturning operation

RTX 5202: Vertical 2 spindle machining of perforated discs

RTX 5211: Vertical 2 spindle machining of large scale bearing rings

RTX 5135: Vertical 2 spindle machining with H/V-milling head
SMX Special Machining Centers

Horizontal Special Machining Center with H/V-milling head SMX 5181
- Designed for high precision machining of large structural steel and aluminum workpieces
- High dynamics due to small moving masses
- Newly developed fork-type milling head with powerful motor spindle
- Precise round table with automatic pallet clamping device
- Automatic pallet changer with 4 pallet storage positions and separate setup station

Horizontal 5-Axes-Machining Center SMX 5224
- Powerful machine with excellent rigidity and damping
- Outstanding performance for machining of heavy cutting materials like titanium or inconel
- Hydrostatically guided RAM with Ø 450 mm
- 60 tools magazine with double gripper unit
- Massive swivel work table with integrated NC rotary table of Ø 1000 mm

SMX 5181:
Automatic tool change by robot

SMX 5181:
Swivable work area camera monitoring system

SMX 5224:
Accessible work area for convenient handling

SMX 5224:
Integrated, space saving 60 tools magazine
Production Modules Division

- Excellent for mass production of automotive workpieces
- No idle times for tool changing
- Chip-to-chip time approx. 0.5-1.5 sec.
- Every tool has its own spindle
- Tools driven with optimized size, speed and power for applied machining process
- Angle machining possible by utilizing angle positioning spindles and interpolation
- Great variety of automation solutions available

- Dynamic 4-axis work-holding unit for all feed and rapid movements
- Special tooling devices like special milling units or turrets available
- Short set up time and high accuracy by only one work-holding unit per machine
- Optimal balance between productivity and space requirement
- Hermetical separation of work area and machine area

More information available in ELHA brochure “Production Modules“ or on website www.elha.de
ELHA-MASCHINENBAU
Liemke KG

Production facility 1
Division XL Manufacturing Systems
Allee 16
33161 Hövelhof
Germany
Phone +49 (0) 52 57 / 5 08 - 0
Fax +49 (0) 52 57 / 5 08 - 28
E-Mail info@elha.de
Internet www.elha.de

Production facility 2
Division Production Modules
Otto-Hahn-Straße 27
33161 Hövelhof
Germany
Phone +49 (0) 52 57 / 5 08 - 0
Fax +49 (0) 52 57 / 5 08 - 208
E-Mail module@elha.de
Internet www.elha.de