



# Vertical Machining Centers VECTOR 850 M SI



**SKU : 423513**

## CUSTOM MODEL

The Vector series is the compact all-in-one machining solution, designed and preconfigured for complex manufacturing challenges. The machines are designed using the latest FEM analysis software. The production takes place under strict quality control in order to guarantee perfect execution. Both the tried and tested Meehanite cast and the delta construction of the column ensure additional stability of the machine frame. The consistently high-quality components guarantee smooth operation during multiple shifts.

- Optimized frame design using FEM analysis
- Extra wide Y-shaped meehanite column for max. rigidity
- 30-bar through-spindle coolant to ensure optimum machining quality
- Built for multi-shift production
- High customization and automation possibilities
- 2 years standard warranty

## TECHNICAL SPECS

### WORKING AREA

|  |                  |
|--|------------------|
| Table dimensions                       | 1000 mm x 550 mm |
| Table load capacity                    | 800 kg           |
| Spindle nose-to-table surface distance | 150 mm - 700 mm  |
| Spindle center - column                | 520 mm           |

### TRAVELS

|               |        |
|---------------|--------|
| Travel X-axis | 850 mm |
| Travel Y-axis | 550 mm |
| Travel Z-axis | 550 mm |
| Guideway      | Roller |

### HEADSTOCK

|                      |               |
|----------------------|---------------|
| Spindle speed        | 10000 1/min   |
| Spindle mount        | SK 40         |
| Torque, constant     | 57 Nm         |
| Spindle bearing      | 7012 x 4      |
| Spindle drive method | Riemenantrieb |

### RAPID FEED

|                       |              |
|-----------------------|--------------|
| Rapid feed X-/ Y-axis | 36000 mm/min |
| Rapid feed Z-axis     | 15000 mm/min |

### FEED

|                  |              |
|------------------|--------------|
| Work feed X-axis | 10000 mm/min |
| Work feed Y-axis | 10000 mm/min |
| Work feed Z-axis | 10000 mm/min |

### TOOLING

|                              |                |
|------------------------------|----------------|
| Tool changer type            | Doppelarm      |
| Number of tool stations      | 24 positions   |
| Tool selection               | Memory random  |
| Tool size Ø x L (max.)       | 80 mm x 300 mm |
| Tool weight max.             | 7 kg           |
| Tool-change time tool/tool   | 1.8 sec        |
| Tool-changing time chip/chip | 3.9 sec        |

### ACCURACIES

|                        |                         |
|------------------------|-------------------------|
| Repeatabilities        | ± 0,003 / ± 0.00012" mm |
| Positioning accuracies | ± 0,005/ 0.0002" mm     |

### DRIVE CAPACITY

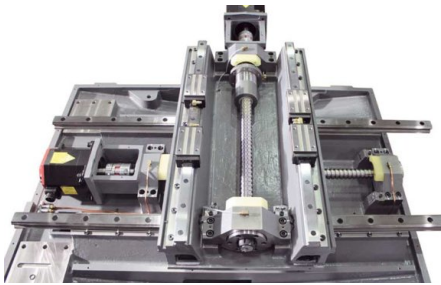
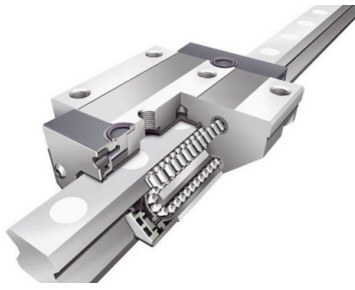
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|-----------------------------|--------|
| Main drive, continuous load | 9 kW   |
| Total power consumption     | 15 kVA |
| Voltage                     | 400 V  |
| Mains frequency             | 50 Hz  |

### CONTROL

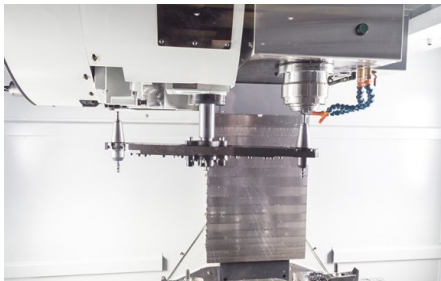
|         |         |
|---------|---------|
| Control | Siemens |
|---------|---------|

### MEASURES AND WEIGHTS

|  |                        |
|--|------------------------|
| Overall dimensions (length x width x height) | 2.42 m x 2.2 m x 2.7 m |
| Weight                                       | 4300 kg                |



Premium components for drive and guides guarantee accuracy and availability



Rapid tool changing with dual-arm gripper



SINUMERIK 828D control with its unique CNC performance sets new standards for productivity

## PRODUCT DETAILS

### Highlights

- Rigid machine structure with extra deep center of gravity and small footprint

### Machine Design

- 30 mm preloaded ball screws combined with a digital drive package provide a rigid table guide and high torque
- A major focus during development of this machine was a space-saving design
- Dual-arm tool changer with 24 stations ensures adequate flexibility and capacity for every day production needs
- The Vector Series features linear guides on X, Y and Z to ensure high accuracy made possible by lower friction
- 30-Bar internal cooling for optimum machining quality

### Spindle

- Spindle runs on multiple bearings to ensure excellent absorption and dissipation of forces during machining

### Tool Changer

- Changing times (1.8 seconds tool-to-tool and 3.9 seconds chip-to-chip) increase spindle up-time and machine output

### Control Siemens Sinumerik 828D

- The top specialist for demanding milling operations
- Compact, robust, maintenance-free control panel-based CNC
- Comfortable program and parameter input via QWERTY keyboard
- 100 adjustable zero offsets
- Synchronous actions, and quick output of help functions
- Siemens Sinumerik 828 D Milling
- Maximum machining precision
- Intelligent kinematic transformations for machining of cylindrical parts, and for angled workpiece levels
- SINUMERIK MDynamics with the new Advanced Surface feature: for perfect part surfaces and shortest machining times in mold making applications
- Highlights & CNC performance data and functions Siemens Sinumerik 828 D Milling
- ShopMill: shortest programming time for single parts and small batch productions
- ProgramGUIDE: fastest machining time and maximum flexibility for large series productions
- Unique spectrum of technology cycles - from milling contours with residual material recognition to process measurements
- Animated Elements: unique operation and programming assistance with animated sequences
- Modern data transfer options via USB stick, CF card and network (Ethernet)
- Easy Message: maximum machine availability due to process monitoring per texting (SMS)
- SINUMERIK MDynamics package with Advanced Surface for mold making applications
- Jerk-limited acceleration
- Dynamic feed-forward control
- 4-axis simultaneous interpolation (X, Y, Z and rotary axis)
- Linear, circular and helical interpolation
- Tapping without compensating chuck, plus thread cutting
- Oriented spindle hold
- Toggle between inch and metric units
- FRAME concept for individual coordinate transformations, rotations, scaling and mirroring

### Optional equipment: Preparation (wiring) for Renishaw TS 27R and OMP 40

## STANDARD EQUIPMENT

Preparation for Renishaw TS 27 R  
 Siemens 828D control with Shopmill  
 Coolant through spindle 30 bar with double filter  
 24-station tool changer with dual-arm  
 Main spindle motor 9 kW  
 ST 40 mount

Spindle oil cooler  
Chain-type conveyor with chip container  
Electronic hand-wheel  
Oil skimmer  
Automatic central lubrication  
Coolant system flush gun  
Chip wash system  
Heat Exchanger for electric control cabinet  
Telescoping axis cover  
USB port  
CF card reader  
Totally enclosed work space  
Work lamp  
3-color signal lamp  
Coolant system  
Adjustable machine feet  
Operating tools  
Operator instructions

## OPTIONAL EQUIPMENT

- Siemens Function: P25: 3D Simulation, SKU : 253378
- Siemens Function: P13: Residual Material Detection, SKU : 253379
- Siemens Function: P22: Simultaneous Recording, SKU : 253380
- Measuring Cycles, SKU : 253438