



E Modul series - technical information

Machine concept, drive technology and axes speed		
Machine basis	Natural granite base with low coefficient of thermal expansion for high accuracy and less vibrations.	
Modul concept	One station machine with one drilling or routing spindle.	
Modul Double Head concept	Two different spindles at one station, e.g. one drilling and one routing spindle.	
XYZ-axis drive	High-dynamic linear motor (wear and maintenance-free)	
XY-axis speed	80 m/min (3.150 ipm)	
Z-axis speed	25 m/min infeed and retraction (984 ipm infeed and retraction)	
Tooling system	Prism-slot + 1 front contact mushroom (mushroom required for CBD)	
Spindles	Asynchronous motor	Synchronous motor
Drilling spindles	HD1769 (160 k), D1686-10/ D1686-180 (180 k), PS 300 (300 k)	SM 170S (170 k), SM 220S (200 k)
Routing spindles	D1331-26 (125 k), D1750-02 (160 k)	SM 60S (60 k)
Automatic tool change systems		
Euro Tool Cassette	not available	
Euro Tool Chain	Tool chain for 2,200 tools (Loading and unloading during production)	
Japanese Tool Cassette	6 x 50 tool cassettes (for ring and ringless tools) or 5 x 100 tool cassettes (only ringless tools) + 1 x 50 tool cassette (ringed tools)	
Features/options		
Process stability and process control	Contact Bid Detection, Real-time Broken Bit Detection, Quick Drill Function, Online Accuracy Check, PFIS, S50 Software in English, Chinese, Korean, Japanese (graphical user interface), Laser station, Insert Wear Out Control	
Applications	Depth drilling/ routing by CBD, 2nd measurement system for depth drilling/ routing, Smooth Drilling, CCD	
Specials	Tooling system with 6 mushroom clamps, individual loading system, shuttle system	
Panel sizes	Modul	Modul DH
Max size (XY) w/o loader (one contact mushroom)	597 x 660.5 mm 23.5 x 26 inch	597 x 610 mm 23.5 x 24 inch
Min/max size (XY) w/o loader with 6 standard mushrooms	235 x 335/ 597 x 660.5 mm 9.3 x 13.2/ 23.5 x 26 inch	235 x 335/ 597 x 610 mm 9.3 x 13.2/ 23.5 x 24 inch
Min/max size (XY) with loader with 6 standard mushrooms	315 x 335/ 597 x 660.5 mm 12.4 x 13.2/ 23.5 x 26 inch	315 x 335/ 597 x 610 mm 12.4 x 13.2/ 23.5 x 24 inch
Machine accuracy		
Positioning accuracy	Cpk value must be > 1.67; Cpk tolerance $\pm 18 \mu\text{m}$ (Schmolli Method of Measuring Machine Accuracy)	
Depth drilling accuracy	With CBD: $\pm 12 \mu\text{m}$ / With 2nd Measurement System: $\pm 20 \mu\text{m}$	
Installation data		
Machine weight (net / gross)	4300 kg (9480 lb) / 5000 kg (11023 lb)	
Floor loading	2000 kg/sqm. No special floor foundation is required! Machine is put on 4 machine feet (supplied by SCHMOLL)	
Machine dimensions w/o loader L x W x H	1320 x 1286 x 1920 mm (height incl. signal light 2270 mm) 52 x 50.6 x 75.6 inch (height incl. signal light 89.4 inch)	
Footprint w/o loader + periphery L x W	2920 x 3286 mm (with Loader 3320 x 4086 mm) 115 x 129.4 inch (with Loader 130.7 x 160.9 inch)	