



E LM 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.
Machine concept	Three axes machine with individual Z-axes drive per station, 6 stations (option 5 or 7)
X-axis motor	High-dynamic linear motor (wear- and maintenance-free)
Y-axis motor	High-dynamic linear motor (wear- and maintenance-free)
Z-axis motor	High-dynamic linear motor (wear- and maintenance-free)
X-axis speed	75 m/min (2,953 ipm)
Y-axis speed	75 m/min (2,953 ipm)
Z-axis speed	25 m/min infeed and retraction (984 ipm infeed and retraction)
Tooling system	Prism slot + 1 contact mushroom (mushroom required for CBD)

Spindles

Asynchronous motor

Synchronous motor

Drilling spindles	D1686-10 / D1686-180 (160 k / 180 k), PS 300 (300 k)	SM 170S (170 k), SM 220S (200 k)
Routing spindles	D1331-26 (125 k)	SM 60S (60 k)

Automatic tool change systems

Euro tool cassette	1 x 110 tools or 2 x 110 tools
Euro tool chain	Tool chain with 6,200 tools (Loading and unloading during production possible)
Japanese tool cassette	5 x 50 tool cassettes (for ring and ringless tools) or 4 x 100 tool cassettes (only ringless tools) + 1 x 50 tool cassette (ringed)

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 Wearout Control
Applications	Depth drilling/routing by CBD, 2nd measurement system for depth drilling/routing, Substrate Package, Smooth Drilling
Specials	Tooling system with 6 mushroom clamps, individual loading system, pneumatic cover

Format sizes

5 Stations

6 Stations

7 Stations

Max formats (XY) w/o loader (one contact mushroom)	656 x 650 mm 25.8 x 25.6 inch	544 x 650 mm 21.4 x 25.6 inch	460 x 650 mm 18.1 x 25.6 inch
Min / max formats (XY) w/o loader with 6 strd. mushrooms	258 x 650 / 633 x 650 mm 10.2 x 25.6 / 24.9 x 25.6 inch	226 x 650 / 521 x 650 mm 8.9 x 25.6 / 20.5 x 25.6 inch	222 x 650 / 437 x 650 mm 8.7 x 25.6 / 17.2 x 25.6 inch

Machine accuracy

Positioning accuracy	Cpk value must be > 1.67; Cpk tolerance $\pm 25 \mu\text{m}$ (Schmoll 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)	11,500 kg (25,353 lb) / 12,500 kg (27,558 lb)
Floor loading	2,000 kg/sqm. No special floor foundation is required! Machine is put on 6 machine feet.
Machine dimensions w/o loader L x W x H	4,050 x 1,920 x 1,670 mm (height incl. signal light 2,070 mm) 159.4 x 75.6 x 65.7 inch (height incl. signal light 81.5 inch)
Footprint w/o loader + periphery L x W	6,050 x 3,920 mm 238.2 x 154.3 inch