

Technical Datasheet

5-Axis CNC – Machining Center for blade applications

Manufacturer	LIECHTI Engineering
Type	Turbomill 1400g Twin
Control	SIEMENS Sinumerik 840D sl
Built	2011



The LIECHTI Turbomill 800g is a highly dynamic five-axis milling machine with maximum axis acceleration, designed for high-speed milling in 5 axes.

This milling machine is used for the rough and fine machining of complex shapes, especially in the engine and turbine industry (turbine blades), in mold making (die production) and in aeronautical engineering (airframe components)

CNC-Axes

Linear Axes	X, Y and Z
Rotating Axes	A / B

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5-Axis CNC-Machining center,

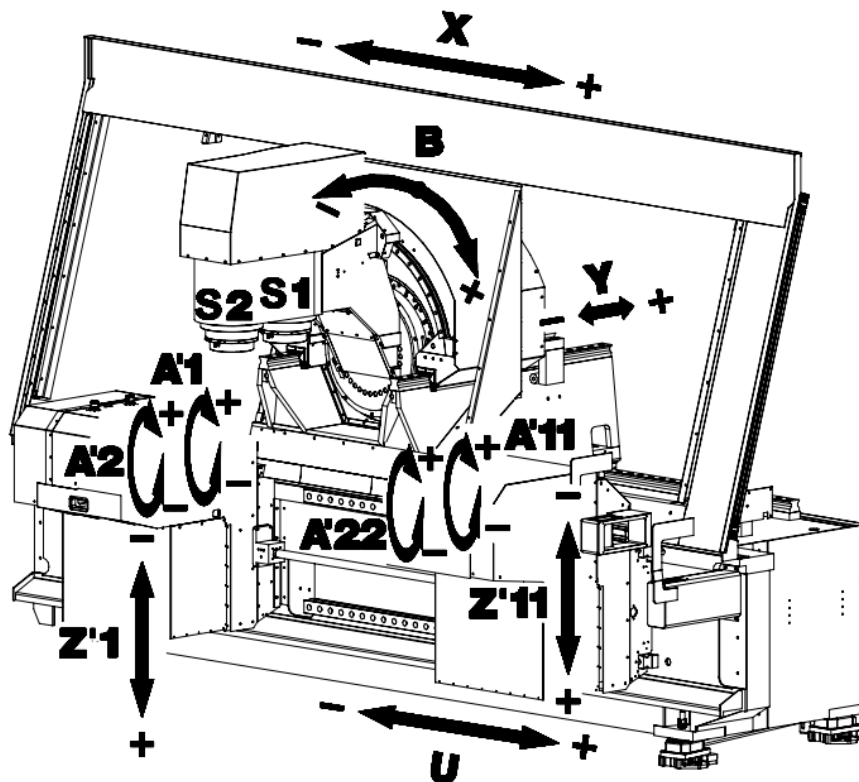
LIECHTI Turbomill 1400g TWIN

Working area

Blade length in clamping range	300 – 1.350	mm
Max. Swing diameter	300	mm

Travels

Longitudinal movement column (X-Axis)	1.978	mm	
Cross movement column (Y-Axis)	450	mm	
Vertical movement (Z1 and Z11-Axis)	400	mm	
Rotating axis workpiece (A-Axis)	360	°	endless
Swiveling axis working spindle (B-Axis)	100	°	
Feed movement counter spindle (U-Axis)	1.100	mm	



2x Milling spindle FISCHER

Drive power each	25	kW	(S1, 100% ED)
Speed range, infinitely variable	0 - 20.000	min-1	
Max. Max. torque	119,4	Nm	Up to 2.000 min-1
Min. torque	12	Nm	At 20.000 min-1
Spindle cone	HSK-63	DIN 69893 Form A	
Spindle design	DIN 69893		

Feeds

X-, Y- and Z-Axis	0 - 50.000	mm/min.
A-Axis	0 - 200	1/min
B-Axis	0 - 50	1/min

Tool changer

Number of tools	60	
Max. Tool Ø	75	mm
Max. Tool Ø	150	mm Auxiliary seats free
Max. Tool length	300	mm
Max. Tool weight	6	kg

Workpiece magazine

Number of pallet spaces	16	
Max. Workpiece Ø	300	mm
Max. workpiece length	1.350	mm Incl. pallet
Max. Workpiece weight	50	kg Incl. pallet
Workpiece change time	Ca. 100	s

Dimensions and weight

Machine dimensions	approx. 8.0 x 4.5 x 3.0	m
Machine weight	approx. 20.000	kg

Connection data

Operating voltage	3 x 400	V
Operating frequency	50	Hz
Rated current	200	A
Rated power	140	KVA

Equipment and accessories

CNC 5-axis simultaneous milling machine for highly efficient complete machining of airfoils in a very sturdy design with two NC rotary tables, tool magazine and pallet changer

- TWIN-design NC swivel milling head (B-head) with two 16,000 rpm FISCHER motor spindles for 5-axis simultaneous machining
- 3D CNC control SIEMENS Sinumerik 840D solution line with Liechti HMI
- X-axis with linear drive
- HSK 63 spindle cone with internal coolant supply
- Direct path measuring system (glass scales in all three axes)
- 60-position tool magazine with automatic changer
- Workpiece storage with 16 pallet spaces for automatic loading
- 3D IR measuring probe, made by RENISHAW
- Oil vapor extraction
- Spindle cooling unit
- Chip conveyor
- Coolant system, make KNOLL with high-pressure pump, 50 bar and 33 l/min
- VISIPORT rotational window
- 1 set of clamping fixtures
- Documentation