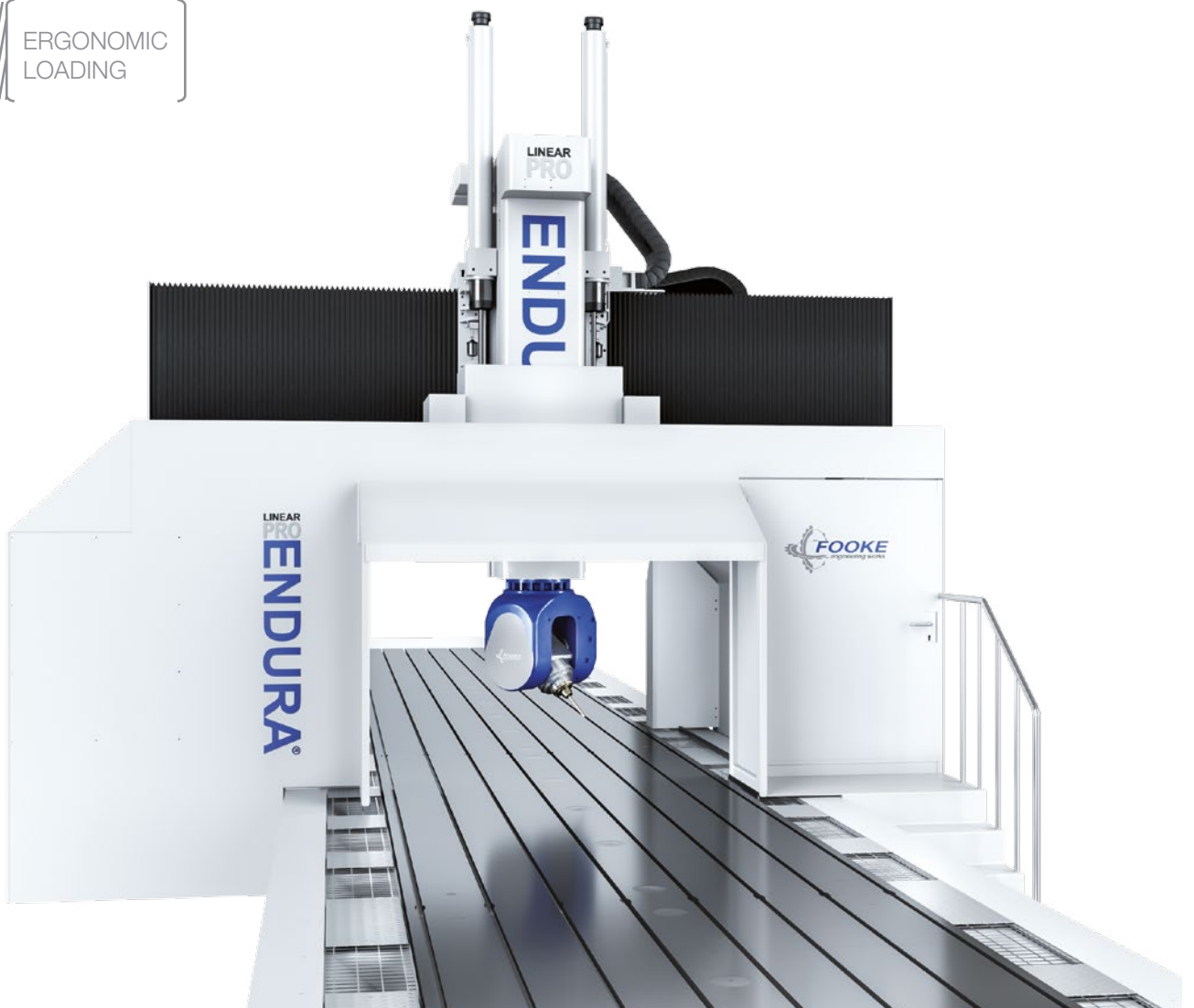




LONG BED MILLING MACHINE

ENDURA® PRO LINEAR

ERGONOMIC
LOADING



SPECIALIST FOR HIGH-
PERFORMANCE CUTTING OF
PROFILE STRUCTURE ELEMENTS

LONG BED MILLING MACHINE

ENDURA® PRO LINEAR

TECHNICAL DATA

Traverse paths

X-axis:	5,000 - 60,000 mm
Y-axis:	1,600 / 2,400 / 3,500 mm
Z-axis:	1,000 / 1,500 mm

Position accuracy

in X (P_a)	0.030 mm
in Y (P_a)	0.020 mm
in Z (P_a)	0.015 mm

Feed rate

X-axis:	5 - 55,000 mm/min
Y-axis:	5 - 65,000 mm/min
Z-axis:	5 - 65,000 mm/min

Position deviation

in X (P_s)	0.015 mm
in Y (P_s)	0.010 mm
in Z (P_s)	0.010 mm

Acceleration up to 3.5 m/sec²

HIGHLIGHTS

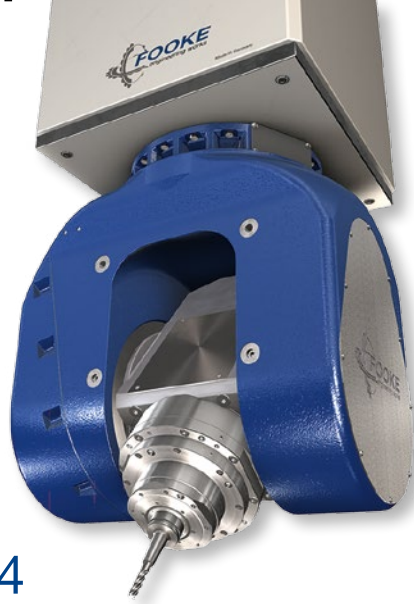
- Monoblock machine bed construction, modularly expandable
- Highest cutting rates in connection with a stable milling process, especially during extreme roughing: Minimal wear of the milling cutting edge
- Up to 11.0 l / min material removal rate
- Ergonomic loading
- Secondary workpiece machining area for process-parallel loading and unloading

Equipment

- Long-bed milling machine in Gantry construction
- Inherently rigid machine table construction in monoblock design
- Certified impact resistant vertical blinds
- Optimal chip conveyance solution
- Wear free, high dynamic linear motors and direct measuring systems in Y- and A-axis
- Wear free, high dynamic torque motors and direct measuring systems in C- and A-axis

Additional equipment

- Automatic tool changing systems
- Tool measuring systems
- Workpiece measuring systems
- Dust and chip disposal systems
- Safety systems for free accessibility
- Video monitoring of machine interior
- Various tool clamping applications
- Intelligent workpiece clamping solutions
- Online Service
- and much more



TORQUE MOTORS
IN C- AND A-AXIS

DIRECT MEASURING
SYSTEMS IN C- AND
A-AXIS

MILLING HEAD 4

C-axis

(Milling head rotary axis)

Pivoting angle: 550° (+/-275°)
 Pivoting torque: 570 Nm
 Clamping torque: 3,000 Nm
 Revolution: 360°/sec
 Axis acceleration: 1,200°/sec²
 Position accuracy: 15" (0.0041°)
 Position deviation: 10" (0.0027°)

A-axis

(Spindle pivoting axis)

Pivoting angle: 220° (+/-110°)
 Pivoting torque: 570 Nm
 Clamping torque: 2,000 Nm
 Revolution: 360°/sec
 Axis acceleration: 1,200°/sec²
 Position accuracy: 15" (0.0041°)
 Position deviation: 10" (0.0027°)

High-frequency milling spindle 1

Tool holding fixture: HSK63 A
 max. power: 42 kW
 max. rpm: 24,000 rpm
 max. torque: 67 Nm

High-frequency milling spindle 2

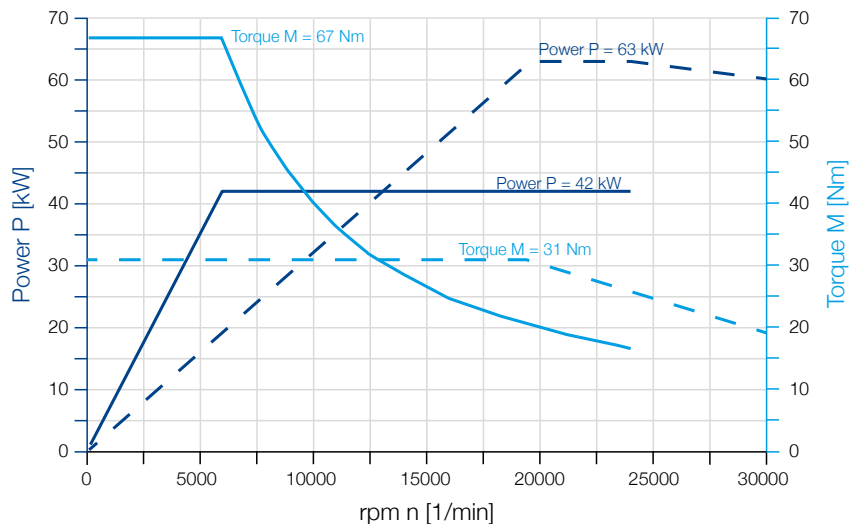
Tool holding fixture: HSK63 A
 max. power: 63 kW
 max. rpm: 30,000 rpm
 max. torque: 31 Nm

Milling head 4

High-frequency milling spindle
 HSK63 A

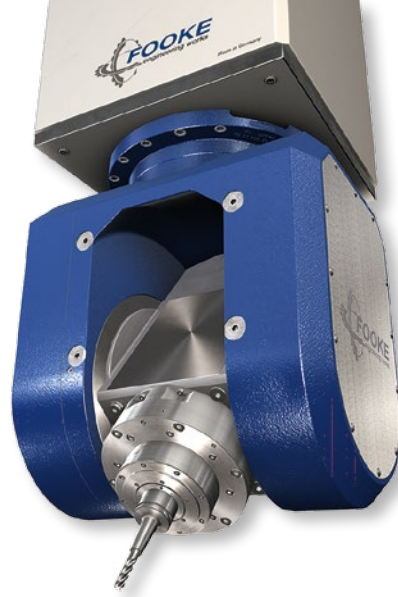
with 42 kW, 24.000 U/min ———
 with 63 kW, 30.000 U/min - - - -

Spindle also available with other performance characteristics



MATERIAL

Plastics	Blockmaterials for modelling	Composite materials (CFRP/GRP)	Aluminium	Cast Iron	Steel
-	-	+	+	-	-



TORQUE MOTORS
IN C- AND A-AXIS

DIRECT MEASURING
SYSTEMS IN C- AND
A-AXIS

MILLING HEAD 11

C-axis

(Milling head rotary axis)

Pivoting angle: 550° (+/-275°)
 Pivoting torque: 170 Nm
 Clamping torque: 750 Nm
 Revolution: 300°/sec
 Axis acceleration: 600°/sec²
 Position accuracy: 15" (0.0041°)
 Position deviation: 10" (0.0027°)

A-axis

(Spindle pivoting axis)

Pivoting angle: 220° (+/-110°)
 Pivoting torque: 250 Nm
 Clamping torque: 750 Nm
 Revolution: 300°/sec
 Axis acceleration: 600°/sec²
 Position accuracy: 15" (0.0041°)
 Position deviation: 10" (0.0027°)

High-frequency milling spindle 1

Tool holding fixture: HSK63 A
 max. power: 20 kW
 max. rpm: 30,000 rpm
 max. torque: 21.5 Nm

High-frequency milling spindle 2

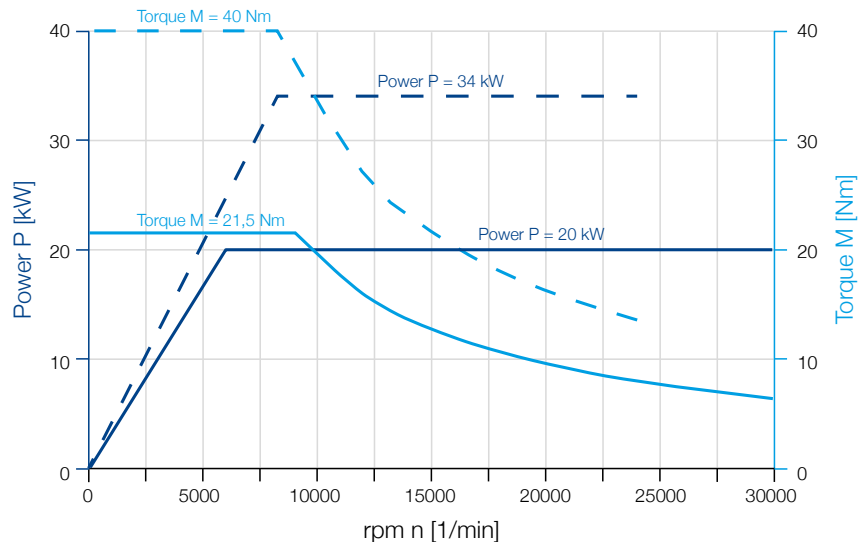
Tool holding fixture: HSK63 A
 max. power: 34 kW
 max. rpm: 24,000 rpm
 max. torque: 40 Nm

Milling head 11

High-frequency milling spindle
 HSK63A

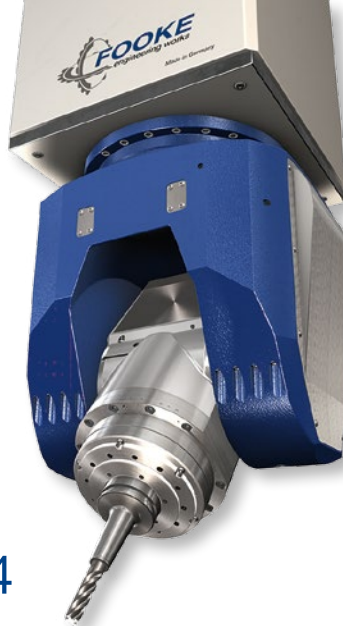
with 20 kW, 30,000 rpm ———
 with 34 kW, 24,000 rpm - - - -

Spindle also available with other performance characteristics



MATERIAL

Plastics	Blockmaterials for modelling	Composite materials (CFRP/GRP)	Aluminium	Cast Iron	Steel
-	-	+	+	-	-



HIGH PRECISION WORM GEAR
UNITS IN C- AND A-AXIS

DIRECT MEASURING
SYSTEMS IN C- AND
A-AXIS

MILLING HEAD 14

C-axis

(Milling head rotary axis)

Pivoting angle: 550° (+/-275°)
 Pivoting torque: 1,000 Nm
 Clamping torque: 2,000 Nm
 Revolution: 90°/sec
 Axis acceleration: 600°/sec²
 Position accuracy: 15" (0.0041°)
 Position deviation: 10" (0.0027°)

A-axis

(Spindle pivoting axis)

Pivoting angle: 200° (+/-100°)
 Pivoting torque: 1,000 Nm
 Clamping torque: 2,000 Nm
 Revolution: 90°/sec
 Axis acceleration: 600°/sec²
 Position accuracy: 15" (0.0041°)
 Position deviation: 10" (0.0027°)

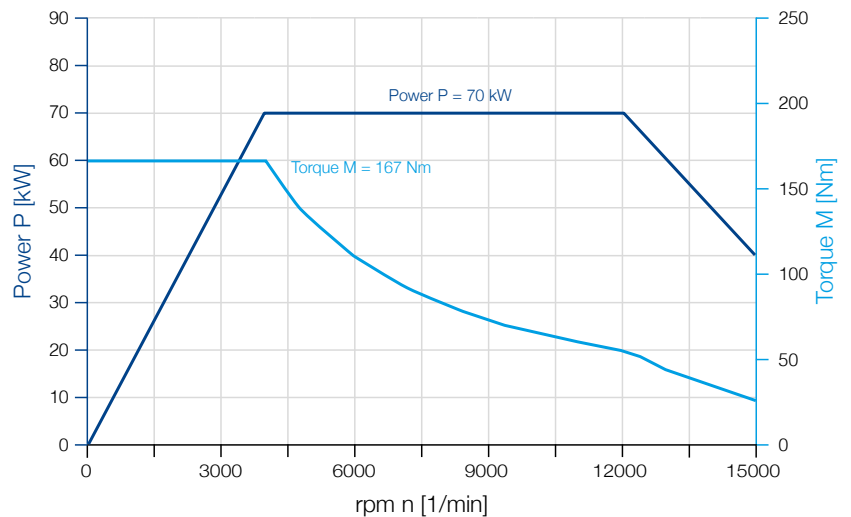
High-frequency milling spindle

Tool holding fixture: HSK100 A
 max. power: 70 kW
 max. rpm: 15,000 rpm
 max. torque: 167 Nm

Milling head 14

High-frequency milling spindle
 HSK100 A

with 70 kW, 15,000 rpm



MATERIAL

Plastics	Blockmaterials for modelling	Composite materials (CFRP/GRP)	Aluminium	Cast Iron	Steel
-	-	+	+	-	-



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