



BenchMill 6100 CNC Milling Center

The BenchMill 6100 is a versatile PC-based benchtop CNC machining center that enables you to deliver robust instruction in computer numerical control and advanced manufacturing for your students.

The BenchMill 6100 comes equipped with Ethernet-based motion control, 3-axis stepper motors, ball screws, a variable speed spindle motor, and ISO20 taper tooling.

This CNC system requires no assembly, arriving at your facility ready to run on an Ethernet port on a standard PC, and fits comfortably into any classroom, without sacrificing features. Like larger industrial machines, the BenchMill 6100 uses EIA, ISO, and FANUC™-compatible G&M code programs to cut parts in a variety of materials.



Standard Features

- Ethernet-based control
- Brushless spindle motor
- Full enclosure with pneumatic shield
- Automatic diagnostics and power cut-off protection
- PC-based CNC software
- Coolant ready
- Jog pendant ready
- 4th-axis ready
- Pneumatic drawbar
- Pneumatic door opener
- Robotic integration ready with 6 inputs, 6 outputs
- No assembly required

Included Accessories

- Pneumatic drawbar
- Pneumatic door opener
- Internal work light
- One-shot lubrication system
- BenchMill accessory package:
 - ◇ (1) 10-pc. Clamping kit
 - ◇ (1) 4-flute, HSS end mill - 3 mm
 - ◇ (1) 4-flute, HSS end mill - 1/8"
 - ◇ (1) ISO 20 tool holder
 - ◇ (1) ER16 collet - 4 mm
 - ◇ (1) ISO 20 Tool holder nut wrench
 - ◇ (1) Tool Holder wrench, 30mm
 - ◇ (1) Open-end wrench Set, 3-pc
 - ◇ (1) Allen wrench set, 6-pc
 - ◇ (1) 2M Ethernet cable
 - ◇ (1) Storage box
 - ◇ Misc. accessories

Specifications

Axis Travel

X Axis, max	260 mm	10.24"
Y Axis, max	152 mm	6.00"
Z Axis	180 mm	7.09"

Work Area

Table Size	400x145 mm	16"x 5.70"
No. of T-Slots	3	
T-slot size	12 mm	0.47"
Max. table load	20 Kg	44 lbs

Spindle

Motor Type	Brushless	
Motor power	1.34 hp, 1000 w	
Spindle speed	100 - 5000 RPM	
Spindle taper	ISO20	
Max. tool diam.	10 mm	0.375"
Throat	150 mm	5.900"

Accuracy

Position accuracy	0.038 mm	0.0015"
Repeatability	0.010 mm	0.0004"

Dimensions

Machine size

Width	1040 mm	41"
Depth	880 mm	35"
Height	940 mm	37"

Shipping size

Width	1170 mm	46"
Depth	960 mm	38"
Height	1100 mm	43.38"

Weight (approximate)

Machine weight	178 Kg	393 lbs
Shipping weight	218 Kg	480 lbs

Axis Drive Motors

Axis motor type	Stepper	
X axis	1.35 N-m	192 oz-in
Y axis	1.35 N-m	192 oz-in
Z axis	2.2 N-m	312 oz-in
Rapid feed rate	2000 mm/min	79 ipm
Feed rate	1000 mm/min	40 ipm

Air Supply Requirements

620 kPa [90 psi]
1/4" NPT female connection provided

Control Software

EIA RS274-D standard G & M code compatible
FANUC® compatible
CAD/CAM compatible
Advanced NC code editing
Real-time or simulated graphic tool path verification

Power Requirements

115 VAC (+5%/-10%) 60 Hz, 20A
or 230 VAC (+5%/-10%) 50 Hz, 8A

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Curriculum

CNC Milling, Virtual/Lab, Imperial/Metric 88-3147-0000

Hardware

BenchMill 6100 - 110 VAC 00-5505-N110

BenchMill 6100 - 220 VAC 00-5505-N220

BenchMill 6100 Bundles

Starter Bundle, Imperial/Metric HW-BM6K-STRT

- CNC BenchMILL 6100
- 4" Vise
- 58-pc. Clamping Kit
- ER16 Collet set, 8-pc Metric or 5-pc Imperial
- Advanced End Mill Package, Metric or Imperial
- 7 Piece Engraving Tool Set, Metric or Imperial

Standard Bundle, Imperial/Metric HW-BM6K-STND

- CNC BenchMill 6100
- 4" Vise
- 58-pc. Clamping Kit
- ER16 Collet set, 8-pc Metric or 5-pc Imperial
- Advanced End Mill Package, Metric or Imperial
- ISO 20 Tool Holder
- Table-mounted ATC package
- Jog Pendant Handwheel
- Stock Package, Wax, 3" x 2" x 1.5" - 50 Pcs

Advanced Bundle, Imperial/Metric HW-BM6K-ADVN

Includes all Standard Bundle items, plus:

- Coolant System
- 80mm 3-jaw Chuck
- Engraving Tool Set Package, Metric or Imperial
- 4th-Axis Rotary Worktable with Tailstock

Software

CNCBase for Intelitek CNC and Fanuc Emulator Included

CNCMotion® for Intelitek CNC and Fanuc Emulator 63-6789-1000

SpectraCAD Engraver 63-6723-0000

SpectraCAM Milling 63-6733-0000

Options and Accessories

Jog Pendant Handwheel 10-1111-1000

4" (100mm) Precision Vise 10-1111-6000

4" (100mm) Vice with Angle Adjustment 10-1108-2000

58-Piece Hold Down Set 10-1111-5000

ISO 20 Tool Holder with Nut 10-1111-9000

Tool Holder Set 10-1111-7000

Machinists Kit 10-5812-0000

End Mill Set, 3 Piece, Imperial 10-1113-3000

End Mill Set, 3 Piece, Metric 10-1113-2000

Advanced End Mill Set, 14 Piece, Imperial 10-1113-5000

Advanced End Mill Set, 12 Piece, Metric 10-1113-4000

Engraving Tool Set, 3 Piece, Imperial 10-1113-7000

Engraving Tool Set, 3 Piece, Metric 10-1113-6000

Engraving Tool Set, 7 Piece, Metric 10-1108-6000

ER16 Collet - 10mm 10-1113-0000

ER16 Collet - 4mm 10-1112-4000

ER16 Collet - 7mm 10-1112-7000

ER16 Collet - 3/8" 10-1130-5000

ER16 Collet - 5/16" 10-1130-4000

ER16 Collet - 1/4" 10-1130-3000

ER16 Collet - 3/16" 10-1130-2000

ER16 Collet - 1/8" 10-1130-1000

ER16 Metric Collet Set, 8 Piece (3,4,5,6,7,8,9,10mm) 10-1112-2000

ER16 Metric Collet Set, 8 Piece (2x 3,6,8,10mm) 10-1115-0000

ER16 Imp Collet Set, 5 Piece (1/8", 3/16", 1/4", 5/16", 3/8") 10-1130-0000

Table-mounted 4-station Automatic Tool Changer 10-1113-1000

Table-mounted ATC Package 10-1115-2000

4th Axis Package, 100 mm (4") Rotary Worktable 10-1115-3000

3" (80mm) 3-Jaw Chuck for Rotary Positioner 10-1109-3000

3" (80mm) 4-Jaw Chuck for Rotary Positioner 10-1106-3000

Dual-axis Pneumatic Vise 10-1110-7000

Single-axis Pneumatic Vise 10-1110-8000

Basic Air Compressor and Conditioning System 324325

Coolant System - 110 VAC 10-5817-0110

Mobile Workbench with 3 Drawer Cabinet, 96" 10-5592-0000

Mobile Workbench with 2 Drawers, Casters, 60" 10-5596-0000

Projects

Project, 4-Cavity Mold CNC-PROJ-4CAV

Project, Planetary Gearbox CNC-PROJ-PLAN1

Project Kit, CO2 Car, 50 students CNC-PROJ-CO2

Project Kit, Precision Measuring Device, 50 students CNC-PROJ-PMD

Project Kit, Golf Putter, 50 students CNC-PROJ-PUTT

Project Kit, Yo-Yo, 50 students CNC-PROJ-YOYO

Project, Sterling Engine 10-9603-0000



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