

DaVinci Systems

Features Machine Specifications And Bid Proposals



Catalog Numbers

DaVinci	8x8:	HL33SBME242500
DaVinci	8x10:	HL33SBME242510
DaVinci	10x12:	HL33SBME242512
DaVinci	14x19:	HX33VBME242201
DaVinci	1,2,3 Stand:	HX3500-242123V
14x19 Stand -		
with enclosure:		HX3500-2422SRV01
14x19 Stand -		
without enclosure:		HX3500-2422SRV02

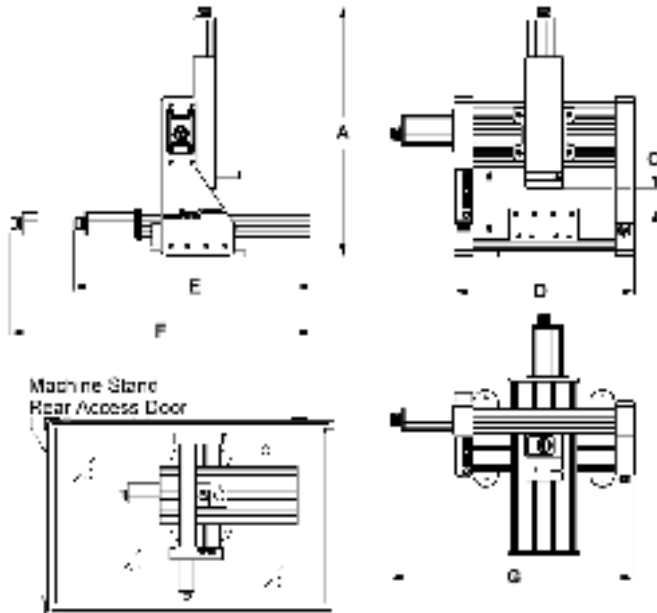
FEATURES

- Choice of 8"x8"x5", 8"x10"x5" or 10"x12"x3.5" work envelope (see specs for exact travel in mm)
- The system includes a T-slotted work surface, 2 cam clamps, 2 clamp bars (page 112), and a 600 Watt variable high-speed spindle (page 104) with 1/4" collet
- 16 mm diameter ball screw with 4 mm screw pitch on X, Y and Z axes, adjusted for zero backlash operation
- CNC and DNC programming via RS232 interface
- T-slotted Z-axis faceplate for easy mounting of optional tooling on 8"x10" and 10"x12" models
- 3-axis linear and 2-axis circular interpolation
- 1 Relay output (250V, 3A)
- 32 KB RAM for program storage of up to 600-line program in unit
- Can be programmed in both incremental and absolute coordinates
- Comes fully assembled and ready-to-use, including RS232 cable



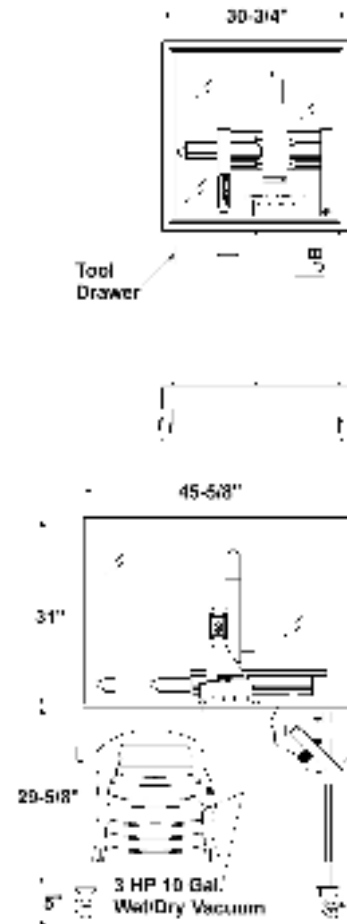
The DaVinci CNC Production Center is a 3-axis stepper motor-driven unit which incorporates an enclosed linear bearing system with **ground steel rails** and **recirculating bearings**, as well as **anti-backlash ball nuts** and **ball screws**. This mechanical system provides durable play-free motion that is rigid and stiff enough for cutting, engraving, milling, routing, etc. The DaVinci has all drive electronics built-in so that no separate controller is required. The DaVinci's size and weight mean it is both compact and sturdy, making it ideal for any number of CAD/CAM applications. Programming can be done using the easy-to-use, English-based, PAL software which comes with the system. Interfaces for practically all popular CAD or CAM programs, including DXF, HPGL and G-Code, are available. In addition, 2D or 3D CAD/CAM software can be added to make the DaVinci a complete prototyping system.

Stepper Drawings

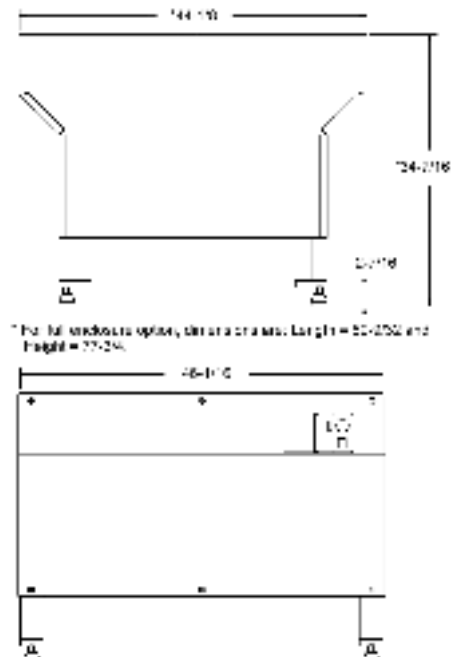
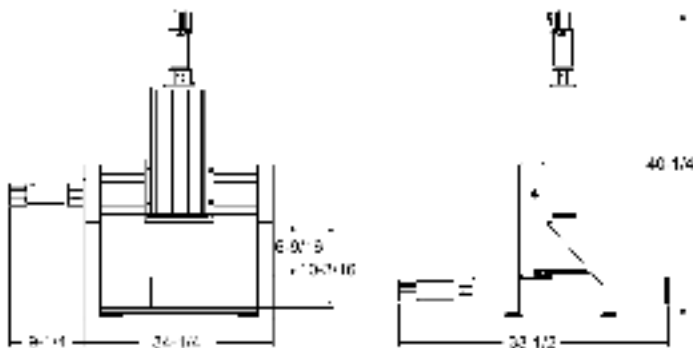


Dimension	DAVINCI		
	1	2	3
A	650	650	770
B	190	190	190
C	125	125	90
D	470	470	520
E	650	635	745
F	850	875	1040
G	650	650	700

NOTE: Dimensions are in mm.



Servo Drawings





DaVinci Stepper System 8" x 8"

DaVinci Machining Center: 8" x 8" (200 x 200mm) Travel

Electronic Specifications

- **Drive:** Stepper motor: 3 x 80 VA, (120 oz.in.)
- **Resolution:** 400 steps/revolution (0.0004 in/step)(.01mm/step)
- **Interpolation:** 3-axis linear and 2-axis circular
- **Speed:** Linear, 1-axis: 0.72- 140 IPM (18.25-3600mm/min)
Linear X/Y interpolation: 0.72-94.5 IPM (18.25-2400mm/min)
Circular, X/Y interpolation: 0.72-94.5 IPM (18.25-2400mm/min)
- **Interface:** RS 232C (serial)
- **Data Storage:** Static RAM 32 x 8 kB
- **Output:** 1 Relay, double pole (250 V/3 A)

Mechanical Specifications

- **Overall Dimensions:** 31" x 23" x 25"(705 x 580 x 635mm)
- **Weight:** 70 lbs. (31.75kg)
- **Drive** Ø⁵/₈" (16mm) ball screw, .16" (4mm) pitch adjusted for zero backlash operation
- **X-Y Travel** XY: 8" x 8" (200 x 200mm)
- **Z Travel** 5" (127mm)
- **Linear Bearing System** *isel* precision slides with 4 double re-circulating ball type bearings on XY axes
- **Repeatability:** ±.0004" (±.01mm)
- **Accuracy:** ±.0004"/in (±.1mm/300mm)
- **Thrust** 100 lbs.
- 3D linear, 2 axis circular in XY, XZ, YZ
- Plexiglas safety shield included
- Variable speed spindle: 600 W, 8,000-24,000 rpm., 1/8", 3/16", 1/4", 6mm., collets, included

Part #:

HL33SBME242500

Includes: two clamp bars, two cam locks, variable speed spindle, computer serial cable, and the Fanuc G-M code translator.

HX3500-242123V

Machine stand on roll around castors, safety enclosure, vacuum dust collector, shroud, sliding drawer for tools and manuals.

See Page 117 for CO₂ and other curriculum options

See Page 169 for Preliminary Specs on New Servo DaVinci



DaVinci Stepper System 8"x 10"

DaVinci Machining Center: 8" x 10" (200 x 250mm) Travel

Electronic Specifications

- **Drive:** Stepper motor: 3 x 80 VA, (120 oz.in.)
- **Resolution:** 400 steps/revolution (0.0004 in/step)(.01mm/step)
- **Interpolation:** 3-axis linear and 2-axis circular
- **Speed:** Linear, 1-axis: 0.72- 140 IPM (18.25-3600mm/min)
Linear X/Y interpolation: 0.72-94.5 IPM (18.25-2400mm/min)
Circular, X/Y interpolation: 0.72-94.5 IPM (18.25-2400mm/min)
- **Interface:** RS 232C (serial)
- **Data Storage:** Static RAM 32 x 8 kB
- **Output:** 1 Relay, double pole (250 V/3 A)

Mechanical Specifications

- **Overall Dimensions:** 31" x 23" x 25"(705 x 580 x 635mm)
- **Weight:** 70 lbs. (31.75kg)
- **Drive** $\varnothing^{5/8}$ " (16mm) ball screw, .16" (4mm) pitch adjusted for zero backlash operation
- **X-Y Travel** XY: 8" x 10" (200 x 250mm)
- **Z Travel** 5" (127mm)
- **Linear Bearing System** *isel* precision slides with 4 double re-circulating ball type bearings on XY axes
- **Repeatability:** $\pm .0004$ " ($\pm .01$ mm)
- **Accuracy:** $\pm .0004$ "/in ($\pm .1$ mm/300mm)
- **Thrust** 100 lbs.
- 3D linear, 2 axis circular in XY, XZ, YZ
- Plexiglas safety shield included
- Variable speed spindle: 600 W, 8,000-24,000 rpm., 1/8", 3/16", 1/4", 6mm., collets, included

Part #:

HL33SBME242510

Includes: two clamp bars, two cam locks, variable speed spindle, computer serial cable, and the Fancu G-M code translator.

HX3500-242123V

Machine stand on roll around castors, safety enclosure, vacuum dust collector, shroud, sliding drawer for tools and manuals.

See Page 117 for CO₂ and other curriculum options



DaVinci Stepper System 10"x 12"

DaVinci Machining Center: 10" x 12" (250 x 300mm) Travel

Electronic Specifications

- **Drive:** Stepper motor: 3 x 80 VA, (120 oz.in.)
- **Resolution:** 400 steps/revolution (0.0004 in/step)(.01mm/step)
- **Interpolation:** 3-axis linear and 2-axis circular
- **Speed:** Linear, 1-axis: 0.72- 140 IPM (18.25-3600mm/min)
Linear X/Y interpolation: 0.72-94.5 IPM (18.25-2400mm/min)
Circular, X/Y interpolation: 0.72-94.5 IPM (18.25-2400mm/min)
- **Interface:** RS 232C (serial)
- **Data Storage:** Static RAM 32 x 8 kB
- **Output:** 1 Relay, double pole (250 V/3 A)

Mechanical Specifications

- **Overall Dimensions:** 31" x 23" x 25"(705 x 580 x 635mm)
- **Weight:** 70 lbs. (31.75kg)
- **Drive** Ø⁵/₈" (16mm) ball screw, .16" (4mm) pitch adjusted for zero backlash operation
- **X-Y Travel** XY: 10" x 12" (250 x 300mm)
- **Z Travel** 3.5" (90mm) with fixture plate/ 5" (127mm) without fixture plate
- **Linear Bearing System** *isel* precision slides with 4 double re-circulating ball type bearings on XY axes
- **Repeatability:** ±.0004" (±.01mm)
- **Accuracy:** ±.0004"/in (±.1mm/300mm)
- **Thrust** 100 lbs.
- 3D linear, 2 axis circular in XY, XZ, YZ
- Plexiglas safety shield included
- Variable speed spindle: 600 W, 8,000-24,000 rpm., 1/8", 3/16", 1/4", 6mm., collets, included

Part #:

HL33SBME242512

Includes: two clamp bars, two cam locks, variable speed spindle, computer serial cable, and the Fanuc G-M code translator.

HX3500-242123V

Machine stand on roll around castors, safety enclosure, vacuum dust collector, shroud, sliding drawer for tools and manuals.

See Page 117 for CO₂ and other curriculum options

Machine Base, Model DaVinci: 14"x19" (500x375mm) Travel

- **Drive System:** Ball screws with anti-backlash ball nuts (Ø.63", pitch .19") (Ø16mm, pitch 5mm)
- **Protection:** Integral covers with rubber seals on all axes
- **Repeatability:** ±.0004" (±.01mm)
- **Accuracy:** ±.0004"/in (±.1mm/300mm)
- **X-Y Axes Travel:** 19.6" x 14.7" (500mm x 375mm)
- **Z Axis Travel:** 6.9" (175mm)
- **Resolution:** .0001" (.0125mm) on all axes
- **Thrust:** 250 lbs. (115kgf) on all axes at low speed
- **Motors:** 50 oz.in. cont./250 oz.in. peak brush servo motor on XY axes
55 oz.in. cont./300 oz.in. peak brush servo motor (with brakes) for Z axis
- **Software Included:** Fanuc G-M Code translator
MasterCAM Post Processor
- IBM-PC programmable — communications cable supplied
- 3D linear, 2-axis circular (XY, XZ, YZ) toolpath capability
- 4 patented double bearing blocks on each axis
- 4 T-slots on 50mm centers are provided to mount the tools
- Work surface flatness: .008"/ft (.65mm/m)
- **Rapid travel: 350 IPM (8900mm/min)**
- **Cutting feed rate: 250 IPM (6350mm/min)**
- This unit can **cut a CO₂ car in under 10 minutes**
- Gantry clearance 30" wide by 6.5" high for cutting very wide parts
- 2pcs. 225mm clamp bars and 2 heavy duty cam clamps for fixturing
- 24VDC input/120VAC output relay box to turn router ON/OFF automatically
- Plexiglas safety shield included
- Variable speed spindle: 600 W, 8,000-24,000 rpm., 1/8", 3/16", 1/4", 6mm., collets, included

Part #:

HX33VBME242201

Includes: two clamp bars, two cam locks, variable speed spindle, computer serial cable, and the Fanuc G-M code translator.

Options:

H24P00-5182ST

3.25 HP Variable Speed Router, 10-22K RPM, 1/4", 3/8", 1/2" collets, mtg. block.

HX3500-2422SRV01

Machine stand on roll around castors, safety enclosure, vacuum dust collector, shroud.

HX3500-2422SRV02

Machine stand on roll around castors, vacuum dust collector, shroud, no safety enclosure.

See Page 117 for CO₂ and other curriculum options