

BRIDGEPORT V1320

Superior Machine Accuracy and
Repeatability



BRIDGEPORT®

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WWW.HARDINGE.COM

 **HARDINGE®**

BRIDGEPORT V1320

FEATURES

- 15" M80 Color LCD, Touch Screen Control with USB
- Coolant Chip Flush System
- 12,000 RPM Greased Direct Coupled Spindle with Chiller
- CT40 Spindle (BT opt)
- Dual Contact Big-Plus® Spindle
- Hand-held Manual Pulse Generator
- On board (2) SD Card Slots
- Fully Interlocked Machine Guarding
- NAVI Mill Shop Floor Programming
- Manual Chip Wash Gun
- 4th Axis Pre-wiring
- ECO Friendly Centralized Grease Lubrication
- Three Color Stack Light
- One Year Machine Warranty Parts and Labor
- Three Year Control Warranty Parts and Labor
- Program and Data Protect Key
- Prep for 1000 PSI Through-Spindle Coolant (with rotary union)
- Automatic Power Off
- Retention Knobs
- Bright Dual Work Lights, and a Third Adjustable
- Inverter Drive ATC for Fast Recovery AIS System
- OMP40-2+OMI-2T+OTS, Pre-wiring Interface

Manufactured to the highest industry standards, the Bridgeport VI320 is packed with features to meet and exceed the requirements of the demanding metal-cutting market.



MACHINE OPTIONS

- 40 Position 40 Taper Tool Magazine
- 12,000 RPM Air/Oil Spindle, 30 HP DDS
- 15,000 RPM Air/Oil Spindle, 30 HP DDS
- Absolute Linear Encoder
- Ball Screw Nut Cooling
- Through Spindle Coolant
- 4th Rotary Axes Interface
- Probe Package OMI-2T + OMP-40-2 + OTS
- ATC Auto Door
- Auto Central Grease system
- Cutter Air Blast
- Spare M-Codes (8 Sets)
- Chiller for Power Case



V1320 KEY FEATURES

15 INCH MITSUBISHI M80 CONTROL

- 15 Inch Touch Screen
- Touch Screen Features are Completely Intuitive
- Pinch to Zoom In and Out, Scroll Through Screens, and Move Pop-up Windows on the Screen.
- Drag with a Single Finger
- SD Cards
- 32GB in Front of Control
- 32GB on Rear of Control
- USB Function
- Programs can be Run from the USB
- Sub Program Calls can be Made from Most Devices to Most Devices
- Programs can be Edited and Created on Most Devices
- No Performance Lag will Result from Running from SD or USB Memory.



KEY FEATURES v1320

BEST OVERALL WORKING CUBE IN ITS CLASS

- 52 Inches in the X-Axis
- 24.8 Inches in the Y-Axis
- 26.7 Inches in the Z-Axis



HEAVY DUTY LINEAR GUIDEWAYS, BALL SCREWS AND AXIS DRIVES

To provide superior machine accuracy and repeatability the V1320 comes complete with oversized high-class 45mm double nut ballscrews on X & Z, and (2) 40mm ball screws on Y, fixed and pre-tensioned. Large 45mm high-quality linear guideways supported by 6 trucks on the X and Z Axis.

POWERFUL SPINDLE MOTORS

Big Plus, 40 taper, 12,000-rpm Direct Drive spindle powered a dual-wound Mitsubishi spindle motor.

- 14.7/20/30 Hp (Cont./30 min/Peak).
- 55/75/110 ft-lbs Torque (Cont./30 min/Peak).

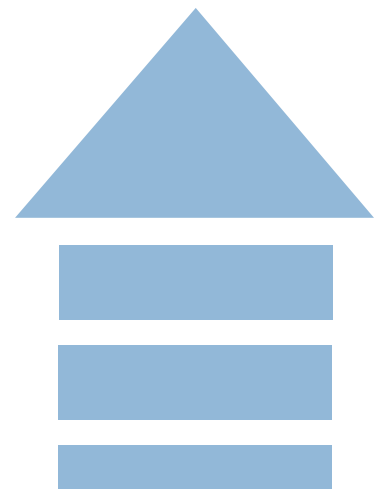
Quad set of 70mm angular contact bearings and a 60mm rear taper roller bearing provide superior thermal stability, significant radial and axial stiffness and high accuracy.

1984 lbf tool retention for aggressive cutting applications.



DUAL Y AXIS BALL SCREWS

- Driven at the Center of Gravity Effect
- Improved Surface Quality
- Outstanding Acceleration
- Reduction of Vibration
- Improved Roundness
- Longer Tool Life



MILL SPECIFICATIONS FOR M80 SERIES CONTROLS

- 3-Dimensional Tool Radius Compensation (tools vertical-direction compensation)
- Absolute/Incremental Command
- Alarm Guidance
- Automatic Backup (setup by parameter)
- Automatic Support Functions
- Automatic Tool Length Measurement
- Manual Tool Length Measurement
- Tool Life Management 200 Sets (M80)
- Workpiece Position Measurement
- Axis Detachment
- Circular Interpolation (center/radius designation)
- Cutting Feed Override
- Cylindrical Interpolation
- Data Protection by User Level
- Data Protection Key
- Drip Feed Through RS232, USB, SD Front Side Memory Card, or Data Server SD Memory Card
- Background Editing
- Buffer Correction
- Display/Edit 3 Programs at Once (15" & 19" screen)
- Editing of All Memory Types (memory card front slot, data server, USB)
- G Code Guidance
- Machining Program Input Mistake Check Warning
- Multi-part System Simultaneous Program Editing
- Program Editing
- Feed Per Minute (asynchronous feed)
- Feed Per Revolution (synchronous feed)
- G00 Feedrate Designation
- Helical Interpolation
- Inch/Metric Change Over
- Inclined Axis Control/Inclined Surface Machining Command
- Input/Output I/F
- SD Card I/F
- Control Unit-side SD Card I/F [up to 32GB]
- Front-side SD Card I/F [up to 32GB]
- Ethernet I/F (using FTP software)
- Front-side USB Memory I/F [up to 32GB]
- RS-232C I/F
- Ladder Monitor
- Machine Accuracy Compensation
- Backlash Compensation
- Circular Error Radius Compensation
- Lost Motion Compensation
- Memory-type Pitch Error Compensation
- Rotation Center Error Compensation
- Smooth High-gain (SHG) Control
- Two-way Pitch Error Compensation
- Manual Speed Command (specify feedrate in running program by handwheel)
- Menu List
- Operation History
- Override Cancel
- Parameter Guidance
- Parameter Lock
- Program Control/Test
- 2D Graphic Check
- 3D Solid Program Check
- Dry Run
- Machine Lock
- Machining Time Computation
- Miscellaneous Function Lock (MST lock)
- Optional Block Skip
- Single Block
- Program Display Lock (9000 programs)
- Program Protection Lock (9000 programs)
- Program Support Functions
- 3-dimensional Coordinate Conversion
- 8000 Macro Variables
- Automatic Corner Override
- Compensation Data Input by Program
- Coordinate Rotation by Program/Parameter
- Corner Chamfering/Corner R
- Exact Stop Check Mode
- Figure Rotation
- Fixed Cycles
- Geometric Command
- High-speed Machining Mode I (G05P1) Maximum M80A-33.7kBPM
- High-speed Machining Mode II (G05P2) Maximum M80A-67.5kBPM
- High-speed High-accuracy control I (G05.IQ1) Maximum M80A- 33.7kBPM
- High-speed High-accuracy Control II (G05P10000) Maximum M80A-67.5kBPM
- High-speed High-accuracy Control III (G05P20000) Maximum M80A-135kBPM
- Interactive Cycle Insertion (icon based programming)
- Linear Angle Command
- Macro Interrupt
- Machining Condition Selection
- Mirror Image
- Parameter Input by Program (G10)
- Playback
- Polar Coordinate Command
- Programmable In-position Check
- Rapid Traverse Block Overlap
- Scaling
- Simple Programming (NAVI mill conversational programming)
- Smooth Fairing
- Subprogram Control (10 layers)
- SSS Control
- Timing Synchronization Between Part Systems
- Tool/Material Shape Input by Program
- Tolerance Control
- User Macro
- Rapid Traverse Override
- Remote Desktop Connection (using VNC software)
- Simple Screenshot Capture
- NC Explorer
- NC Monitor2
- NC Trainer2*
- Software Stroke End (over travel)
- Spindle Functions
- Constant Surface Speed Control
- Spindle Positioning (PLC dependent)
- Spindle Override
- Spindle Oscillation
- Spindle Orient (PLC dependent)
- Spindle Speed Clamp
- Spiral/Conical Interpolation
- Spline Interpolation (G05.I Q2 / G61.2)
- Spline Interpolation2 (G61.4)
- Stroke Check Before Travel
- Support for 17 Languages
- Tapping
- Deep-hole Tapping Cycle
- High-speed Synchronous Tapping Cycle
- Pecking Tapping Cycle
- Dwell (time-based designation)
- Program Storage 500kB [1280m] (1000 programs) Internal Memory
- Tool Center Point Control (TCP)
- Tool Compensation Functions
- 400 Sets or Higher (dependent on CNC type)
- Tool Compensation for Additional Axes (other than X and Z)
- Tool Length and Radius Offset
- Tool Wear Offset
- Touchscreen as Standard
- User Selectable Menu Configuration (rearrange the order of softkeys)
- Vertical Axis Pull-up
- Zero Return
- No Need to Purchase Options to Add Axis

SPECIFICATIONS v1320

SPECIFICATIONS

Axis Travel

Table (X axis)	51.96 in. (1,320mm)
Saddle (Y axis)	24.80 in. (630mm)
Head (Z axis)	26.77 in. (680mm)

Positioning

Auto Mode (X and Y axes)	1,692 in./min
Auto Mode (Z axis)	1,417 in./min
Manual Mode (X,Y and Z axes)	0-157 in./min
Feedrate Range (X and Y axes)	0.1-787 in./min
Feedrate Range (Z axis)	0.1-787 in./min

Acceleration x/y/z	236/197/156 in./s ² (6/.5/.4 m/s ²)
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Minimum Increment	0.00004 in.
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Ball Screw Diameter and Pitch (X axis)	1.77" x .630"
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Ball Screw Diameter and Pitch (Y axis)	1.57" x .630"
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Ball Screw Diameter and Pitch (Z Axis)	1.77" x .472"
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Axes Thrust Max (X/Y)	5,649 lbs
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Axes Thrust Max (Z)	10,593 lbs
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Spindle

Spindle Speed Range	12,000 RPM
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Spindle Motor HP Rating (1/6 H) Mitsubishi	30 hp @ Base Speed of 1400 RPM
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Spindle Torque 12,000 RPM (1/6 H)	110 ft/lbs
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Mitsubishi Spindle Taper	CT40 or BT40
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Tool Holder	Face & Taper 40
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Spindle Taper	5.9" min – 32.6
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Worktable

Working Surface	55.12 X 23.6 in. (1,400 x 600mm)
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Table Load	2,200 lbs. (1,000kg)
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Number of T-Slots	5
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T-Slot Size	.708" (18 mm)
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Control

Mitsubishi	M80
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4th Axis Preparation	Standard
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Automatic Tool Changer

Type of Tool Shank	BT40 or CT40 Taper
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Magazine Capacity	30 Tools (optional 40)
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Tool Select by Shortest Path and Random Select	Bi-Directional
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Maximum Tool Diameter (adjacent pockets)	2.95 in. (75 mm)
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Maximum Tool Diameter (without adjacent pockets)	5.9 in. (150 mm)
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Maximum Tool Length	118.1 in. (300 mm)
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Maximum Tool Weight	15.0 lbs. (7kg)
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Random Tool Change Time (chip-to-chip) ISO 10791-9	4.6 Seconds
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Coolant and Chip Management

Swarf Removal	Chip Conveyor
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Cutter Air Blast	Optional
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Coolant Tank Capacity	114 US Gallons (450L)
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Wash Down	Standard
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Wash Gun	Standard
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Accuracy

Positioning	Ap .0004 in. (.10mm)
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Repeatability	Ru .0002 in. (.005mm)
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Machine Size

Machine Height	125 in. (3,165 mm)
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Machine Floor Space (chip conveyor not included)	130 x 89 in. (3,300 x 2,265 mm)
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Mass of Machine	19,400 lbs (8,800kg)
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Service Requirements (Mitsubishi)

Electrical Supply (input)	
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Structure	Balanced 3-phase
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Cycles	60 Hz
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Power	83 FLA
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Voltage	208 – 230 Volts
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Note: Other Voltages Require an External Transformer

Compressed Air (pressure flow)	87 psi/4.9 cfm
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Coolant Tank Capacity	114 Gallons
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Nozzle Coolant	34.3 gal/min @58 psi
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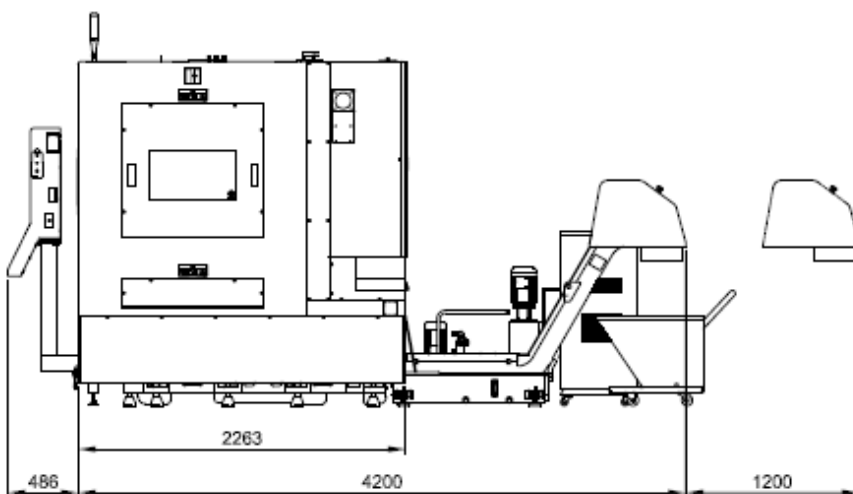
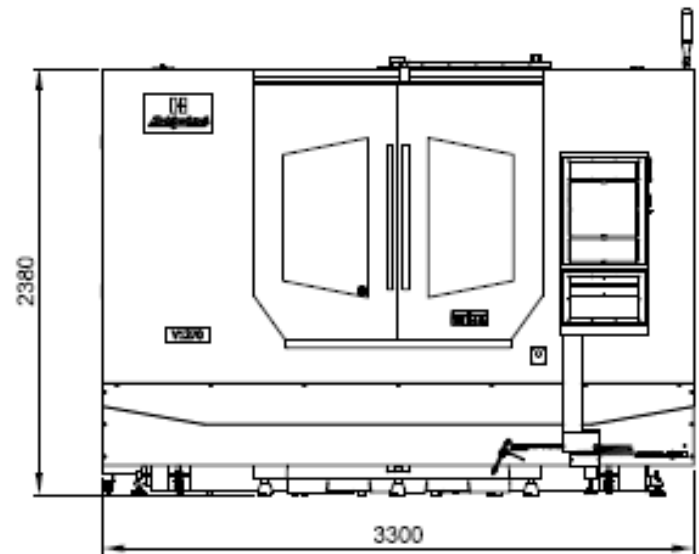
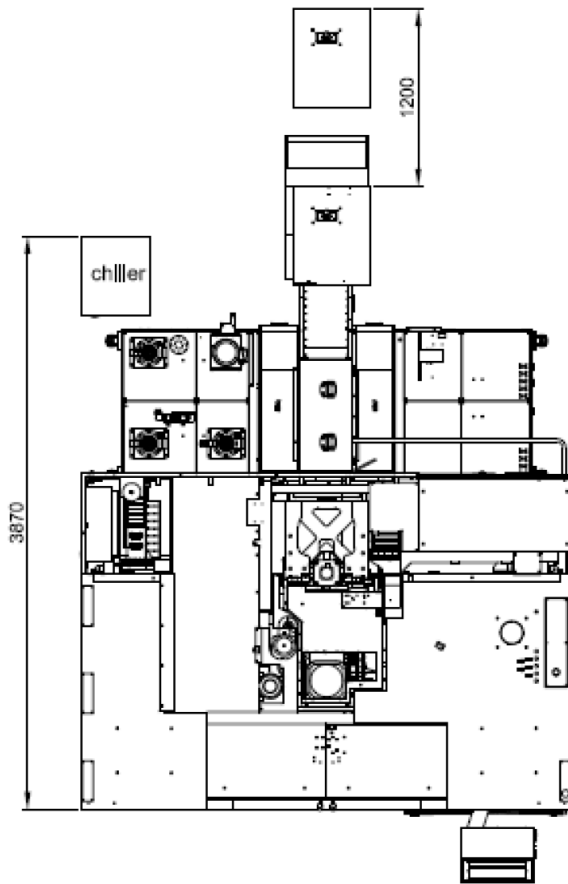
Shipping Size	114 x 92 x 98 inch. (2,900x2,315x2,475mm)
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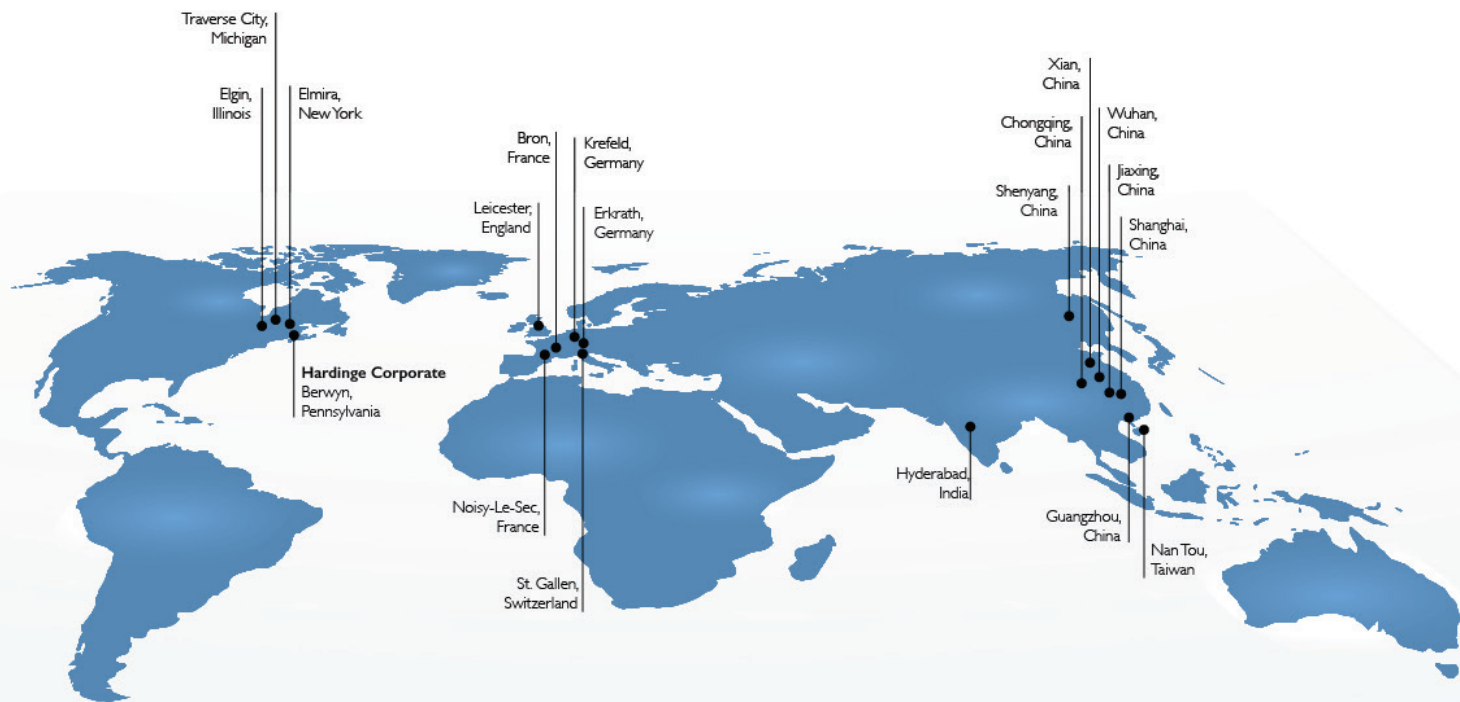
Shipping Weight (approx)	23,760 lbs (10,800) kg
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To maintain the accuracy of this machine, we recommend that the machine is sited on a flat area free from cracks and expansion joints. The composition of the floor and sub-structure should be of suitable construction to bear the weight of this machine. Any friable areas should be using accepted building construction techniques (to code).

Once a suitable foundation is in place, we recommend that the machine is rigidly bolted to the floor using the bed fixing/ jacking positions to prevent movement or vibration.

V1320 FLOOR PLAN





HARDINGE COMPANIES WORLDWIDE

Hardinge is a leading international provider of advanced metal-cutting solutions. We provide a full spectrum of highly reliable CNC turning, milling, and grinding machines as well as technologically advanced work-holding accessories.

The diverse products we offer enable us to support a variety of market applications in industries including aerospace, agricultural, automotive, construction, consumer products, defense, energy, medical, technology, transportation and more.

We've developed a strong global presence with manufacturing operations in North America, Europe, and Asia. Hardinge applies its engineering and applications expertise to provide your company with the right machine tool solution and support every time.

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