

BRIDGEPORT GX SERIES

PERFORMANCE VERTICAL
MACHINING CENTERS

GX1300

GX1600



 **HARDINGE**[®]

Bridgeport[®]

BRIDGEPORT GX SERIES

PERFORMANCE VERTICAL MACHINING CENTERS

Bridgeport GX Series vertical machining centers with thousands installed worldwide. These machines include superior design characteristics to ensure many years of accurate and reliable performance.



EXCELLENT AND STABLE ACCURACY

Stable static and cutting accuracy

- Accurate positioning accuracy ISO230-2
 - Full stroke positioning 0.014 mm
- Accurate repeatability accuracy ISO230-2
 - Full stroke repeatability 0.007mm
- Ball-bar accuracy, example accuracy 0.004 mm on X-Y plane
- “Circle-Diamond-Square” cutting complies with ISO 10791-7

RIGID STRUCTURE

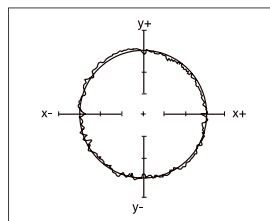
Longer tool life and higher heavy cutting ability.

- Roller linear guideways on each axis, low static and dynamic friction providing longer machine life and greater positioning accuracy
- Direct drive-nut ball screws feature low noise, low thermal growth and heavy-duty transmission.
- Rigid C-frame fixed column design. Spindle carrier, column and base are manufactured from high quality cast iron, contributing to overall rigidity and machining capabilities.

HIGHER EFFICIENCY

Faster machining duty cycle time, lower non-cutting time.

- Spindle motor 15/18,5/25 kW for GX 1300/1600 feature higher cutting efficiency
- Equipped spindle as standard: 10000 rpm
- Max rapid on X, Y and Z axes is 36 m/min



BALL-BAR ACCURACY

X-Y Plane Circularity: 4 μ m

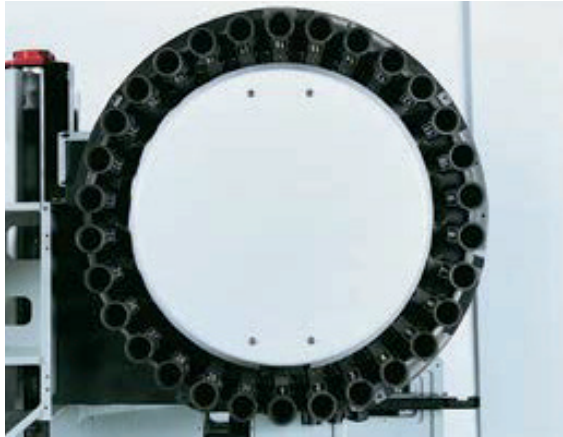


ISO 10791-7

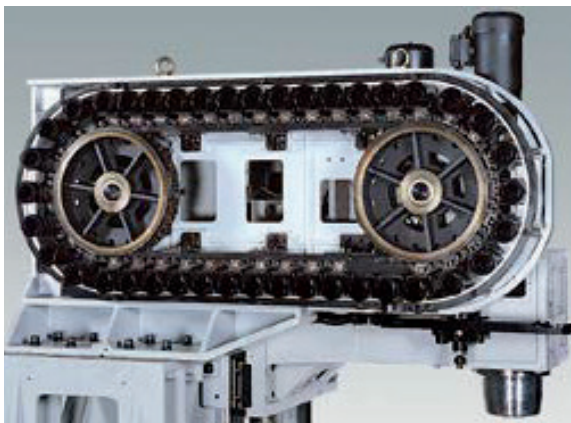
“CIRCLE-DIAMOND-SQUARE”
CUTTING EXAMPLE

KEY FEATURES

STANDARD 30-TOOL SWING ARM

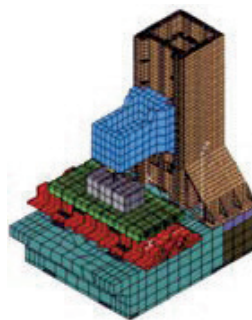


OPTIONAL 40-TOOL SWING ARM



FEA (FINITE ELEMENT ANALYSIS)

FEA techniques were used to analyze the structure deviation, stress, thermal rise and vibration. This process ensures excellent geometric accuracy and cutting surface shown by our Hardinge engineering team.



STIFF AND THERMALLY-STABLE SPINDLE

Significant radial and axial stiffness with quadset of angular-contact bearings on the front and taper bore roller bearing on the rear. Noncontact magnetic encoder design eliminated noise and vibration, also provides more accurate spindle orientation feedback.

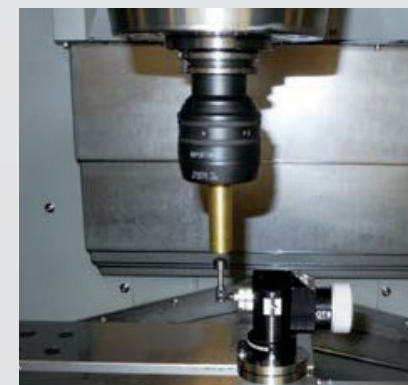


AUTOMATIC TOOL CHANGER

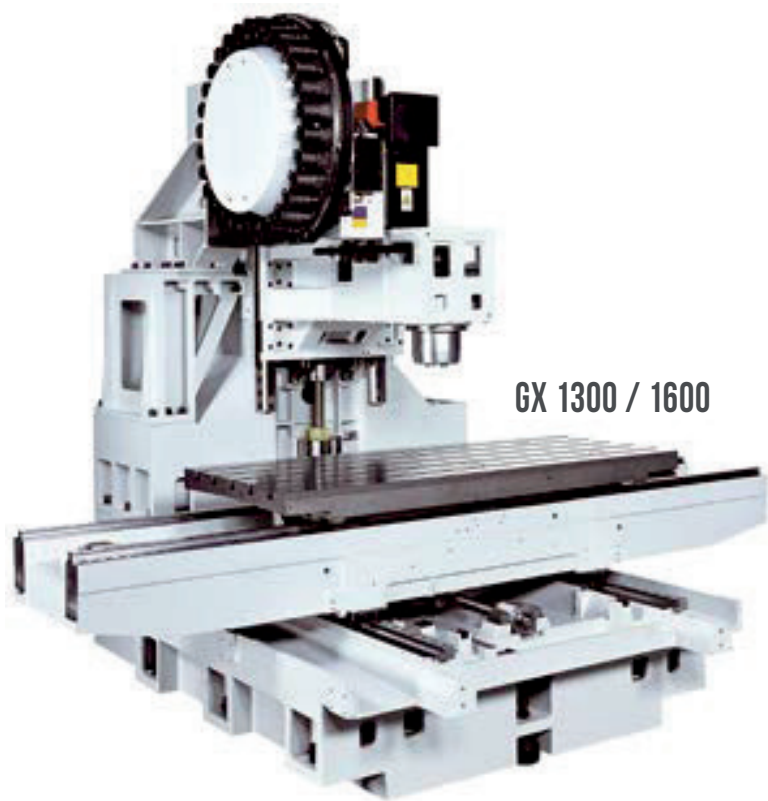


TOOL PROBE (OPTIONAL)

Automatic Renishaw Tool Probe, easy to use and define tool offset combined with marco programming. Reduce non-cutting cycle time and easily check tool length, diameter or wear.



KEY FEATURES



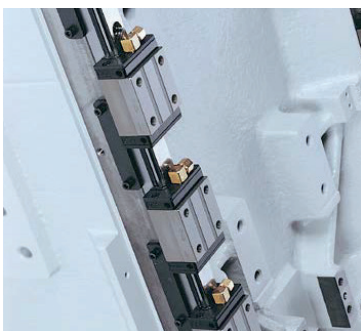
GX 1300 / 1600



20,000 HOUR LIFE TEST FOR RELIABILITY AND QUALITY

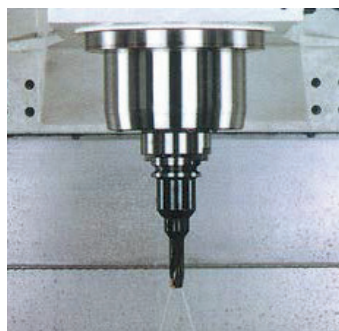
VMC prototype life test confirms:

- Benchmark Test
- MTBF Test
- Wear Test
- Accuracy Test
- Vibration Test
- Noise Test
- Leakage Test
- Safety Test
- Thermal Test



RIGID LINEAR GUIDEWAYS

GX 1300/1600, 45mm wide roller type linear guideway on X / Y / Z axes. 45 mm dia. ball screw features rigidity, superior positioning & repeatability accuracy.



COOLANT THROUGH SPINDLE (OPTIONAL)

Supplies coolant to the cutting edge at 280psi. Allows higher speed, deep hole drilling and blind pocket milling. Enhanced tool life and machining accuracy.

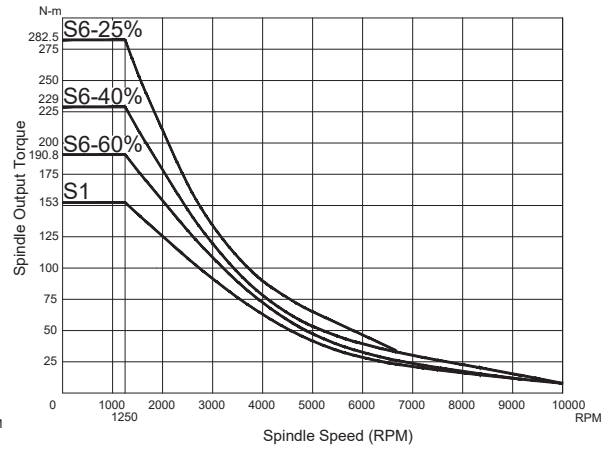
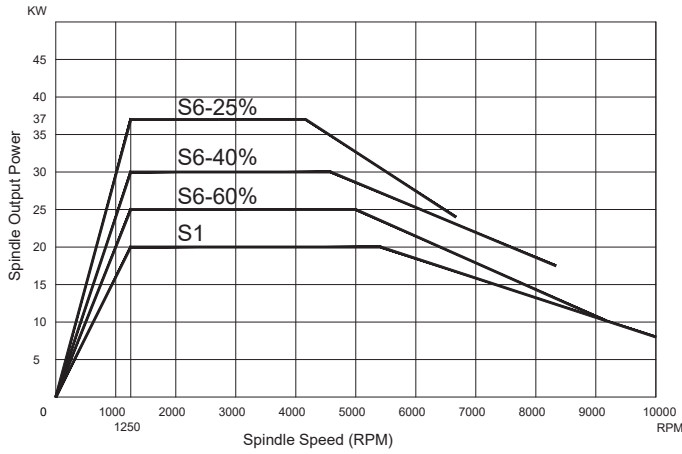


2-SPEED GEARBOX

(OPTIONAL FOR #50 SPINDLE)
Planetary-type gearbox features high-torque spindle and helical sun gear design offers higher efficiency, quieter, smoother and stronger-running spindle power output. (8000rpm max.)

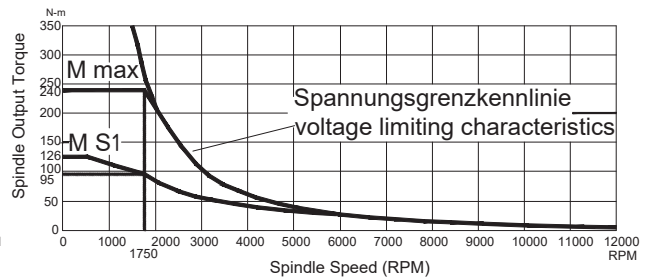
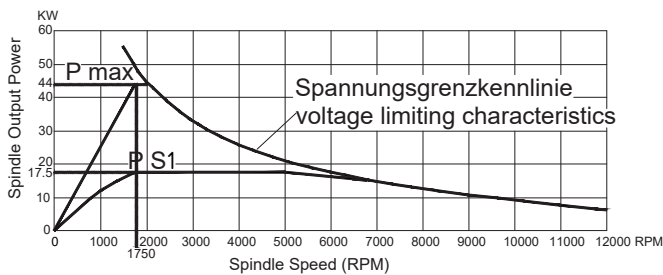
SPINDLE OUTPUT DIAGRAM

GX 1300/1600 #40 - 10000 RPM SPINDLE HEIDENHAIN



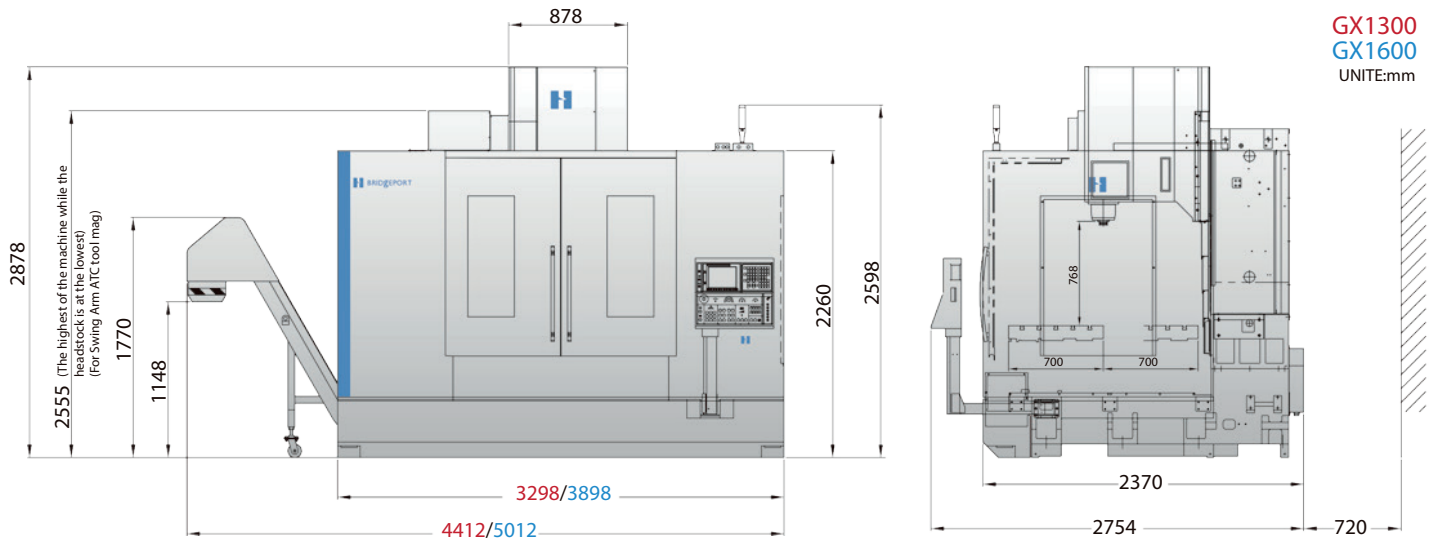
HEIDENHAIN QAN 260L/12000 RPM SPINDLE MOTOR

GX 1300/ 1600 #40 - 10000 RPM SPINDLE SIEMENS



SIEMENS 1PH 8133 12000 RPM SPINDLE MOTOR

TECHNICAL SPECIFICATIONS



MACHINE CONFIGURATION	GX 1300	GX 1600	
TRAVEL			
X x Y x Z	1300 x 700 x 635	1600 x 700 x 635	mm
Table Front End to Door	113.4	113.4	mm
Spindle Center to Column	725	725	mm
TABLE			
Table Dimension	1425 x 700	1700 x 700	mm
Weight on Table (Max.)	1500	1500	kg
T-Slots (width x no. x pitch)	18mm x 125mm x 5	18mm x 125mm x 5	
SPINDLE TORQUE MOTOR RATING			
Speed (Max.)	10000	10000	rpm
Fanuc (S3 25%)*	33.5 hp / 25 kW	33.5 hp / 25 kW	
Siemens (S6 25%)*	35 hp / 26.3 kW	35 hp / 26.3 kW	
Heidenhain (S6 25%)*	49.6hp / 37 kW	49.6hp / 37 kW	
Fanuc (S3 25%)*	190	190	N-m
Siemens (S6 25%)*	143	143	N-m
Heidenhain (S6 25%)*	282.5	282.5	N-m
TOOL CHANGER			
Tool Capacity	30	30	
ATC Type	Swing Arm	Swing Arm	
Tool Selection	Bi-Directional	Bi-Directional	
Tool Holder Type	BT or SK	BT or SK	
Tool Diameter (Max.)	75	75	mm
Dia. with Adjacent Pots Empty	150	150	mm
Tool Length (Max.)	350	350	mm
Tool Weight (Max.)	7	7	kg
Tool Change Time (Avg.)	2.7	2.7	sec
ACCURACY (ISO 230-2)			
Positioning (All Axes)	0.014	0.014	mm
Coolant Pressure	0.007	0.007	m
MOTORS			
Axis Motor Rating	4	4	
Coolant Motor Rating	60 Hz 50 Hz	0.8 / 2.35 0.54 / 2.6	kW

MACHINE CONFIGURATION	GX 1300	GX 1600	
LUBRICATION			
Spindle Bearing	Grease	Grease	
Linear Guideways	Central Manual Grease Lubricator		
Ball Screws	Central Manual Grease Lubricator		
COOLANT CAPABILITIES			
Coolant Tank Capacity	400	500	liter
BALL SCREW			
Diameter	45	45	mm
Z Axis Travel	12	12	mm
CHIP MANAGEMENT SYSTEM			
Hinge Type Chip Conveyor			
FEED RATES (ALL AXES)			
Rapid and Jog (Max.)	36	36	m/min
Cutting Feed Rate (Max.)	12	12	m/min
Tool Diameter (Max.)	75	75	mm
FEED RATES (ALL AXES)			
Compressed Air Require (Min.)	70 psi 5kg / cm2	70 psi 5kg / cm2	
Power Supply Requirement	95A FLA / 220V / 3 Phase (Fanuc) 65A FLA / 400V / 3 Phase (Siemens / Heidenhain)		
MACHINE WEIGHT			
Weight	9400	9800	kg
OPTIONS			
6000 rpm Spindle, #50 Taper with Gearbox	4th Axis Drive Package		
12000 rpm Spindle (grease)	Scraper Type		
15000 rpm Spindle (oil / air)	Part Probe		
Coolant Through Spindle 280 psi (20 bar) or 700 psi (50 bar)	Linear Scales		
Chip Conveyor Tool Probe	Coolant Wash Down Hose		
Part Probe	Swing Arm Type ATC 40 Tools (#40 Taper)		
1 Additional Overhead Worklight (bright)	Swing Arm Type ATC 32 Tools (#50 Taper)		
Air Purge	Swing Arm Type ATC 24 Tools (#50 Taper)		
Z Axis Column Raiser 260 mm			
CONTROLLER OPTIONS			
Siemens 828D, Heidenhain 620 HSCI and Heidenhain 640 HSCI			

To keep improvement and developing new functions, Hardinge Taiwan reserves the rights to change specifications without further notice

* Due to varying conditions, actual results may be greater or less than those listed.

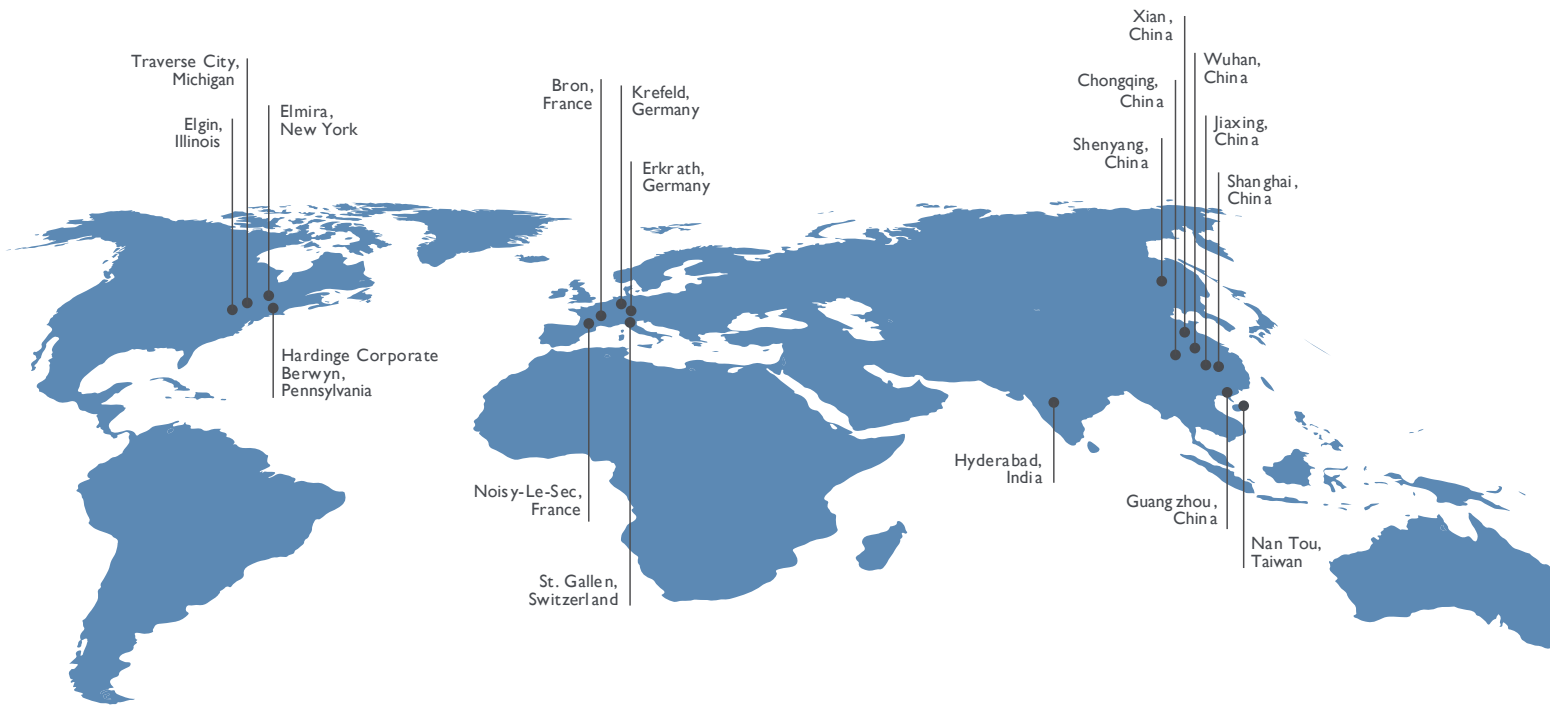
BRIDGEPORT GX 1300



BRIDGEPORT GX 1600



HARDINGE 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 workholding 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.

AMERICAS

PENNSYLVANIA
Hardinge Corporate
1235 Westlakes Drive
Suite 410
Berwyn, PA 19312

NEW YORK
Hardinge
One Hardinge Drive
Elmira, NY 14903
P. 800-843-8801
E. info@hardinge.com
www.hardinge.com

ILLINOIS
Hardinge
1524 Davis Road
Elgin, IL 60123
P. 800.843.8801

ASIA

CHINA
Hardinge Machine
(Shanghai) Co. Ltd.
1388 East Kangqiao Road
Pudong, Shanghai 201319
P. 0086 21 3810 8686

TAIWAN
Hardinge Taiwan Precision
Machinery Limited
4 Tzu Chiang 3rd Road
Nan Tou City 540
Taiwan
P. 886 49 2260 536
E. cs@hardinge.com.tw

EUROPE

FRANCE
Jones & Shipman SARL
8 Allee des Ginkgos
BP 112-69672
Bron Cedex, France

GERMANY
Hardinge GmbH
Fichtenhain A 13c
47807 Krefeld
P. 49 2151 49649 10
E. info@hardinge-gmbh.de

SWITZERLAND
L. Kellenberger & Co. AG
Heiligkreuzstrasse 28
CH 9008 St. Gallen
Switzerland
P. 41 71 2429111
E. info@kellenberger.net