

TURNING

GS Performance
Turning Centers



TURNING MILLING GRINDING WORKHOLDING
www.hardinge.com

HARDINGE
EXPECT MORE™

GS-Series Performance Turning Centers

Exceptional combination of features for speed, power, accuracy and durability in a compact design and affordable price

GS-Series turning centers are rigid and reliable machines that feature a robust one-piece cast iron base, heavy-duty linear guideways and ballscrews, and many standard value-added features— heavy-duty dual-wound spindle motor, 3-jaw chuck, 12-station universal VDI top plate, 40-psi through-tool and headwall coolant, foot switch, chip conveyor interface, air hose with air gun, a swing-out CNC control panel for ease of operation, and much more. Plus the standard Hardinge/Fanuc *i*-Series GS CNC control includes many value-added features that are offered as options by other machine builders. Choose from the numerous productivity options and you'll have a truly versatile machine— and with the level of quality you would expect with any Hardinge product.

GS 150

- A2-5 spindle nose
- 15-hp/11-kW spindle drive system
- 126.5ft-lb/171.5Nm torque
- 6,000-rpm spindle speed
- 6.65"/169mm jaw chuck standard

GS 200

- A2-6 spindle nose
- 15-hp/11-kW spindle drive system
- 152ft-lb/206Nm torque
- 5,000-rpm spindle speed
- 8.26"/210mm jaw chuck standard



GS 200/66 and GS 200/66 L

- A2-6 spindle nose
- 25-hp/18.5-kW spindle drive system
- 301.1ft-lb/408Nm torque
- 4,200-rpm spindle speed
- 8.26"/210mm jaw chuck standard

GS 250 and GS 250 L

- A2-8 spindle nose
- 25-hp/18.5-kW spindle drive system
- 361.3ft-lb/490Nm torque
- 3,500-rpm spindle speed
- 10.00"/254mm jaw chuck standard

Built the Hardinge® way for long lasting performance

GS 200/66 and GS 250

Industry's most reliable motors and drives. Heavy-duty axis motors and drives provide superior machine capability.

Environmentally friendly grease lubrication minimizes overall maintenance cost.

Non-contact magnetic spindle encoder eliminates the need for belted encoder, increasing overall reliability. One-degree spindle orient included.

Best-in-class spindle design incorporates 2-roller and 2-angular contact bearing for superior rigidity, thermal stability and overall spindle life.

Heavy-duty linear guideways provide optimum stiffness and rigidity, resulting in heavier cutting capability and longer machine life.

Dual-wound spindle motor provides heavy-duty cutting capabilities.

Heavy-duty, fixed pre-tensioned double-nut ballscrews provide superior rigidity, machine accuracy and repeatability.

Machine base and all major castings are made with high quality grey cast iron for superior rigidity, durability, and thermal stability.

Strategically ribbed 30-degree slant bed design of one piece construction.

All machines are laser inspected to strict quality standards.

High class double-nut ball screws provide superior machine accuracy and repeatability.

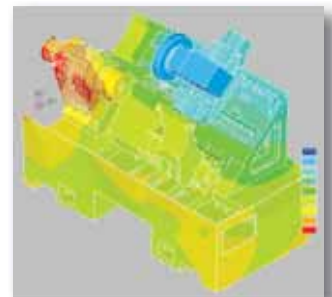
Fully-programmable #5 MT hydraulic tailstock option features robust boxway design for optimum tailstock rigidity.

GS 150 and GS 200

All of the features and benefits listed above that are not called out below also apply to the GS 150 and GS 200 models.

Strategically ribbed 45-degree slant bed design of one piece construction.

FEA-qualified structural components



High quality linear guideways provide greater positioning accuracy, faster traverse rates, less machine wear, longer machine life and overall machining consistency.

Fully-programmable #4 MT hydraulic tailstock option eliminates human intervention compared to competitive designs.

One piece base construction allows for easy chip and coolant management.

GS-Series Turning Centers...Performance and Value

Standard features that provide enhanced machining capabilities, longer machine life and ease of use

Extra-stable, heavy machine base

Our one-piece, high-quality cast iron bases feature an impressive weight for heavy cutting, precision tolerances and fine surface finishes—

- GS 150 and GS 200—2,970 pounds/1,350 kilograms
- GS 200/66 and GS 250—4,850 pounds/2,200 kilograms
- GS 200/66 L and GS 250 L—6,640 pounds/3,010 kilograms

The robust bases are strategically ribbed, providing superior rigidity and durability. A 45-degree base is featured on GS 150 and GS 200 models; 30-degree base on all other models.



GS 200/66 and GS 250 shown

6-Ball linear guides



Heavy-duty linear guideways and ballscrews

The X- and Z-axis ball screws, linear guideways and guide trucks feature a large load rating with minimal friction, resulting in low heat and thermal growth, longer machine life, maximum static and dynamic stiffness, and overall machining consistency. The double-nut hardened & ground ball screws are laser calibrated and supported by heavy-duty ball screw supports. Grease lubrication is provided to the ball screws and guide trucks. Fast traverse rates of 1,181 ipm / 30m/min provide reduced cycle times.

Grease lubrication system

Grease lubrication is provided for all ballscrews and linear guide truck bearings on GS 150 and GS 200 models. Grease lubrication provides several advantages over way lube oil systems—

- No oil skimmer required
- No degradation of water-base coolants
- Environmentally friendly—no need to dispose of contaminated oil
- Improves machine maintenance

GS 200/66 and GS 250 machines, including long bed models, feature “greased for life” guideways.

Powerful dual-wound spindle motors*

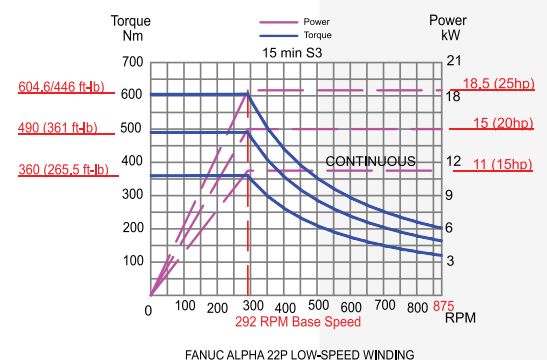
GS-Series machines feature a dual-wound spindle motor for aggressive cutting capabilities. A 15-hp spindle drive (17.4-hp with the Siemens control option) is included on GS 150 and GS 200 models; GS 200/66 and GS 250 machines feature a 25-hp drive. Spindle speed ranges are 6,000-rpm (GS 150), 5,000 rpm (GS 200), 4,200 rpm (GS 200/66), and 3,500-rpm (GS 250). The rigid spindle design includes two roller bearings and two angular contact bearings for optimum performance and long life. Non-contact magnetic encoders are used for one-degree spindle orient and rigid tapping.

* Available only on GS machines equipped with the Hardinge/Fanuc i-Series control

Model	Peak Power	Torque†	Base Speed	Max. Speed
GS 150	15hp/11kW	126.5ft-lb/171.5Nm	500 rpm	6,000 rpm
GS 200	15hp/11kW	152ft-lb/206Nm	417 rpm	5,000 rpm
GS 200/66	25hp/18.5kW	371.7ft-lb/504Nm	350 rpm	4,200 rpm
GS 200/66 L	25hp/18.5kW	371.7ft-lb/504Nm	350 rpm	4,200 rpm
GS 250	25hp/18.5kW	446ft-lb/604.6Nm	292 rpm	3,500 rpm
GS 250 L	25hp/18.5kW	446ft-lb/604.6Nm	292 rpm	3,500 rpm

† Low speed winding specification

Spindle Output (Power/Torque) GS 250 Shown



Versatile spindle tooling

GS 150
A2-5 Spindle Nose
with 6" Wedge-Style
Chuck—standard



Lever-Operated,
Counter-Balanced Chucks

GS 200 and
200/66
A2-6 Spindle Nose
with 8" Wedge-Style
Chuck—standard



16C, 20C and 3J (GS 200)
and 5C, 16C and 3J (GS 150)
Pull-Back Collet Chucks

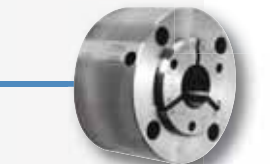
GS 250
A2-8 Spindle Nose
with 10" Wedge-Style
Chuck—standard



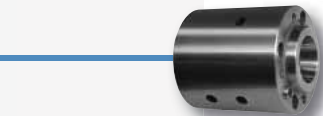
DIN Standard Push-
to-Close Collet Chucks—
Solid or B Master Collets
with S-Pads



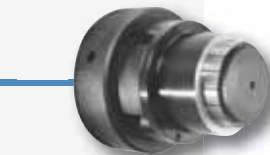
Dead-Length®
Collet Chucks



HQC® (Quick Change)
Collet Chuck with HQC
Collet Heads



A2-6 to A2-5 Spindle Nose
(GS 200) and A2-5 Nose
(GS 150) for Step Chucks



Sure-Grip® ID Expanding
Arbor/Collet Systems

Hardinge spindle tooling options

Hardinge manufactures a full line of collets, jaw chucks and quick-change spindle tooling for the most demanding workholding applications. Collet adaptation chucks are available. Request brochure 2353 and 2366 for a concise overview of the tooling available on Hardinge turning centers.

GS 200/66, GS 250,
GS 200/66 L and GS 250 L



GS 150 and GS 200



Standard features include:

- 3-jaw wedge-style chuck
- Spindle reference (servo lock)
- Chuck/collet closer foot switch
- Chip conveyor Interface
- Air hose with air gun
- One-degree spindle orient
- Rigid tapping
- Swing-out CNC pendant
- Run time and parts counter
- Complete operator's, programmer's and maintenance documentation

GS-Series Turning Centers...Performance and Value

The best combination of standard features for the machining predictability you need to be more productive and profitable

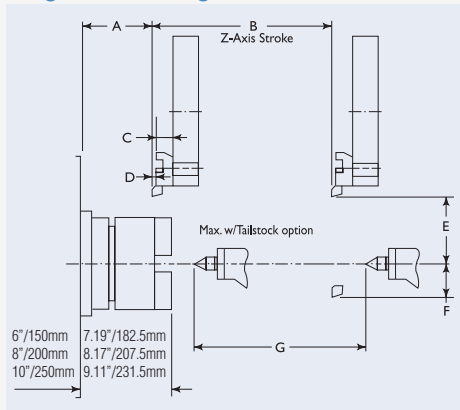
VDI top plate

Bidirectional indexing of the 12-station VDI-30 turret top plate (VDI-40 on GS 200/66 and GS 250 models) allows shortest path indexing for reduced non-cut time. And since there are a large number of tool stations, easier processing of part families and fewer setups are realized. Fast setup times are possible by using quick-change VDI tool holders. Coolant is fed through tool holders via turret ports. This allows the operator to direct coolant precisely to the machining operation, providing enhanced cutting and chip management. The non-lift turret indexing ensures contaminant-free operation—indexing is by a brushless servomotor with positive hydraulic clamping on a 3-piece curvic coupling. The turret pivot (safety shear) feature helps prevent damage to the machine.

Rigid tapping

Synchronization between the main spindle and the Z-axis motion provides precise and fast rigid tapping operations.

Large machining area



GS 150 and GS 200

A	6.398" / 162.5mm	B	15.984" / 406.0mm
C	1.650" / 42.0mm	D	2.50" / 63.5mm
E	5.984" / 152.0mm	F	2.992" / 76.0mm
G	13.425" / 341.0mm		

GS 200/66 and GS 250

A	7.067" / 179.5mm	B	23.622" / 600.0mm
C	1.850" / 47.0mm	D	2.50" / 63.5mm
E	7.402" / 188.0mm	F	3.681" / 93.5mm
G	24.606" / 625.0mm†		

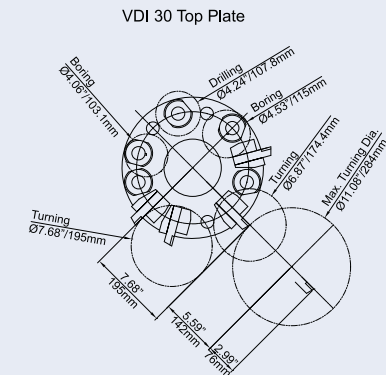
GS 200/66 L and GS 250 L

A	7.067" / 179.5mm	B	41.34" / 1050.0mm
C	1.850" / 47.0mm	D	2.76" / 70.0mm
E	7.402" / 188.0mm	F	3.681" / 93.5mm
G	42.322" / 1075.0mm†		

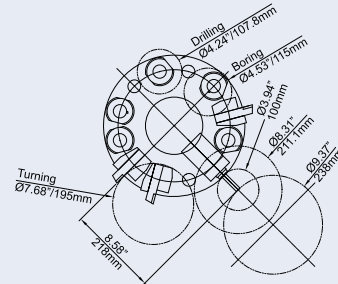
† plus 4.724" / 120mm quill stroke

Minimal tool interference

GS 150 and GS 200

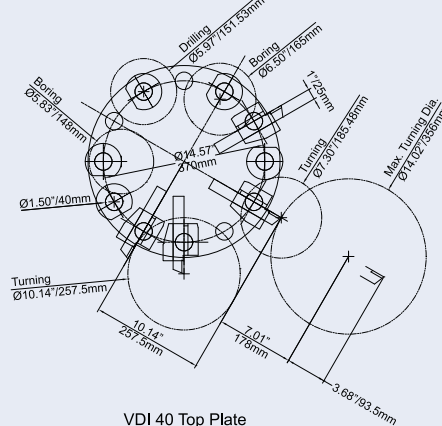


VDI 30 Top Plate with Live Tooling

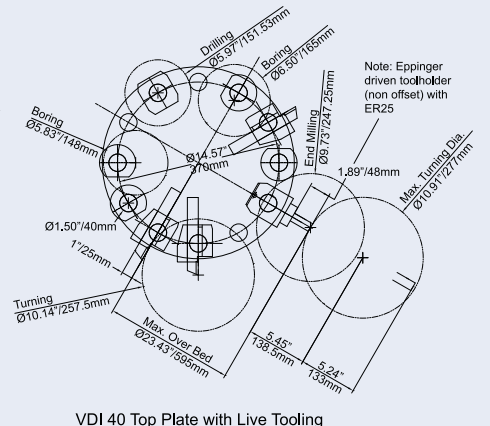


The illustrations represent the maximum part diameters that can clear adjacent tool holders. A balanced weight distribution of tooling on the top plate is recommended.

GS 200/66 and GS 250

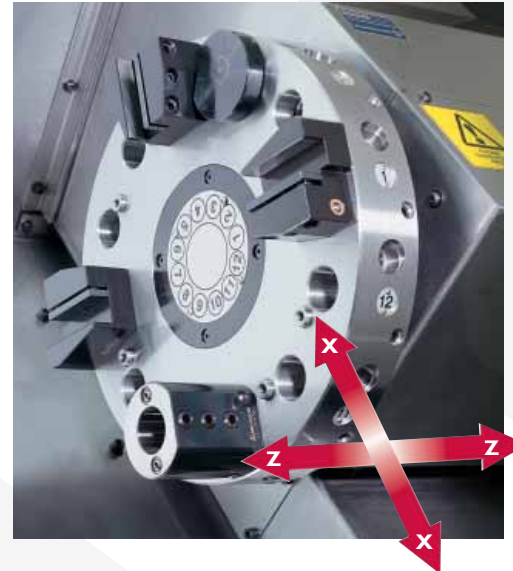


VDI 40 Top Plate



VDI 40 Top Plate with Live Tooling

GS 150 and GS 200 shown



Productivity options for enhanced machining performance

Live tooling/C-Axis contouring

The 5,000-rpm live tooling option (3,500-rpm on GS 200/66 and GS 250 models) eliminates the need for many secondary milling machine operations, reducing additional part handling and setup cost. All stations of the top plate are live-tool ready with only one station actively driven at one time. Separate servomotors are used for turret indexing and live tool operations. A disc-type hydraulic spindle brake provides positive locking during static machining operations.



C-axis provides positioning in increments of .001 degree. Three-dimensional contouring, complex round and prismatic machining, square shoulder and lettering are accomplished by synchronizing the spindle with the X and Z axes. Rigid tapping can be done with both cross- and end-working functions.

280-Psi/20-bar thru-tool coolant

This high capacity coolant option provides direct flow of coolant to the active tool cutting operation, providing enhanced chip management, higher permissible feeds and speeds, cooler machining conditions for longer tool life and optimum surface finishes.

Other optional features:

- Chip Conveyor
- Stack light
- VDI Turret Tooling
- Mist collector
- Manual VDI Tool Presetter System
- Bar Feed Systems
- Power Transformers

Parts catchers

The catcher options allow the operator to conveniently retrieve finished workpieces from outside the machining area during the machining cycle. A slide-type catcher is offered on GS 150 and GS 200 machines; arm-type on GS 200/66 and GS 250 models.



Slide-type
GS 150 and
GS 200



Arm-type
GS 200/66 and
GS 250

Robust hydraulic tailstocks

The fully-programmable tailstock options offer a robust design for greater stability when machining long components between centers, allowing closer tolerances, better surface finishes and higher speeds and feeds. It is hydraulically positioned and automatically controlled by the part program or manually pressure regulated via the control panel.

GS 150 and GS 200 machines feature a MT #4 tailstock on with 780lb/3470N thrust rating. GS 200/66 and GS 250 machines feature a #5 MT tailstock with 2103lb/9354N thrust rating. A 216ipm / 55m/min maximum feedrate is featured on all machine models.



GS 150 and
GS 200



GS 200/66 and
GS 250

Automatic tool touch probe

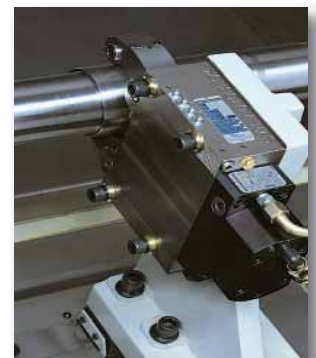
The retractable probe arm provides quick setup and easy use, enabling automatic insertion of tool offsets. The four-direction probe makes it possible to touch off both internal and external working tools. The machine can also be programmed to automatically touch off tools and be used for in-cycle tool wear and breakage detection. The probe arm swings up to storage position on the headwall.

Part probe

The part probe with macros allows in-process workpiece size verifications and automatic CNC adjustment of work offsets. The probe is capable of performing rapid first-off inspection, in-process reporting and allows "lights out" machining.

Steady rest

The steady rest is available on GS 200/66 L and GS 250 L long bed models to support long cylindrical parts, allowing heavier cuts and reduced tooling chatter while maintaining precision tolerances and surface finishes.



GS-Series Turning Centers

Hardinge/Fanuc 32-bit i-Series GS Control

General

- 8.4"/213mm Color LCD Display
- Two Interpolating Axes
- Programmable Resolution—0.0001"/0.001mm
- Tool Offset Capability—0.0001"/0.001mm
- Tool Geometry and Tool Wear Offsets (64 pair each)
- Inch/Metric Data Selection by G-Code
- 640 Meters (256 KB) Part Program Storage
- Flash Card Slot Capability (up to 128 MB)

Data Input/Output

- MDI (Manual Data Input) Operation
- Reader/Punch Interface Connection (RS-232 Software/Hardware)
- DNC (Remote Buffer)

Programming Functions

- Absolute/Incremental Programming
- Additional Tool Offsets (64 pair total)
- Additional Custom Macro Variables
- Background Editing
- Blueprint Programming
- Canned Cycles (Drilling)
- Chamfer/Corner Rounding
- Constant Surface Speed Programming
- Continual Thread Cutting
- Coordinate System Setting (G50)
- Custom Macro B
- Diameter/Radius Programming
- Extended Part Program Edit (Copy/Replace)
- Graphic Display
- Hardinge Safe Start Format
- Input of Offset Value by Programming (G10)
- Interpolation (Linear and Circular)
- Manual Guide (G-Code Assist)
- Multiple Repetitive Canned Cycles I (Turning)
- Multiple Repetitive Canned Cycles II (Pockets)
- Registered Part Programs (200 total)
- Rigid Tapping
- Single Block Operation
- Spare M-Codes (3)
- Thread, Synchronous Cutting
- Tool Life Management
- Tool Nose Radius Compensation
- Variable Lead Thread Cutting

Operation

- Block Delete
- Clamp/Unclamp Indicator Light Switch
- Coolant Control
- Dry Run
- Dwell Time
- Emergency Stop
- Feedhold
- Feedrate Override (0 to 150%)
- Incremental Jog
- Jog Feed Override (0 to 1260 mm/min)
- Machine Lock
- Manual Pulse Generator (MPG Handwheel)
- On-Screen Spindle & Axis Load Meters
- Option Stop
- Rapid Traverse Override (Low-25-50-100%)
- Single Block
- Spindle Speed and T-Code Displays on All Screens
- Spindle Speed Override (50 to 120%)

Miscellaneous

- Alarm Display
- English Color LCD Display with Full Keyboard
- French/German, Italian or Spanish
- On-Screen "HELP" Functions for Alarms
- Program Protect
- Run Time and Parts Counter
- Self-Diagnosis Function
- Spindle Lock (Servo)
- Spindle Orient—One-Degree
- Stored Pitch Error Compensation

† Standard value-added features that may be offered as options by other machine builders

- Standard
- Optional

Hardinge/Fanuc i-Series GS Control



Siemens Sinumerik 810D Control Option* with SHOPTURN®

General

- 10.4"/264mm Color TFT Display
- Automatic Axes Homing Cycle
- Two Interpolating Axes
- Graphical Tool Offset Setup
- Inch/Metric Data Selection
- Part Program Storage—1 MB (approx.) with up to 256 MB using optional Flash ROM Card
- Programmable Resolution—0.0001"/0.001mm
- 120 Tool Offset Pairs with Tool Length and Radius Wear—Memory B & C
- SHOPTURN Programming with Easystep—Facing, Turning, Threading, Boring, Drilling and Rigid Tapping Cycles

Data Input/Output

- MDI Operation
- RS-232C Interface
- Ethernet

Programming Functions

- Absolute/Incremental Programming
- Additional Work Coordinate Select (100)
- Advanced Part Program Editor with Cut, Paste, Search and Replace Capabilities
- Angle Chamfering/Corner Rounding
- Auto Acceleration/Deceleration
- Auto Corner Override
- Background Editing
- Background Program Transfer over RS-232C while Machining
- Block Search
- Canned Cycles for Turning, Grooving, Drilling, Face and Free Contour Milling & Thread Cutting, and Chamfer/Corner Rounding
- CIP—Arc Programming in Space
- Coordinate System Setting—Base Offset
- Continuous Path Mode
- Constant Surface Speed Cutting (G96)
- Constant/Variable Pitch Thread Cutting
- Definition of Variables (REAL, INT, BOOL) in Part Program
- Diameter/Radius Programming
- Display and Calculation of Machining Time
- Floating Reference Position Return
- FRAME Concept—Scaling, Mirroring & Rotation
- High-Level Programming Language (IF-THEN-ELSE, DO-WHILE, CASE, etc.)
- High-Level Program for Name Main & Sub-Programs
- Inverse Time Feedrate
- Linear Acceleration/Deceleration Before Interpolation
- Linear and Circular Interpolation
- MACRO Definitions
- Manual Reference Point Return
- Operator Message Generation from Part Program
- Program Number Search
- Program Restart
- Programmable Data Input

Siemens 810D Control option*



Programming Functions (Cont'd)

- Programmable Selection of Exact/Coarse Stop
- Programmable Work Area Limitation
- Program Test without Axes Motions
- Registered Part Programs (256 Total)
- Rigid Tapping
- Sequence Number Search
- Single Block Operation
- Smooth Approach/Retract from Contour
- Spare M-Codes (3)
- Sub-Program Nesting (8 Levels)
- Synchronous Spindle
- Thread Resynchronization and Recutting
- Tool Bottleneck Compensation
- Tool Length Compensation
- Tool Life Management
- Tool Nose Radius Compensation
- Variable Spindle Orientation
- Velocity Feed Forward

Operation

- Block Delete
- Clamp/Unclamp Indicator Light Switch
- Coolant Control
- Dry Run
- Dwell Time
- Editing with Mark, Cut, Paste, Search and Replace
- Emergency Stop
- Feedhold
- Feedrate Override (0 to 120%)
- Jog Feed Override (0 to 120%)
- Machine Lock
- Manual Pulse Generator (MPG Handwheel)
- Mid-Program Restart
- Option Stop
- Rapid Traverse Override (0 to 120%)
- Single Block/Single Block Find
- Spindle Speed Override (50 to 120%)
- Spindle Power Display/Monitoring

Miscellaneous

- Actual Feed and Speed Display
- Alarm Display
- Backlash Compensation
- Diagnostic Screen for PLC I/Os
- English Language
- French, German, Italian, or Spanish
- Overtravel Protection
- PC-based Training CD for SHOPTURN
- Quadrant Error Compensation (Friction Compensation)
- Run Time and Parts Counter
- Spindle Orient—One-Degree
- Stored Pitch Error Compensation

- Standard
- Optional

* Available on GS 150 and GS 200 models only

The Hardinge® Group...

Bridgeport® milling machines, Hardinge turning centers, Hauser, Kellenberger®, Tripet and Tschudin grinding machines, and Workholding and industrial products

Hardinge produces more than just the GS-Series turning centers shown in this brochure...we build a full range of value-packed and high-precision turning centers; vertical and horizontal machining centers; high-speed and 5-axis milling machines; creep-feed, jig, universal cylindrical and ID/OD grinding machines; and workholding systems and equipment. Hardinge machine tool technology is not only the most comprehensive on the market, it's also creating new benchmarks for quality, productivity and reliability.

Whether you are an OEM or sub-contract precision engineering company—regardless of the sectors you serve (aerospace, automotive, medical, autosport, mold, tool and die or general engineering)—the Hardinge product portfolio will interest you.

Our advanced manufacturing technologies in combination with our range of after-sales and support services (maintenance and service contracts; operator training; technical and applications support) have been designed to help you improve your performance and maintain your competitive advantage.

If you would like to know more about our manufacturing solutions, call us at 800.843.8801 or 607.734.2281 and request our Pocket Guide #1325. You can also e-mail us at info@hardinge.com or visit our web site at www.hardinge.com.

Hardinge precision and Super-Precision® CNC turning centers

We can help you turn your business around. From our competitively-priced SV-Series range of machines to our GS® and ELITE® Series II range of quick-changeover bar and chucking machines right through to our high-productivity RS-Series and SR-Series multi-tasking turning centers and QUEST® GT gang tool machines, we can provide you with the optimum turning solution.



Milling machines and machining centers

Our comprehensive line of Bridgeport milling machines have been designed to meet any manufacturing challenge you might be facing today or in the future. Our market-leading XR range of vertical machining centers continue to grow in popularity—and we have similar expectations with our new competitively-priced XV and GX VMCs as well. For heavy-duty, high metal removal we offer our HMC range of Horizontal Machining Centers and for increased manufacturing flexibility and improved productivity there's our 5-axis (5AX) model that is well worthy of consideration. If you are making your first step up to CNC machining, you will find that our entry-level GX 480 and GX 480 DT machines provide the ideal solution. For high-speed machining applications, our HSC machining centers are second to none.



Grinding machines

The Hardinge grinding companies include Hauser, Kellenberger, Tripet, Tschudin and, most recently, Bridgeport. Collectively we have all the technology, experience and know-how you need to transform your manufacturing operations. From high-performance cylindrical and jig grinding machines through to multi-functional ID/OD and universal machines—not to mention Bridgeport's state-of-the-art Flexible Grinding Centers (FGC 2). It doesn't get more comprehensive than this.



Workholding

Because we design and manufacture market-leading, technically-excellent machine tools it's no surprise that we know more than a thing or two about workholding solutions. From our extensive portfolio of CNC toolholders, collets and chucks—right through to our 5C Indexing systems—our workholding and fixturing technology will improve your performance when and where it matters most.

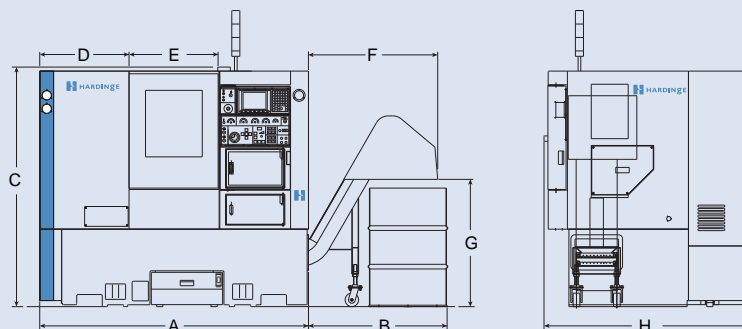


GS-Series Turning Centers

Specifications

	GS 150	GS 200	GS 200/66	GS 200/66 L	GS 250	GS 250 L
Spindle						
Chuck-Ready Spindle Config. (ANSI) ¹	A2-5	A2-6	A2-6	A2-6	A2-8	A2-8
Draw Tube Type	Hydraulic	Hydraulic	Hydraulic	Hydraulic	Hydraulic	Hydraulic
Through Draw Tube Capacity	1.77"/45mm	2.05"/52mm	2.60"/66mm	2.60"/66mm	3.07"/78mm	3.07"/78mm
Jaw Chuck Size (Max.)	6.65"/169mm	8.26"/210mm	8.26"/210mm	8.26"/210mm	10.00"/254mm	10.00"/254mm
(Gripping Capacity)	5.31"/135mm	7.28"/185mm	7.28"/185mm	7.28"/185mm	9.00"/228.6mm	9.00"/228.6mm
Machining Diameter (Max.)	11.10"/284mm	11.10"/284mm	14.015"/356mm	14.015"/356mm	14.015"/356mm	14.015"/356mm
Turning Length (Max.) ^{6,8}	15.00"/381mm	15.00"/381mm	22.00"/558.8mm	41.34"/1050mm	22.00"/558.8mm	40.31"/1024.6mm
Hang Weight with Device and Part	75lb/34kg	105lb/48kg	154lb/70kg	154lb/70kg	258lb/117kg	258lb/117kg
Spindle Centerline Height	39.40"/1,000mm	39.40"/1,000mm	41.00"/1,041mm	41.00"/1,041mm	41.00"/1,041mm	41.00"/1,041mm
Operator's Reach to Spindle	11"/280mm	11"/280mm	17"/432mm	17"/432mm	17"/432mm	17"/432mm
AC Digital Spindle Drive System ²						
Fanuc Control						
Peak Horsepower Rating	15hp/11kW	15hp/11kW	25hp/18.5kW	25hp/18.5kW	25hp/18.5kW	25hp/18.5kW
Torque Rating ³	126.5ft-lb/171.5Nm	152ft-lb/206Nm	371.1ft-lb/504Nm	371.1ft-lb/504Nm	446ft-lb/604.6Nm	446ft-lb/604.6Nm
Base Speed	500 rpm	417 rpm	350 rpm	350 rpm	292 rpm	292 rpm
Max. Speed (1-rpm Steps)	6,000 rpm	5,000 rpm	4,200 rpm	4,200 rpm	3,500 rpm	3,500 rpm
Siemens Control Option						
Peak Horsepower Rating	17.4hp/13kW	17.4hp/13kW	—	—	—	—
Torque Rating	64.6ft-lb/87.6Nm	77.5ft-lb/105.1Nm	—	—	—	—
Base Speed	1,200 rpm	1,000 rpm	—	—	—	—
Max. Speed (1-rpm Steps)	6,000 rpm	5,000 rpm	—	—	—	—
Carriage and Cross Slide						
Swing Dia. Over Way Cover (Max.)	18.00"/457mm	18.00"/457mm	23.42"/595mm	23.42"/595mm	23.42"/595mm	23.42"/595mm
Travel (Max.)—X Axis	6.023"/153mm	6.023"/153mm	10.70"/271.5mm	10.70"/271.5mm	10.70"/271.5mm	10.70"/271.5mm
Z Axis	16.00"/406mm	16.00"/406mm	23.62"/600mm	41.34"/1050mm	23.62"/600mm	41.34"/1050mm
Traverse Rates (Max.)						
X and Z Axes	1,181ipm / 30m/min	1,181ipm / 30m/min	1,181ipm / 30m/min	1,181ipm / 30m/min	1,181ipm / 30m/min	1,181ipm / 30m/min
Z-Axis Thrust (Max.)						
With Fanuc Control	4,026lb/17,907N	4,026lb/17,907N	4,944lb/21,991N	4,944lb/21,991N	4,944lb/21,991N	4,944lb/21,991N
With Siemens Control Option	1,342lb/5,970N	1,342lb/5,970N	—	—	—	—
Ball Screw Diameter—X Axis	1.102"/28mm	1.102"/28mm	1.417"/36mm	1.417"/36mm	1.417"/36mm	1.417"/36mm
Z Axis	1.102"/28mm	1.102"/28mm	1.575"/40mm	1.575"/40mm	1.575"/40mm	1.575"/40mm
Accuracy—All Machines Laser Inspected						
Evaluation Standard	ISO 230-2	ISO 230-2	ISO 230-2	ISO 230-2	ISO 230-2	ISO 230-2
Repeatability—X and Z Axes	.0001"/.0025mm	.0001"/.0025mm	.0001"/.0025mm	.0001"/.0025mm	.0001"/.0025mm	.0001"/.0025mm
Turret (Bidirectional)						
VDI 30	VDI 30	VDI 30	VDI 40	VDI 40	VDI 40	VDI 40
Number of Stations	12	12	12	12	12	12
Square Shank Tool Size (Max.)	¾" or 20mm	¾" or 20mm	1" or 25mm	1" or 25mm	1" or 25mm	1" or 25mm
Round Shank Tool Size (Max.)	1¼" or 32mm	1¼" or 32mm	1½" or 40mm	1½" or 40mm	1½" or 40mm	1½" or 40mm
Index Time (Adjacent Station) ⁴	1 Second	1 Second	0.78 Second	0.78 Second	0.78 Second	0.78 Second

GS 150 and GS 200



Note: Inch/Millimeter measurements shown

Dim.	GS 150	GS 200
A	78.66/1998	
B	40.55/1030	
C	70.12/1781	
D	26.13/663.8	
E	26.57/675	
F	37.80/960.1	
G	37.21/945	
H	61.06/1551	

	GS 150	GS 200	GS 200/66	GS 200/66 L	GS 250	GS 250 L
Live Tooling/C-Axis Option ⁵						
Tool Shank Diameter w/ER25 Collets	.079 to .625" 2 to 16mm	.079 to .625" 2 to 16mm	.079 to .625" 2 to 16mm	.079 to .625" 2 to 16mm	.079 to .625" 2 to 16mm	.079 to .625" 2 to 16mm
Power Rating at Tool Tip ²	5hp/3.7kW	5hp/3.7kW	10.5hp/8kW	10.5hp/8kW	10.5hp/8kW	10.5hp/8kW
Torque Rating at Tool Tip ²	20.64ft-lb/28.0Nm	20.64ft-lb/28.0Nm	25.80ft-lb/35.0Nm	25.80ft-lb/35.0Nm	25.80ft-lb/35.0Nm	25.80ft-lb/35.0Nm
Maximum Speed (I-rpm Steps)	5,000	5,000	3,500	3,500	3,500	3,500
C-Axis—Contouring Resolution	.001 Degree	.001 Degree	.001 Degree	.001 Degree	.001 Degree	.001 Degree
Positioning Accuracy	± 1 Arc Min.	± 1 Arc Min.	± 1 Arc Min.	± 1 Arc Min.	± 1 Arc Min.	± 1 Arc Min.
Repeatability	1.75 Arc Min.	1.75 Arc Min.	1.75 Arc Min.	1.75 Arc Min.	1.75 Arc Min.	1.75 Arc Min.
Tailstock (Fully-Programmable) Option ⁵						
Positioning	Hydraulic	Hydraulic	Hydraulic	Hydraulic	Hydraulic	Hydraulic
Morse Taper Center	MT No. 4	MT No. 4	MT No. 5	MT No. 5	MT No. 5	MT No. 5
Travel of Tailstock Base	13.42"/341mm	13.42"/341mm	24.60"/625mm	42.32"/1075mm	24.60"/625mm	42.32"/1075mm
Part Length (Max.) ^{6,8}	15.00"/381mm	15.00"/381mm	22.83"/580mm	46.89"/1191mm	23.32"/592mm	46.00"/1170mm
(Min.) ⁶	1.68"/42.7mm	1.68"/42.7mm	0.787"/20.0mm	0.787"/20.0mm	1.299"/33.0mm	0.787"/20.0mm
Feedrate (Max.)	216ipm / 5.5 m/min	216ipm / 5.5 m/min	216ipm / 5.5 m/min	216ipm / 5.5 m/min	216ipm / 5.5 m/min	216ipm / 5.5 m/min
Thrust (Max.)	780lb/3,470N	780lb/3,470N	2,103lb/9,354N	2,103lb/9,354N	2,103lb/9,354N	2,103lb/9,354N
Parts Catcher Option						
Workpiece Dia. x Length (Max.)	2.05 x 4" 52 x 100mm	2.05 x 4" 52 x 100mm	2.56 x 6.3" 65 x 160mm	2.56 x 6.3" 65 x 160mm	2.56 x 6.3" 65 x 160mm	2.56 x 6.3" 65 x 160mm
Miscellaneous						
Power Supply Requirement ⁷						
Fanuc Control	220v/67FLA/3phase	220v/67FLA/3phase	220v/74FLA/3phase	220v/74FLA/3phase	220v/74FLA/3phase	220v/74FLA/3phase
Siemens Control Option	460v/35FLA/3phase	460v/35FLA/3phase	—	—	—	—
Coolant Tank Capacity	33gal/125liter	33gal/125liter	76.62gal/290liter	76.62gal/290liter	76.62gal/290liter	76.62gal/290liter
Coolant Pressure—Standard	40psi/2.8bar	40psi/2.8bar	40psi/2.8bar	40psi/2.8bar	40psi/2.8bar	40psi/2.8bar
Thru-Tool Coolant Option	280psi/20bar	280psi/20bar	280psi/20bar	280psi/20bar	280psi/20bar	280psi/20bar
Machine Weight (Approx.)	5,940lb/2694kg	6,160lb/2794kg	10,915lb/4950kg	12,236lb/5550kg	11,024lb/5000kg	12,346lb/5600kg
Shipping Weight (Approx.)	6,739lb/3057kg	6,959lb/3157kg	11,664lb/5290kg	13,117lb/5950kg	11,773lb/5,340kg	13,228lb/6000kg
Machine Dimensions—Length	78.66"/1998mm	78.66"/1998mm	117.64"/2988mm	149.29"/3792mm	117.64"/2988mm	149.29"/3792mm
Length w/Chip Conveyor Option	116.46"/2958mm	116.46"/2958mm	144.60"/3672mm	176.22"/4476mm	144.60"/3672mm	176.22"/4476mm
Depth	61.06"/1551mm	61.06"/1551mm	84.33"/2142mm	84.33"/2142mm	84.33"/2142mm	84.33"/2142mm
Depth w/Control Unit at Max. Swivel	84.76"/2153mm	84.76"/2153mm	96.58"/2453mm	96.58"/2453mm	96.58"/2453mm	96.58"/2453mm
Height	70.12"/1781mm	70.12"/1781mm	71.34"/1812mm	71.77"/1823mm	71.34"/1812mm	71.77"/1823mm
Floor Area (Approx.)	35.5ft ² /3.3m ²	35.5ft ² /3.3m ²	54.9ft ² /5.1m ²	91.5ft ² /8.5m ²	54.9ft ² /5.1m ²	91.5ft ² /8.5m ²

1—Optional collet adaptation chucks available in many configurations, including 5C, 16C, 20C, 3J, S15, S20, B42 and B60.

2—Peak ratings used for power and torque specifications.

3—Low speed winding specification.

4—Index time (includes unclamp and clamp).

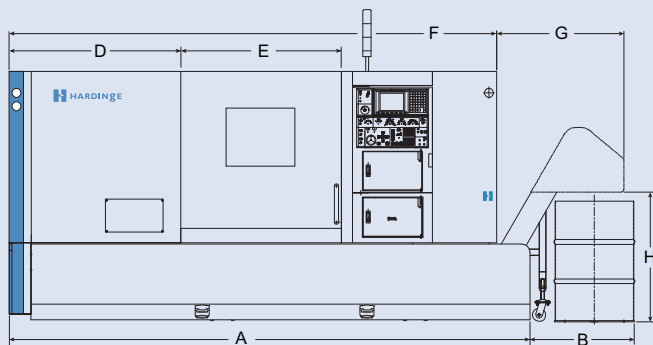
5—Original equipment only.

6—Dependent on type of live center used.

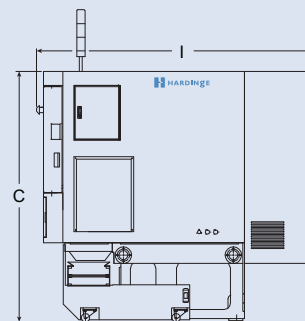
7—Balanced, 3-phase.

8—Maximum turning length with tailstock option.

GS 200/66, GS 250, GS 200/66 L and GS 250 L



GS 250 model shown



Note: Inch/Millimeter measurements shown

Dim.	GS 200/66 GS 250	GS 200/66 L GS 250 L
A	117.64/2988	149.29/3792
B	29.88/759	29.88/759
C	71.34/1812	71.77/1823
D	38.54/979	49.21/1250
E	34.72/882	45.98/1168
F	108.03/2744	139.69/3548
G	36.54/928	36.54/928
H	37.24/946	37.24/946
I	84.33/2142	84.33/2142



Over the past 10 years Hardinge steadily diversified both its product offerings and operations. Today, the company has grown into a globally diversified player with manufacturing operations in North America, Europe and Asia. In addition to designing and building turning centers and collet systems, Hardinge is a world leader in grinding solutions with the addition of the Kellenberger, Hauser, Tripet and Tschudin brands to the Hardinge family. The company also manufactures Bridgeport machining centers and other industrial products for a wide range of material cutting, turnkey automation and workholding needs.

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