GS SERIES

Performance 2-Axis CNC Lathe

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HARDINGE®

GS SERIES

Hardinge designed and built a complete range of GS series to suit various machining requirements.

GS 150 / GS 200

GS 150 A / GS 200 A

GS 200/66 GS250

GS 200/66 L GS250 L

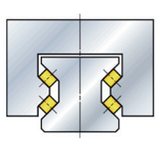
HIGHER EFFICIENCY

GS 250 SHOWN

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

- Fast spindle speed 6,00 rpm on GS 150, 5,000 on GS 200, 4,200 200/66 (L), 3,500 rpm on GS 250 (L).
- Rapid traverse rate max. rapid and jog 30m/min. on X & Z axes.
- Quick turret index time 0.09-second (rotation only) for GS 150, GS 200. 0.1-second (rotation only) for GS 200/66 (L), GS 250 (L) turret tool change time (station to station) of servo driven turret.

RIGID STRUCTURE

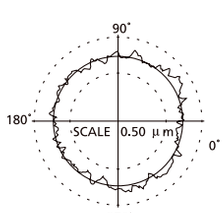


HEAVY-DUTY LINEAR GU ROLLER

Longer tool life and higher heavy cutting ability.

- Rigid and stable base strategically ribbed, 45-degree for GS 150, GS 200 and 30-degree for GS 200/66 (L), GS 250 (L), high quality one body casting iron base.
- FEA (Finite Element Analysis) techniques were used to design and build a rigid, structurally-balanced machine to assure optimum rigidity and life by Hardinge Engineering Team.
- C2 class ball screw, pre-tensioned, double nut hardened and ground for low noise and low thermal displacement.
- Heavy duty linear guideway and roller linear guide, 30% stiffness increased, longer machine life.

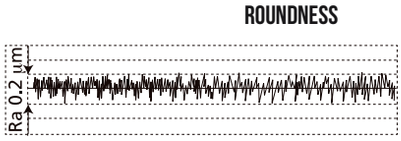
EXCELLENT AND STABLE ACCURACY



ROUNDNESS

Stable static and cutting accuracy

- Accurate full stroke positioning accuracy 0.01mm (ISO 230-2) on X and Z axes.
- Accurate full stroke repeatability accuracy 0.005mm (ISO 230-2) on X and Z axes.
- Actual machining results: Material: BsB / spindle rpm: 1250 rpm Roundness: 0.7µ Surface Finish: Ra 0.2µ



SURFACE FINISH

COMPACT EFFICIENCY

Smallest floor plan, largest working envelope.

- Compact Layout: machine layout with small floor plan, machine length 1998mm only for GS 150, GS 200. 2988mm for GS 200/66, GS 250. 3792mm for GS 200/66 (L), GS 250 (L.)
- Efficient Compact Utilization: Working envelope / machine floor plan reaches to 3.5%, higher than general average 2.94% only.

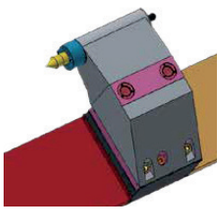
AUTOMATIC GANTRY EXCHANGER (OPTION)

- Easy transportation and installation: GS Series Automatic Gantry Part Exchanger offers a unique compact design that harmoniously couples with the Hardinge Lathe for easy installation and transportation.
- Fast Part Exchange Time: GS Series Automation compact design reduces the travel of the part. No need to open the front door saves further part exchange time. The time to exchange parts, including the auto-door action occurs, within 9 sec.
- Patented Unique Module Pallet: The module pallet is flexible to cater for different workpiece sizes. Slant design and auto center adjustment enlarges the workpiece capacity and saves space.

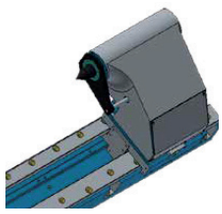
KEY FEATURES

RIGID TAILSTOCK (OPTION)

Fully programmable tailstock with MT#4 Morse Taper for GS 150, GS 200, MT #5 Morse Taper for GS 200/66 (L), GS 250 (L), front mounted, easy-view pressure gauge is easily adjusted through hinged access door. Fit variety of centers available.



GS 150, GS 200



GS 200/66 (L), GS 250 (L)

HIGH PRODUCTIVITY

Optional 2-speed spindle (electronic type), provides the biggest diameter part cutting on small CNC horizontal lathe.

SPINDLE WITH JAW CHUCK

SPINDLE WITH COLLET CHUCK (OPTION)

FANUC OITF CONTROLLER

8.4" color LCD / 1280 meter memory length / manual guide 0i / graphic display / dynamic stimulating / multi-point spindle orientation / rigid tapping

FANUC OITF

SIEMENS 828D (OPTION)

REDUCED NON-CUTTING TIME

- Both 30 m/min rapid traverse rate on X and Z axes, reduce non-cutting time.
- Servo driven turret (optional) equipped with 12-station top plate, fuzzy shortest distance tool index, three-piece clutch gear prevents possible chip and coolant penetrating for guaranteeing turret accuracy and life.
- Fast 0.08-second (rotation only) for GS 150, GS 200. 0.1-second (rotation only) for GS 200/66 (L), GS 250 (L) turret tool change time (station to station) of servo driven turret.

VERTICAL TOP PLATE

VDI TOP PLATE

- High turret repeatability accuracy improves cutting parts accuracy and surface finish.

ACTUAL MACHINING RESULTS

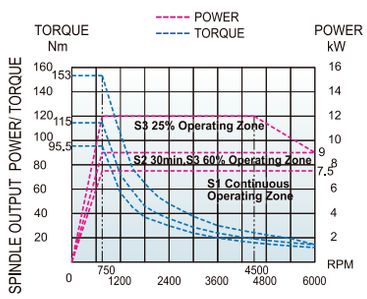
Model	GS 150	GS 200	GS 200/66 (L)	GS 250 (L)
Workpiece	Heavy Duty Cutting	Heavy Duty Cutting	Heavy Duty Cutting	Heavy Duty Cutting
Material	S45C	S45C	S45C	S45C
Line Speed	150 m/min	150 m/min	200 m/min	200 m/min
Cutting Depth	3.5 mm	4 mm	5 mm	6 mm
Feed Rate	0.45 mm/rv	0.45 mm/rv	0.4 mm/rv	0.4 mm/rv
Chip Removal Capacity	235 cc/min	270 cc/min	400 cc/min	480 cc/min

HIGH PRECISION AND HIGH STABILITY

Z Axis pre-load reduces temperature rises effectively during traveling. Direct drive with coupling maintained assembly accuracy and depress noise. Full stroke laser compensation on X and Z axes on every machine.

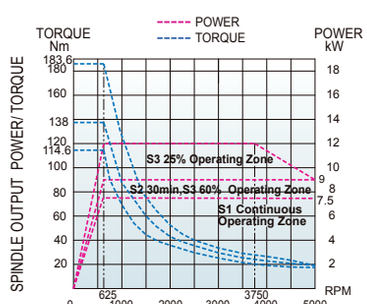
SPINDLE OUTPUT DIAGRAM

GS 150 6000 RPM



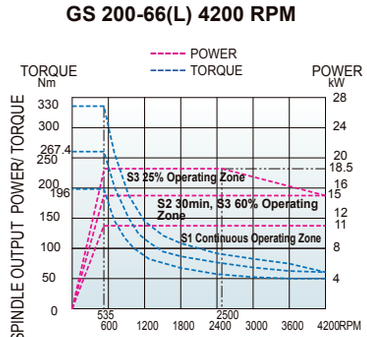
Fanuc αiIP15 / 6000 RPM Spindle Motor

GS 200 5000 RPM



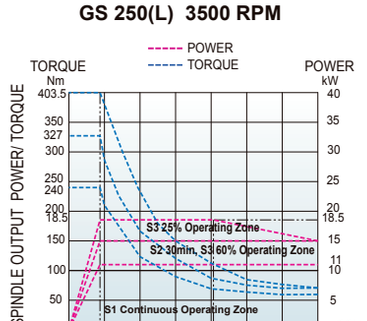
Fanuc αiIP15 / 6000 RPM Spindle Motor

GS 200-66(L) 4200 RPM



Fanuc αiIP22 / 6000 RPM Spindle Motor

GS 250(L) 3500 RPM

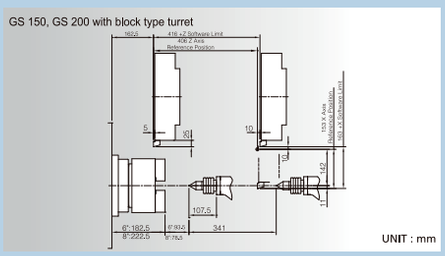


Fanuc αiIP22 / 6000 RPM Spindle Motor

GS SERIES

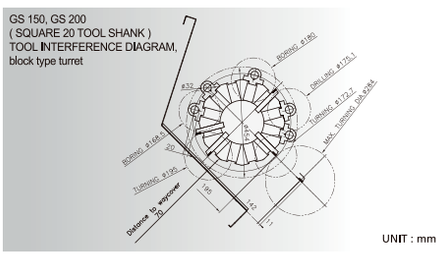
WORK ENVELOPE

GS 150, GS 200 with block type turret



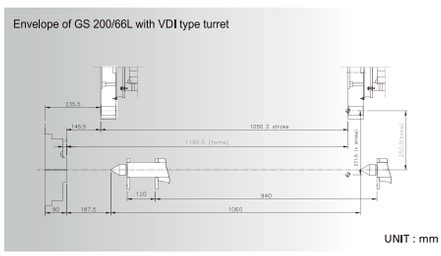
UNIT : mm

GS 150, GS 200
(SQUARE 20 TOOL SHANK)
TOOL INTERFERENCE DIAGRAM,
block type turret



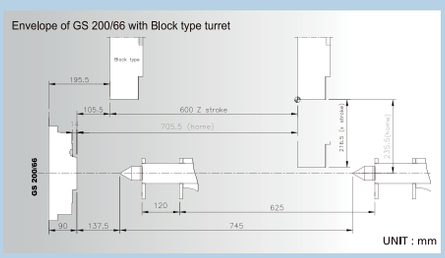
UNIT : mm

Envelope of GS 200/66L with VDI type turret



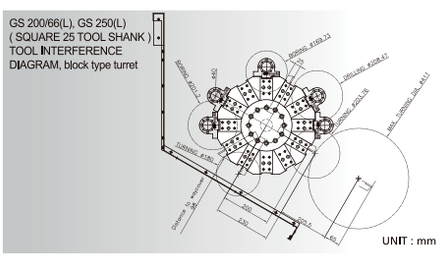
UNIT : mm

Envelope of GS 200/66 with Block type turret



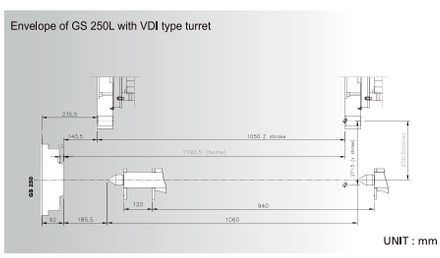
UNIT : mm

GS 200/66(L), GS 250(L)
(SQUARE 25 TOOL SHANK)
TOOL INTERFERENCE
DIAGRAM, block type turret



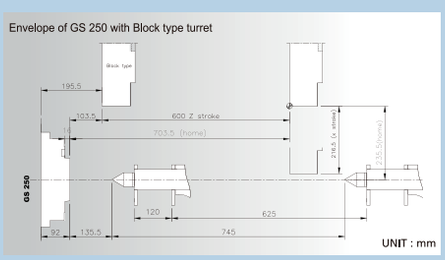
UNIT : mm

Envelope of GS 250L with VDI type turret



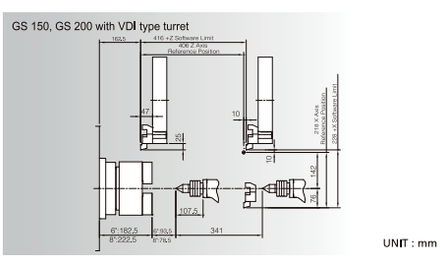
UNIT : mm

Envelope of GS 250 with Block type turret



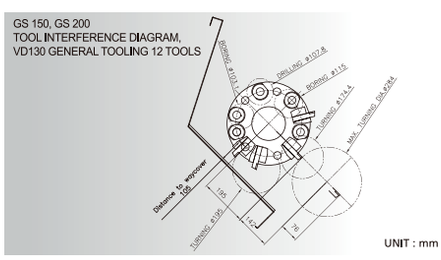
UNIT : mm

GS 150, GS 200 with VDI type turret



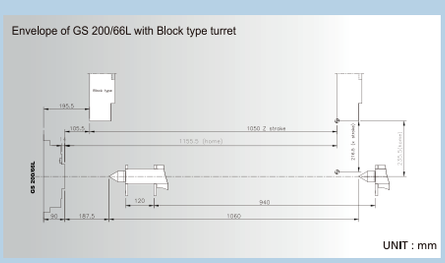
UNIT : mm

GS 150, GS 200
TOOL INTERFERENCE DIAGRAM,
VD130 GENERAL TOOLING 12 TOOLS



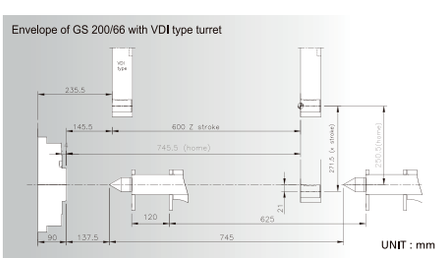
UNIT : mm

Envelope of GS 200/66L with Block type turret



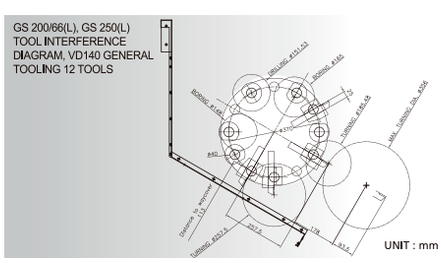
UNIT : mm

Envelope of GS 200/66 with VDI type turret



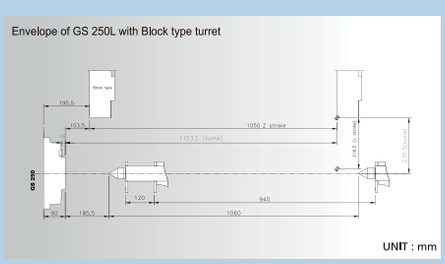
UNIT : mm

GS 200/66(L), GS 250(L)
TOOL INTERFERENCE
DIAGRAM, VD140 GENERAL
TOOLING 12 TOOLS



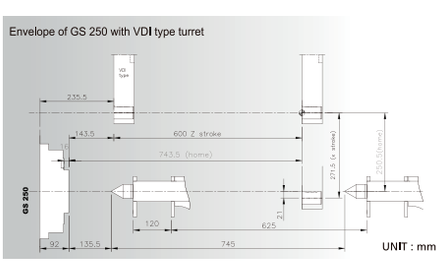
UNIT : mm

Envelope of GS 250L with Block type turret



UNIT : mm

Envelope of GS 250 with VDI type turret



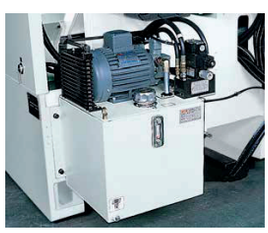
UNIT : mm

KEY FEATURES

ONE-PIECE BED AND BASE STRUCTURE

FEA-qualified structural components. Strategically ribbed, one body slant bed design, easy access and efficient chip removal, 45 degree for GS 150, GS 200 and 30-degree for GS 200/66 (L), GS 250 (L), high quality casting iron base integrated structure contributes to the overall stability, rigidity and durability of the machine. Special headstock design eliminates thermal displacement and assures continuous machining accuracy.

HYDRAULIC UNIT

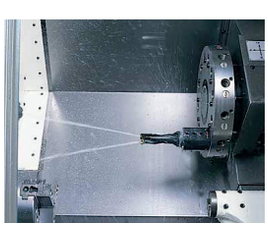


Direct-drive high efficiency vane pump for long life, low noise and low temperature raise. The heat exchange system is able to reduce the oil temperature efficiently.

HIGH PRECISION AND STIFFNESS SPINDLE

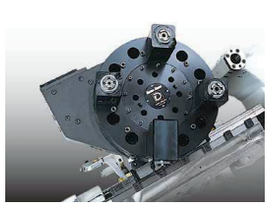
High performance spindle with powerful 4-bearing spindle design, two tapered roller bearings and two 40° angular contact bearings. Best spindle bearings design for both higher axial and radial stiffness and cutting accuracy.

COOLANT/AIR THROUGH TURRET (OPTION)



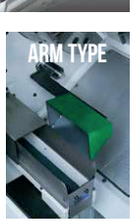
Suitable for better surface finishes on deep hole or workpiece material like stainless steel, coolant through turret with 20 bar high pressure, and air blast increase tool life and good chip removal.

HEAVY-DUTY ROLLER LINEAR GUIDEWAYS



X and Z axis roller linear guideways feature maximum static and dynamic stiffness, longer machine life as well as overall machining consistency.

LIVE TOOL & C-AXIS (OPTION)

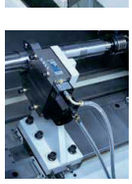


Servo-driven, live tooling function available on all 12-station VDI turret, powered tools for milling, drilling, tapping & boring.

PARTS CATCHER (OPTION)

Arm type and slide type parts catcher. The maximum part diameter 52 mm (GS 150, GS 200) or 76 mm (GS 200/66 (L), GS 250 (L)).

STEADY REST (OPTION FOR GS 200/66 L & GS 250 (L))



AUTOBLOK-SLU-M2 self centering work system; centering range from 8 - 101 mm with power centering and manual movement.

BAR FEEDER (OPTION)

The max. bar diameter 65 mm, max. length two types - 1250 and 3200 mm.

CHIP CONVEYOR (OPTION)

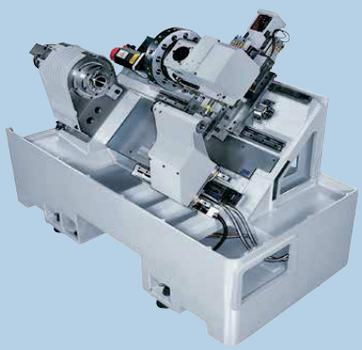
HINGE TYPE

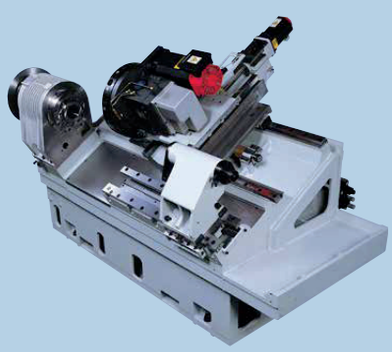
- Suitable for long chips or workpiece materials such as casting iron, steel and aluminum
- Not suitable for chips shorter than 5 mm.

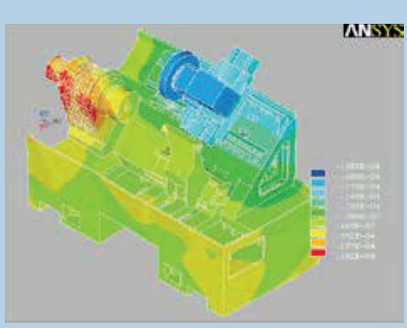
SCRAPER TYPE

- Suitable for fine or crushed chips of workpiece materials such as brass and casting iron.
- Not suitable for chips longer than 5 mm.

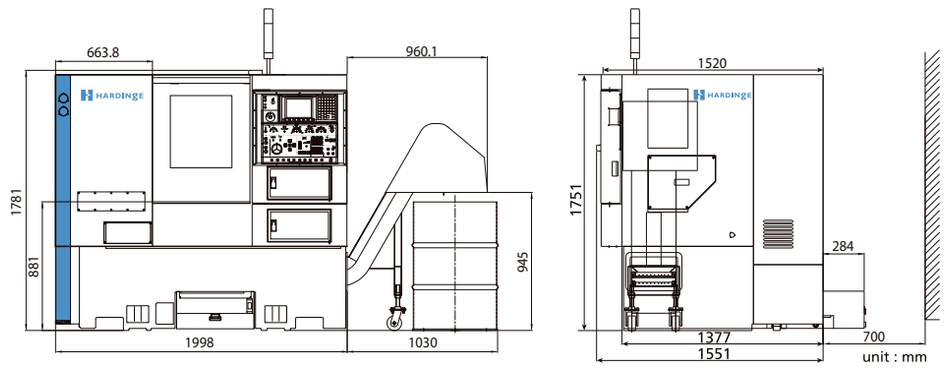
HEAVY-DUTY STRUCTURE AND STABLE ACCURACY







DIMENSIONAL DRAWINGS GS 150 / GS 200



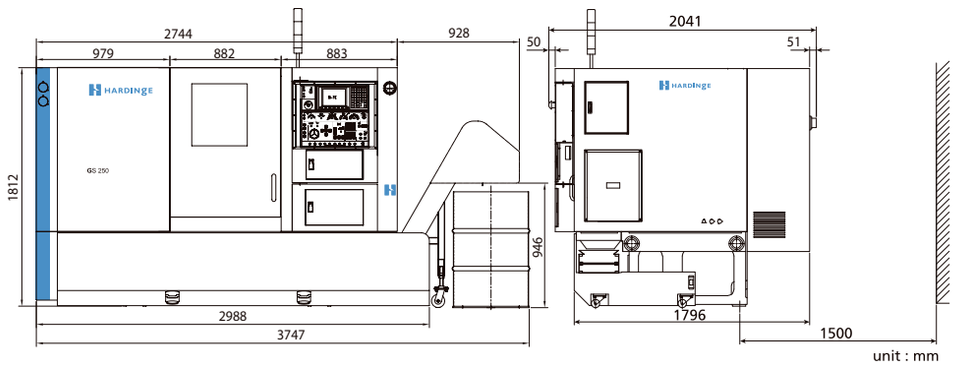
Machine Configuration		GS 150	GS 200	
Spindle	Spindle Nose	A2-5	A2-6	
	Spindle Bore Thru Dia.	56	62	mm
	Chuck Size of 3 Jaw Dia.	6 in / Ø169	8 in / Ø210	mm
	Spindle Center Height to Floor	1000	1000	mm
	Spindle Center Dis. to Front Door	280	280	mm
	Draw Bar Clamping	Hydraulic	Hydraulic	
FANUC Drive System	Spinde Motor Rating (S3 25%)	12	12	kW
	Max Spindle Speed	6000	5000	rpm
	Spindle Torque Rating (S3 25%)	153	183	N-m
Machining Capacity	Swing Over Way Covers (Dia.)	457	457	mm
	Max Turning Length	406	406	mm
	Max Machining Dia.	284	284	mm
	Through Draw Tube Bore Dia.	Ø45	Ø52	mm
X, Z Axis Travel	X Axis Travel (VDI)	218	218	mm
	Z Axis Travel	406	406	mm
	X and Z Axis Rapid Traverse Rate	30	30	m/min
	X Axis Servo Motor	1.6	1.6	kW
	Z Axis Servo Motor	1.6	1.6	kW
Turret / Top Plate	Drive of Turret	Hydraulic Motor	Hydraulic Motor	
	Number of Stations (Standard)	12	12	
	Square Shank Size	20	20	mm
	Round Shank Size Dia.	32	32	mm
	Index Time (Station to Station)	.35 (Servo Motor 0.09)	.35 (Servo Motor 0.09)	sec
Coolant	Coolant Tank Capacity	156	156	liter
	Coolant Pressure	2.8	2.8	bar
Machine Size / Weight	Machine Dimension (L x W x H)	1998 x 1551 x 1781	1998 x 1551 x 1781	mm
	Machine Weight	2700	2800	
	Machine Floor Plan	3.3	3.3	m^2
Siemens 828D Control System	Spindle Motor Rating (S6 40%)	13	12	kW
	Max Spindle Speed	6000	5000	rpm
	Spindle Torque Rating (S6 40%)	104	125	N-m
Accuracy ISO 230-2				
Accuracy	X, Z Axis Positioning	0.01 / Full Stroke	0.01 / Full Stoke	mm
	X, Z Axis Repeatability	0.005	0.005	mm
Options		GS 150 A	GS 200 A	
Automation	Max. Turning Length	100	100	mm
	Max. Madining Dia.	120	120	mm
	Machine Dimension (L xW x H)	1038 x 1356 x 2286	3058 x 1356 x 2286	mm

Options				
Collet Adaption Chuck	A2-5	A2-6	Through Hole Dia. 42	mm
2-Speed Range Spindle	Fanuc 0iTF			
Fully Programmable Tail Stock	Morse Taper Center		MT#4	
	Tail Stock Travel		341	mm
	Max. Part Length		341	mm
	Min. Part Length		17.3	mm
	Rapid Traverse Rate		5.5	m/min
Parts Catcher				
Slide Type	Max. Part Diameter		Ø52	mm
	Max. Part Length		110	mm
Arm Type	Max. Part Diameter		Ø52	mm
	Max. Part Length		150	mm
Part Conveyor				
Chip Conveyor	Hinge Type (for long rolled chips)			
	Scraper Type (for fine or crushed chips)			
Tool Probe Setter	Automatic Type			
Part Probe				
Oil Mist Collector			1/2	hp
Bar Feeder		Bar Length	1250	mm
		Bar Length	3200	mm
High Pressure Coolant Thru. Turret	Coolant Pressure		20	bar
Live Center				
Stack Light	Red-Yellow-Green Color			
Auto Door				
Live Tooling and C Axis	12 Stations Live Tooling Available			
Optical Scale X, Z Axis				
Accuracy ISO 230-2				
Color LCD			8.4	in
3 Jaw Chuck / One Set of Soft Jaw				
Bar Feeder Interface				
Coolant Through Turret			2.8	bar
Work Lighting				
Foot Switch				
Tool Bag				

* 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,

DIMENSIONAL DRAWINGS GS 200/66 / GS 250



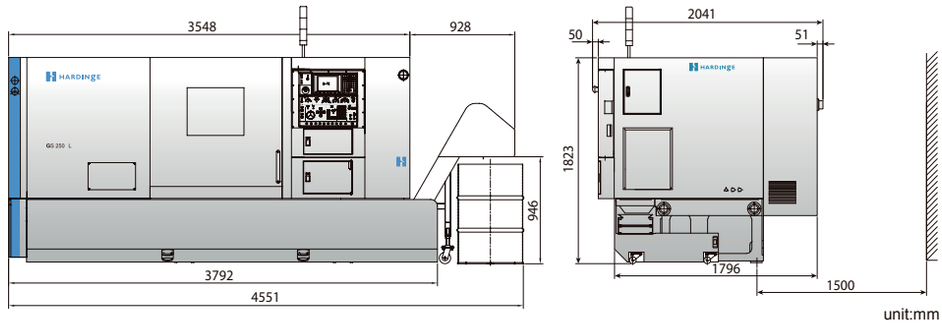
Machine Configuration		GS 200/66	GS 250	
Spindle	Spindle Nose	A2-6	A2-8	
	Spindle Bore Thru Dia.	76	89	mm
	Chuck Size of 3 Jaw Dia.	8 in / Ø210	10 in / Ø254	mm
	Spindle Center Height to Floor	1041	1041	mm
	Spindle Center Dis. to Front Door	431	431	mm
	Draw Bar Clamping	Hydraulic	Hydraulic	
FANUC Drive System	Spindle Motor Rating (S3 25%)	18.5	18.5	kW
	Max Spindle Speed	4200	3500	rpm
	Spindle Torque Rating (S3 25%)	330	403.5	N-m
Machining Capacity	Swing Over Way Covers (Dia.)	595	595	mm
	Max Turning Length	600	600	mm
	Max Machining Dia.	356	356	mm
	Through Draw Tube Bore Dia.	Ø66	Ø78	mm
X, Z Axis Travel	X Axis Travel (VDI)	271.5	271.5	mm
	Z Axis Travel	600	600	mm
	X and Z Axis Rapid Traverse Rate	30	30	m/min
	X Axis Servo Motor	1.6	1.6	kW
	Z Axis Servo Motor	3	3	kW
Turret / Top Plate	Drive of Turret	Hydraulic Motor	Hydraulic Motor	
	Number of Stations (Standard)	12	12	
	Square Shank Size	25	25	mm
	Round Shank Size Dia.	40	40	mm
	Index Time (Station to Station)	.35 (Servo Motor 0.09)	.35 (Servo Motor 0.09)	sec
Coolant	Coolant Tank Capacity	319	319	liter
	Coolant Pressure	2.8	2.8	bar
Machine Size / Weight	Machine Dimension (L x W x H)	2988 x 2041 x 1812	2988 x 2041 x 1812	mm
	Machine Weight	4950	5000	
	Machine Floor Plan	5.1	5.1	m^2
Siemens 828D Control System	Spindle Motor Rating (S6 40%)	18	18	kW
	Max Spindle Speed	4200	3500	rpm
	Spindle Torque Rating (S6 40%)	343	343	N-m
Accuracy ISO 230-2				
Accuracy	X, Z Axis Positioning	0.01 / Full Stroke	0.01 / Full Stoke	mm
	X, Z Axis Repeatability	0.005	0.005	mm
Options		GS 150 A	GS 200 A	
Automation	Max. Turning Length	100	100	mm
	Max. Madining Dia.	120	120	mm
	Machine Dimension (L xW x H)	1038 x 1356 x 2286	3058 x 1356 x 2286	mm

Options					
Collet Adaption Chuck	A2-6	A2-8	Through Hole Dia. 60		mm
2-Speed Range Spindle	Fanuc 0iTF				
Fully Programmable Tail Stock	Morse Taper Center		MT#5		
	Tail Stock Travel		625		mm
	Max. Part Length		578	545	mm
	Min. Part Length		20	0	mm
	Rapid Traverse Rate		5.5		m/min
Parts Catcher	Catching Method		Arm Type		
Arm Type	Max. Part Diameter		Ø76		mm
	Max. Part Length		160		mm
Part Conveyor					
Chip Conveyor	Hinge Type (for long rolled chips)				
	Scraper Type (for fine or crushed chips)				
Tool Probe Setter	Automatic Type				
Part Probe					
Oil Mist Collector			1		hp
Bar Feeder		Bar Length	1250		mm
		Bar Length	3200		mm
High Pressure Coolant Thru. Turret	Coolant Pressure		20		bar
Live Center					
Stack Light	Red-Yellow-Green Color				
Auto Door					
Live Tooling and C Axis	12 Stations Live Tooling Available				
Standard Accessories					
Color LCD			8.4		in
3 Jaw Chuck / One Set of Soft Jaw					
Bar Feeder Interface					
Coolant Through Turret			2.8		bar
Work Lighting					
Foot Switch					
Tool Bag					

* 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,

DIMENSIONAL DRAWINGS GS 200/66 L / GS 250 L



Machine Configuration		GS 200/66 L	GS 250 L	
Spindle	Spindle Nose	A2-6	A2-8	
	Spindle Bore Thru Dia.	76	89	mm
	Chuck Size of 3 Jaw Dia.	8 in / Ø210	10 in. / Ø254	mm
	Spindle Center Height to Floor	1041	1041	mm
	Spindle Center Dis. to Front Door	431	431	mm
	Draw Bar Clamping	Hydraulic	Hydraulic	
FANUC Drive System	Spinde Motor Rating (S3 25%)	18.5	18.5	kW
	Max Spindle Speed	4200	3500	rpm
	Spindle Torque Rating (S3 25%)	330	403.5	N-m
Machining Capacity	Swing Over Way Covers (Dia.)	595	595	mm
	Max Turning Length	1050	1050	mm
	Max Machining Dia.	356	356	mm
	Through Draw Tube Bore Dia.	Ø66	Ø78	mm
X, Z Axis Travel	X Axis Travel (VDI)	271.5	271.5	mm
	Z Axis Travel	1050	1050	mm
	X and Z Axis Rapid Traverse Rate	30	30	m/min
	X Axis Servo Motor	1.6	1.6	kW
	Z Axis Servo Motor	3	3	kW
Turret / Top Plate	Drive of Turret	Hydraulic Motor	Hydraulic Motor	
	Number of Stations (Standard)	12	12	
	Square Shank Size	25	25	mm
	Round Shank Size Dia.	40	40	mm
	Index Time (Station to Station)	.35 (Servo Motor 0.09)	.35 (Servo Motor 0.09)	sec
Coolant	Coolant Tank Capacity	379	379	liter
	Coolant Pressure	2.8	2.8	bar
Machine Size / Weight	Machine Dimension (L x W x H)	3792 x 2041 x 1823	3792 x 2041 x 1823	mm
	Machine Weight	5550	5600	
	Machine Floor Plan	8.5	8.5	m^2
Siemens 828D Control System	Spindle Motor Rating (S6 40%)	18	18	kW
	Max Spindle Speed	4200	3500	rpm
	Spindle Torque Rating (S6 40%)	343	343	N-m
Accuracy ISO 230-2				
Accuracy	X, Z Axis Positioning	0.01 / Full Stroke	0.01 / Full Stroke	mm
	X, Z Axis Repeatability	0.005	0.005	mm

Options					
Collet Adaption Chuck	A2-6	A2-8	Through Hole Dia. 60		mm
2-Speed Range Spindle	Fanuc 0iTF				
Fully Programmable Tail Stock	Morse Taper Center		MT#5		
	Tail Stock Travel		940		mm
	Max. Part Length		1012.5	995	mm
	Min. Part Length		20	20	mm
	Rapid Traverse Rate		5.5		m/min
Parts Catcher	Catching Method		Arm Type		
Arm Type	Max. Part Diameter		Ø76		mm
	Max. Part Length		160		mm
Part Conveyor					
Chip Conveyor	Hinge Type (for long rolled chips)				
	Scraper Type (for fine or crushed chips)				
Tool Probe Setter	Automatic Type				
Part Probe					
Oil Mist Collector			1		hp
Bar Feeder		Bar Length	1250		mm
		Bar Length	3200		mm
High Pressure Coolant Thru. Turret	Coolant Pressure		20		bar
Live Center					
Stack Light	Red-Yellow-Green Color				
Auto Door					
Live Tooling and C Axis	12 Stations Live Tooling Available				
Standard Accessories					
Color LCD			8.4		in
3 Jaw Chuck / One Set of Soft Jaw					
Bar Feeder Interface					
Coolant Through Turret			2.8		bar
Work Lighting					
Foot Switch					
Tool Bag					

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