

Nidec
All for dreams

GEAR HOBBIING MACHINE

G SERIES



NIDEC MACHINE TOOL CORPORATION

www.nidec.com/en/nidec-machinetool/

Full Lineup to Meet Your Needs

Cutting-edge "G-series" of gear hobbing machines

– based on our extensive history in gear cutting machine manufacturing and world-class technologies

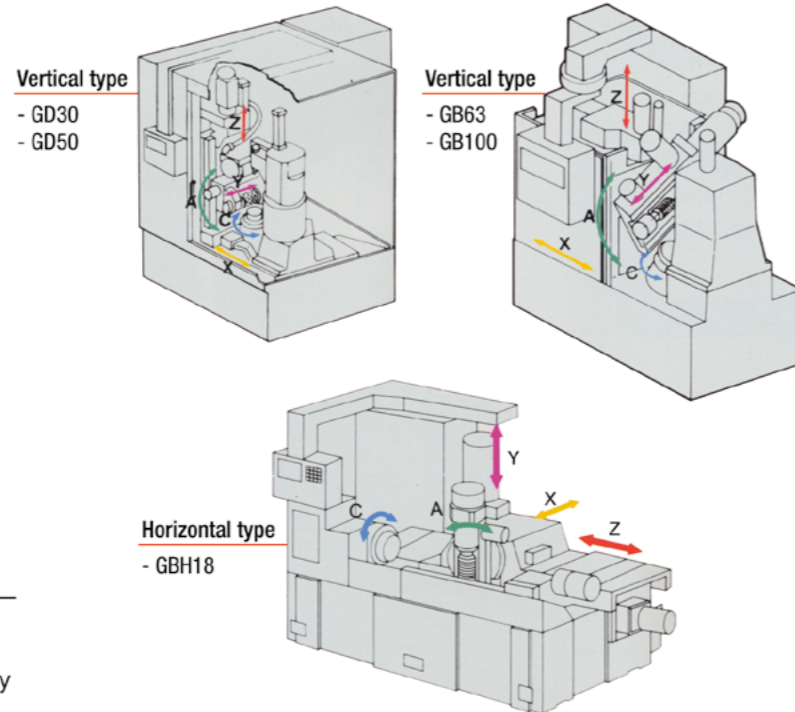
Since we developed our first hobbing machines in 1960, we have made full use of cutting-edge technologies while anticipating the needs of customers to offer sophisticated machine tool solutions that continuously meet user requirements.

Utilizing advanced machine mechanisms and its unique control technologies, the company has improved the efficiency and accuracy of gear machining in all industries from automotive to construction. Moreover, it is also actively working to enhance factory automation systems in order to realize flexible production of a wide variety of products as well as to achieve even higher efficiency. The company is pursuing user-friendly gear hobbing machines that satisfy the needs of today.

Five controlled axes (standard)

The number of controlled axes has been standardized at five axes to accommodate a wide variety of gears.

Controlled axes	
X	Radial feed
Z	Axial feed
C	Table rotation
Y	Hob shift
A	Hob head swivel



Main features

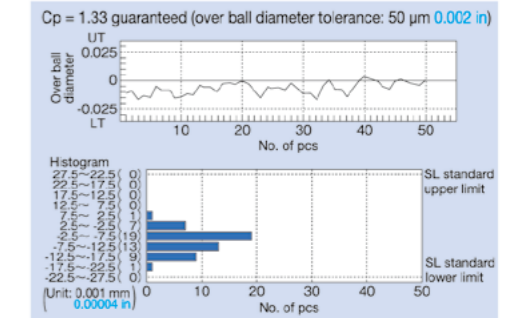
- Wide lineup
- Excellent high-accuracy machining and stable quality
- Pursuing high-efficiency machining
- Simplified programming to lighten burden on operator
- Wide range of peripheral FA equipment

Feature [1] High Accuracy

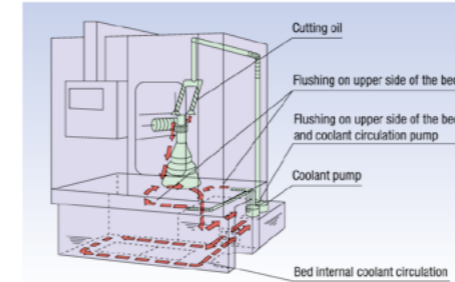
Excellent High-Accuracy Machining and Stable Quality

Based on the highly rigid and high-accuracy mechanical structures, including table, sliding surface and feed spindle, each machine model pursues even more accurate cutting from every possible aspect such as improvement of positioning accuracy and reduction of thermal displacement. The G-series meets JIS Class 3 for high-accuracy gears and JIS Class 5 (JIS B1702 (1998)) for mass-produced gears. With guaranteed repetitive machining accuracy of $C_p = 1.33$ against an over ball diameter tolerance of $50 \mu\text{m}$ **0.002 in**, the machine meets high-accuracy machining needs.

● Example of repetitive machining accuracy (over ball diameter)



● Bed coolant circulation diagram



Extensive thermal displacement countermeasures maintain stable machining quality

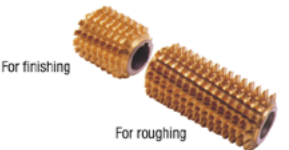
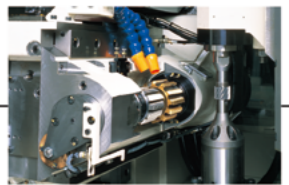
When cutting oil becomes heated during the machining process and splashes over the top surface of the machining bed, the workpiece may undergo dimensional variations due to mechanical thermal displacement. To prevent this, coolant is circulated within the bed to maintain uniform thermal distribution, minimizing thermal displacement.

Feature [2] High Efficiency

Equipped with long hob head

The use of a super long hob and a combination hob enable extended machining time, continuous roughing/finishing and multi-item, multi-stage gear cutting. Changeover time has been substantially reduced to achieve high-efficiency machining.

- Length of installed hob: 230 mm **9.1 in** (GD30/GD50)



Feature [3] Easy Operation

Simplified Programming Lighten Burden on Operator

The fully conversational programming software with its reputation for easy operation has been further improved. In addition to the fully conversational system, a large LCD is used to change the display layout. Now the user has instant visual access to various information data on the LCD. The help function has also been modified for ease of operation: the user can quickly access appropriate help information in a balloon for each entry box.

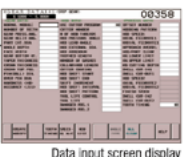
Operator-friendly control panel display

The control panel features larger characters on the display screen for easier reading and creates a more operator-friendly interface.



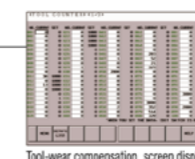
The fully conversational programming now even easier to use

With the fully conversational programming system, the machining conditions and programming are automatically determined by just inputting gear and tool specification data as instructed on the display screen.



Flexible tool wear compensation

Adjusting the tool wear compensation value for the hob cutter outside diameter will substantially reduce changeover time after tool set-up.



Easy-to-understand alarm messages

In case of an alarm shutdown, the screen displays easy-to-understand guidance so that the operator can smoothly carry out recovery procedures.



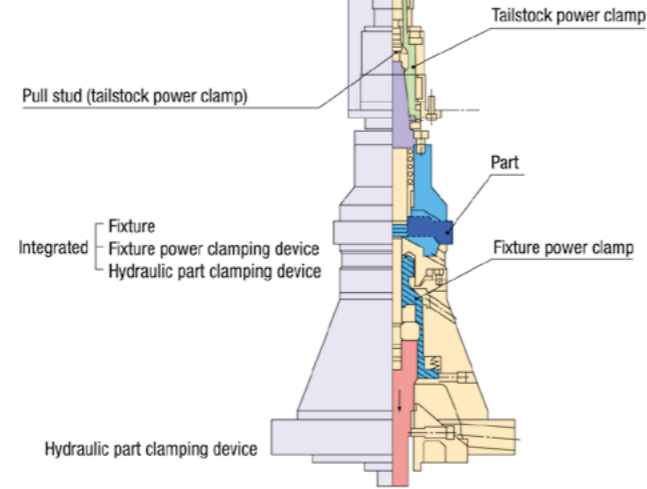
Main optional equipment

Hydraulic part clamping device & fixture power clamping

- The hydraulic part clamping device uses hydraulic power to secure the part, and the clamping force can be changed by adjusting the hydraulic valve.
- Fixture power clamping can clamp or unclamp fixtures at the touch of a single button, making it ideal for frequent changeovers.



Part clamp & fixture power clamp



● Lower puller-type fixture
Automated fixture for perforated parts



● Mist collector
Equipment to recover oil mist produced during cutting



● Adjustable grip for part loader
This grip can be quickly adjusted to accommodate parts of different diameters.



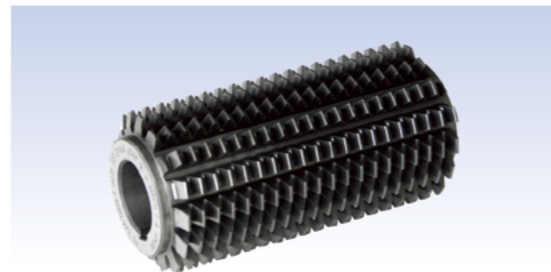
● Auto-loader, part stacker
The combined use of the part stacker and transfer arm allows quick changeover of parts and is ideally suited for volume production.

Hob Cutters

We offer different types of hob cutters suitable for your application.



● Shank hob



● SuperDry III hob

Specifications

Medium Gear Hobbing Machine

GD30/GD50

Machine Specifications

Item	Model	GD30	GD50
Max. workpiece diameter	mm in	φ300 φ11.8	φ500 φ19.4
Max. module Diametral pitch		8 3.18	
Max. axial travel	mm in	300 [200~500]	11.8 [7.9~19.7]
Max. radial travel	mm in	300 [40~340]	11.8 [1.6~13.4]
Max. hob diameter x length	mm in	φ150×230 φ5.9×9.1	
Max. hob shift	mm in	180 7.1	
Hob speed	Standard	min ⁻¹ 75~750	
	Option	min ⁻¹ 120~1,200	
Hob head swivel range (lateral)		±45°	
No. of teeth (No. of gear teeth/No. of hob starts)		5~1,000	
Axial	Feedrate	mm/min ipm	1~1,000 0.04~39.4
	Rapid traverse	mm/min ipm	10,000 393.7
Radial	Feedrate	mm/min ipm	1~1,000 0.04~39.4
	Rapid traverse	mm/min ipm	10,000 393.7
Hob shift rapid traverse	mm/min ipm	5,000 196.9	
Max. table speed	min ⁻¹	60	50
Main motor output (continuous rating)	kW HP	15 20	
Total power consumption	kVA	33	
Floor space (width x depth)	mm in	2,920×3,245	115.0×127.8
Machine weight	kg lb	10,000 22,000	10,500 23,100



Machine shown in photo with optional equipment

Standard Equipment

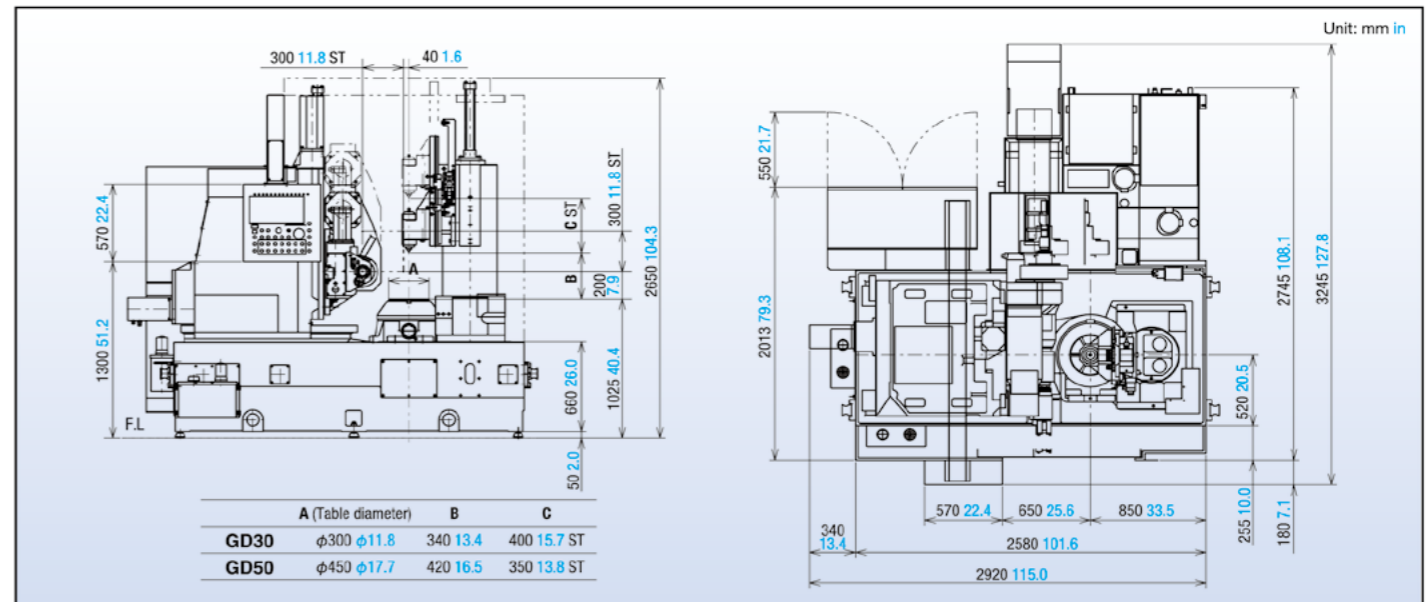
- Coolant supply unit
- Hydraulic and lubrication unit
- Automatic hob head swivel with clamp
- Hob arbor clamping device
- Door interlock for safety
- Automatic hob shift function
- Hob arbor with dual-tapered ends (1 set)
- Splash guard (side-open, manual)
- Two-hand operation button
- Workpiece counter (8 digits)
- Lighting outlet (100V, 1A)
- Radial cutting position setting
- Axial cutting position setting
- Prescribed position adjustment
- Cutting conditions memory function
- Hob shift position memory function
- Conversational programming software (automatic setting of cutting conditions)
- Programming conversation editor
- Hob axis continuous variable transmission (AC spindle motor)
- RS232C interface
- Maintenance tool kit

Optional equipment

- Part fixture
- Fixture power clamping
- Additional hob arbor

- Hydraulic part clamping device
- Hob arbor set up device
- Tailstock power clamp
- Rough locator, workpiece rest
- Rough deburring device (fixed/mobile)
- Various automatic loaders
- Transfer unit, stocker
- Automatic coolant guard door
- Programmable support center
- Fixture cleaning device
- Auxiliary operation panel
- Automatic power shut-off
- Machine status indicator lamp
- Power failure countermeasures
- Additional memory
- High counter column
- Various programming software
- Chip conveyor
- Circuit breaker with ground fault circuit interrupter
- Two-hand starter
- Spindle load indicator (with indicator relay)
- Mist collector
- Tight cover
- Work lighting / Control box internal lighting
- General specifications for G-series
- Specific specifications for GD30/GD50

Dimensions



GB63/GB100

Machine Specifications

Item	Model	GB63	GB100
Max. workpiece diameter	mm in	φ630 φ24.8	φ1000 φ39.4
Max. module Diametral pitch		14 1.81	
Max. axial travel	mm in	500 [200~700]	19.7 [7.9~27.6]
Max. radial travel	mm in	575 [50~625]	22.6 [1.9~24.6]
Max. hob diameter x length	mm in	φ210×240 φ8.3×9.4	
Max. hob shift	mm in	200 7.9	
Hob speed	Standard	min ⁻¹	30~225
	Option	min ⁻¹	40~400
Hob head swivel range (lateral)		±45°	
No. of teeth (No. of gear teeth/No. of hob starts)		6~1,000	
Axial	Feedrate	mm/min ipm	0.1~300 0.004~11.8
	Rapid traverse	mm/min ipm	1,250 49.2
Radial	Feedrate	mm/min ipm	0.1~300 0.004~11.8
	Rapid traverse	mm/min ipm	3,000 118.1
Hob shift rapid traverse	mm/min ipm	1,250 49.2	
Max. table speed	min ⁻¹	10	
Main motor output (continuous rating)	kW HP	15 20	
Total power consumption	kVA	33	
Floor space (width x depth)	mm in	4,400×3,252 173.2×128.0	
Machine weight	kg lb	16,000 35,300	18,000 39,700



Machine shown in photo with optional equipment

Standard Equipment

- Coolant supply unit
- Hydraulic and lubrication unit
- Automatic hob head swivel with clamp
- Door interlock for safety
- Automatic hob shift function
- Hob arbor with dual-tapered ends (1 set)
- Splash guard (side-open, manual)
- Two-hand operation button
- Workpiece counter (8 digits)
- Lighting outlet (100V, 1A)
- Radial cutting position setting
- Axial cutting position setting
- Prescribed position adjustment
- Cutting conditions memory function

- Hob shift position memory function
- Conversational programming software (automatic setting of cutting conditions)
- Programming conversation editor
- Hob axis continuous variable transmission (AC spindle motor)
- RS232C interface
- Machine status indicator lamp
- Maintenance tool kit

Optional equipment

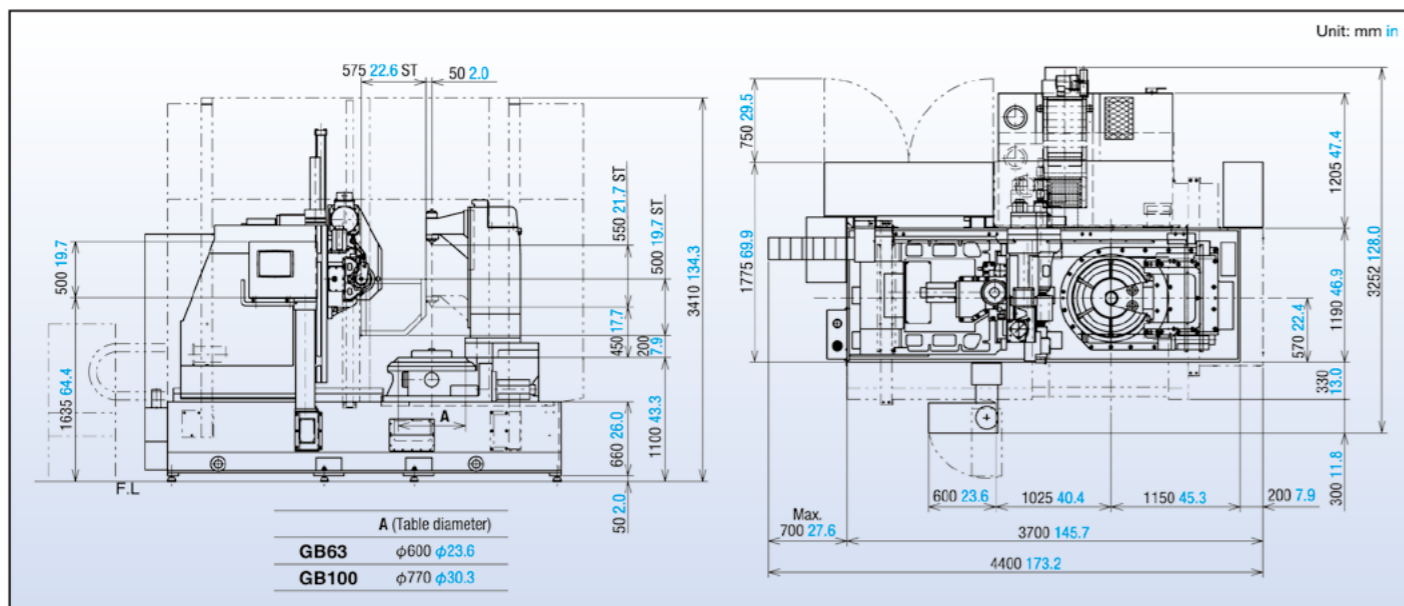
- Part fixture
- Fixture power clamping
- Additional hob arbor

- Hydraulic part clamping device
- Hob arbor set up device
- Tailstock power clamp
- Hob arbor clamping device
- Rough locator, workpiece rest
- Rough deburring device (fixed/mobile)
- Various automatic loaders*
- Transfer unit, stocker*
- Automatic coolant guard door
- Programmable support center
- Fixture cleaning device
- Internal tooth thickness gauge
- Auxiliary operation panel
- Automatic power shut-off
- Additional memory

- High counter column
- Various programming software
- Chip conveyor
- Circuit breaker with ground fault circuit interrupter
- Two-hand starter
- Spindle load indicator (with indicator relay)
- Mist collector
- Tight cover
- Work lighting / Control box internal lighting

- * For GB63 only
- General specifications for G-series
- Specific specifications for GB63/GB100

Dimensions



GBH18

Machine Specifications

Item	Model	GBH18	
Max. workpiece diameter	mm in	φ180 φ7.1	
Max. module Diametral pitch		6 4.23	
Max. axial travel	mm in	700 [135~835] 27.6 [5.3~32.9]	
Max. radial travel	mm in	125 [30~155] 4.9 [1.2~6.1]	
Max. hob diameter x length	mm in	φ120×200 φ4.7×7.9	
Max. hob shift	mm in	160 6.3	
Hob speed	Standard	min ⁻¹	150~1,000
	Option	min ⁻¹	—
Hob head swivel range (lateral)		±45	
No. of teeth (No. of gear teeth/No. of hob starts)		4~200	
Axial	Feedrate	mm/min ipm	1~400 0.04~15.7
	Rapid traverse	mm/min ipm	5,000 196.9
Radial	Feedrate	mm/min ipm	1~300 0.04~11.8
	Rapid traverse	mm/min ipm	5,000 196.9
Hob shift rapid traverse	mm/min ipm	3,000 118.1	
Max. table speed	min ⁻¹	150	
Main motor output (continuous rating)	kW HP	5.5 8	
Total power consumption	kVA	20	
Floor space (width x depth)	mm in	3,380×2,490 133.1×98.0	
Machine weight	kg lb	7,000 15,500	



Machine shown in photo with optional equipment

Standard Equipment

- Coolant supply unit
- Hydraulic and lubrication unit
- Automatic hob head swivel with clamp
- Door interlock for safety
- Automatic hob shift function
- Hob arbor with dual-tapered ends (1 set)
- Splash guard (side-open, manual)
- Two-hand operation button
- Workpiece counter (8 digits)
- Lighting outlet (100V, 1A)
- Radial cutting position setting
- Axial cutting position setting
- Prescribed position adjustment
- Cutting conditions memory function

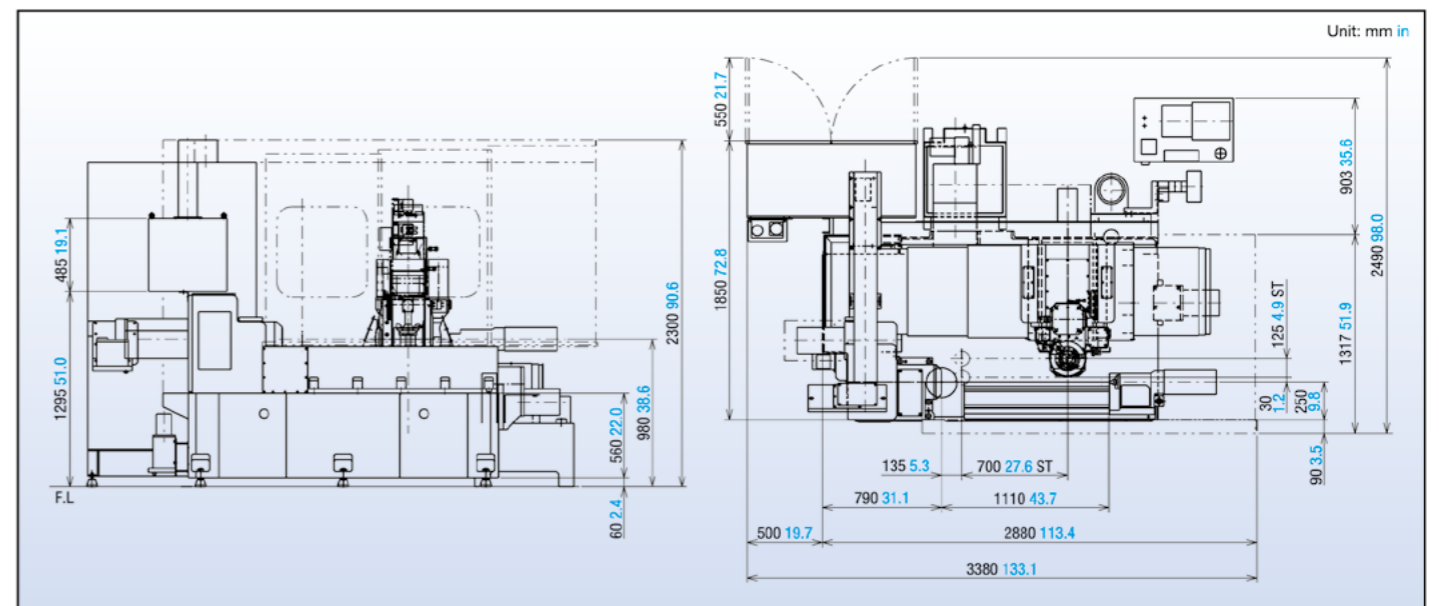
- Hob shift position memory function
- Conversational programming software (automatic setting of cutting conditions)
- Programming conversation editor
- Hob axis continuous variable transmission (AC spindle motor)
- Maintenance tool kit

Optional equipment

- Part fixture
- Fixture power clamping
- Additional hob arbor
- Hydraulic part clamping device

- Hob arbor set up device
- Tailstock power clamp
- Hob arbor clamping device
- Rough locator, workpiece rest
- Rough deburring device (fixed/mobile)
- Various automatic loaders
- Transfer unit, stocker
- Automatic coolant guard door
- Programmable support center
- Fixture cleaning device
- Auxiliary operation panel
- Automatic power shut-off
- Machine status indicator lamp
- Power failure countermeasures
- Additional memory
- Various programming software
- Chip conveyor
- Circuit breaker with ground fault circuit interrupter
- Two-hand starter
- Spindle load indicator (with indicator relay)
- Mist collector
- Tight cover
- Work lighting / Control box internal lighting
- RS232C interface
- Center distance extension spec. (for long workpiece)
- General specifications for G-series
- Specific specifications for GBH18

Dimensions





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Machine specifications such as dimensions etc., are fixed using SI units including the metric system.
In case data are shown in other units in blue, such as inches, pounds and gallons etc. they are for reference only and the formal data
in black supersedes any equivalent data given in blue when fractions caused by conversion become an issue.
Specifications are subject to change without prior notice.
The export of this product is subject to Japanese Governmental approval.