



TAKUMI

G Series



High Speed Bridge-Type Graphite Machining Center (Dry Type)

G600
G700
G1000

G Series

The Takumi G Series, high-speed graphite milling machine provides an optimal solution for graphite machining. The unique design provides clean and dry machining for high accuracy, surface quality and dynamic processing thanks to the optimal mechanical structure, high response axial transmission system, low vibration and excellent thermal controlled spindle.

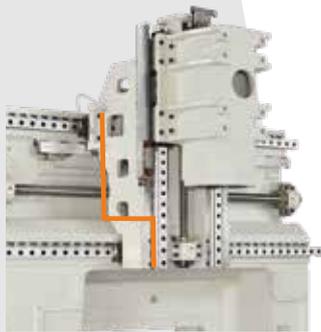


01

G Series Basic Structure

Double column structure

The one-piece design provides increased weight to absorb cutting vibration, and increased rigidity. The dual contact areas with the base eliminates pitch in the Y-axis and reduces the effect of machine leveling changes over time.



Outstanding ladder structure on the beam

The bridge utilizes a "ladder design" head casting and saddle which increases rigidity, reduces overhang and eliminates head deflection. The Y-axis cross rail saddle carries a constant weight, allowing for faster cutting while maintaining excellent part finish.

Highly efficient suction device

Clean working environment is guaranteed. With a strong vacuum dependably removes graphite dust. The maximum air volume of vacuum system can reach 95CMM. Thanks to six filter elements, the filtration degree can reach 0.5 μ .



Protective device

Linear guideways and ballscrews with the high graded dusts-proof design which offers optimal protection against graphite dusts and extends the life of linear guideways and ballscrews.



High speed built-in spindle

The high-power built-in spindle limits vibration, noise and power loss during high speeds to achieve superior part finish. The helical cooling channel design minimizes thermal distortion and enables precision over extended cycle times.

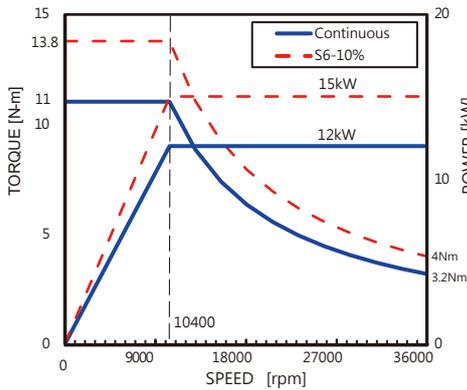
High-efficient vacuum system (G600):

The vacuum system is designed on the table with 2 6-inch collection hoses to extract the graphite dusts without tool interference.

High-efficient vacuum system (G700/G1000):

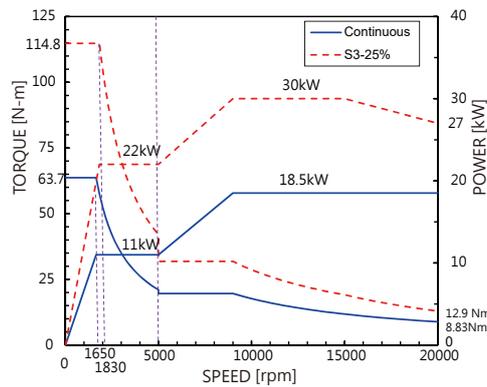
High-efficient dust suction rate at 83%, thanks to the minimal distance of dusts suction nozzle to the tool tip.

Spindle Power - Torque Curve



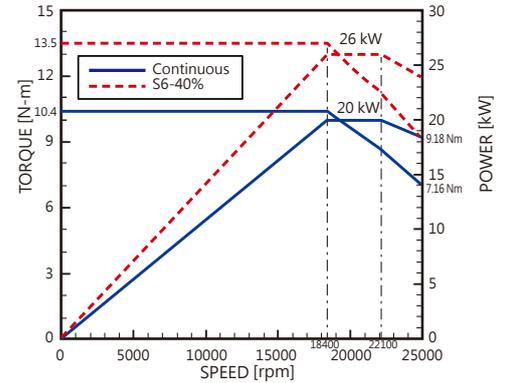
30,000rpm Built-in spindle

(ST:G600)



18,000rpm Built-in spindle

(ST:G700/G1000)



25,000rpm Built-in spindle

(OP:G700/G1000)

02 G Series Spindle

03

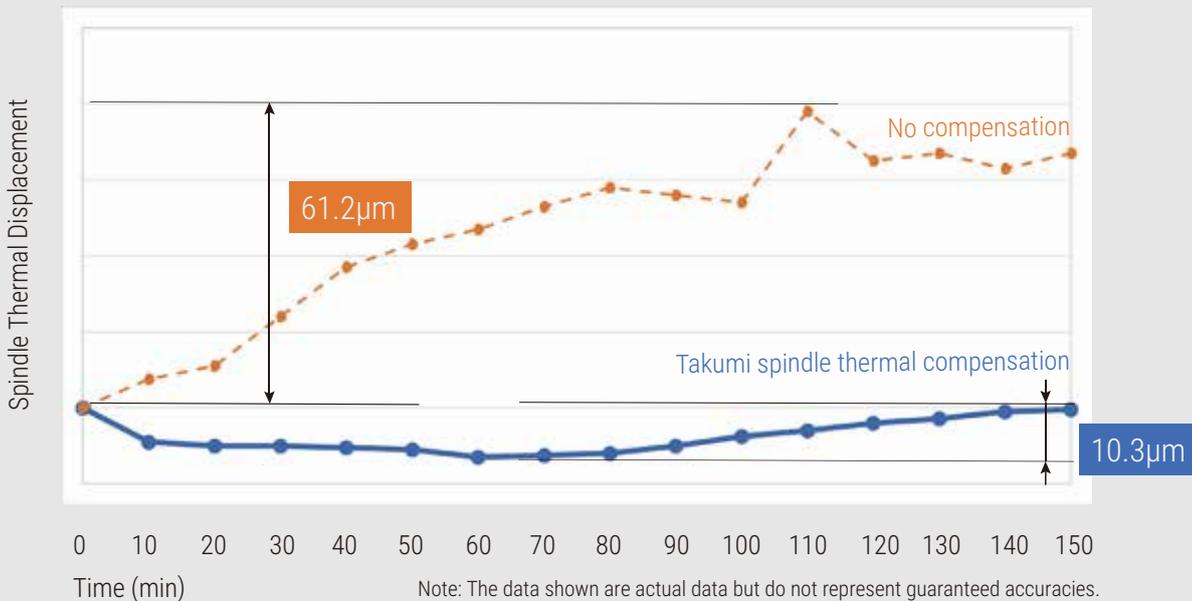
G Series Intelligent Spindle Thermal Compensation Technology

Deformation precision control

TAKUMI's unique spindle thermal compensation technology minimizes the heat from generating and compensates thermal expansion, which ensures better surface finish over a long cycle times.

There are several heat sources that can influence the performance of the machine tool. Three main thermal sources are spindle displacement, axis drive transmissions and structure. Among these sources spindle displacement is the most critical to overcome and address.

■ H10 with HEIDENHAIN TNC640; 15,000rpm direct drive; no machine warm up.



Without Compensation

Max. 61.2µm

★ **With Compensation**

Max. 10.3µm

83% reduction

Your benefits



**Machine warm-up
is not needed**



**High precision cutting
performance is guaranteed**



**High processing stability
over continuous runs**

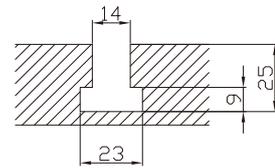
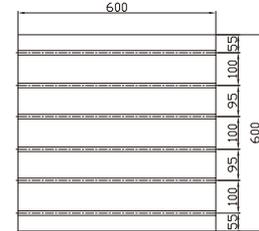
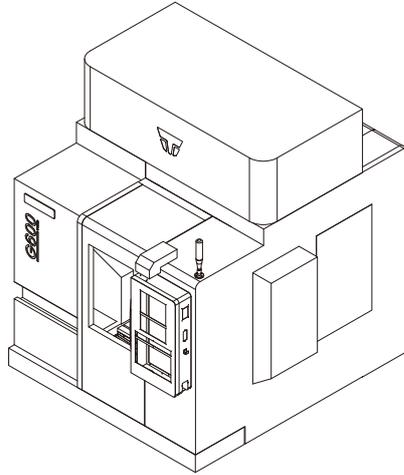


**Save money and reduce the time
and cost on cutting workpieces.**

External Dimension

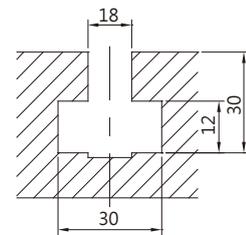
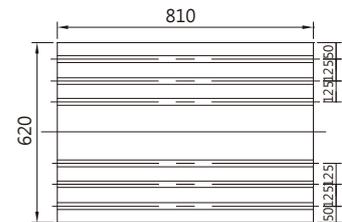
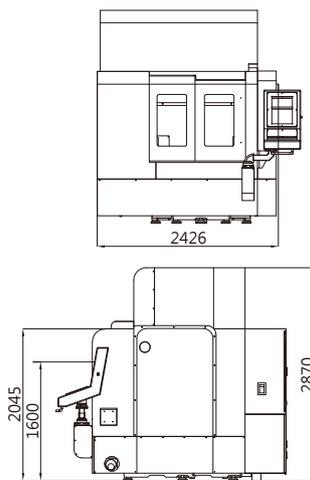
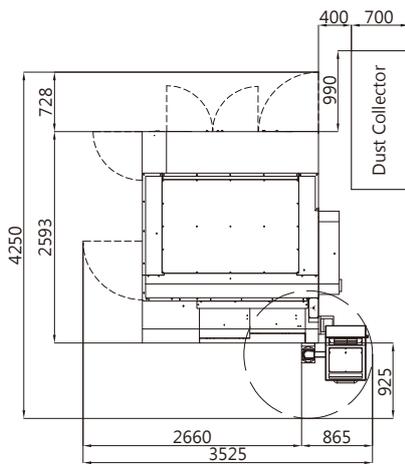
G600

Unit : mm



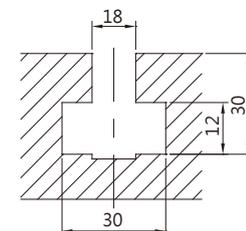
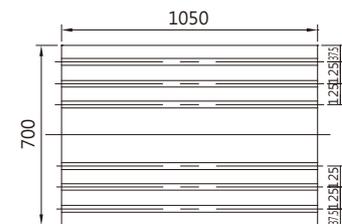
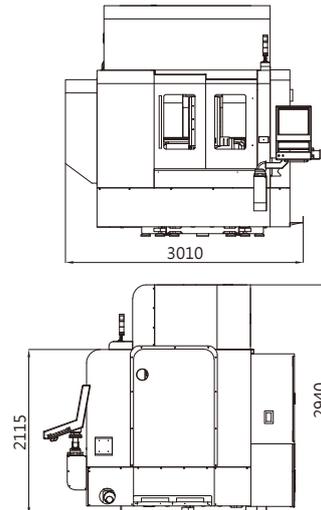
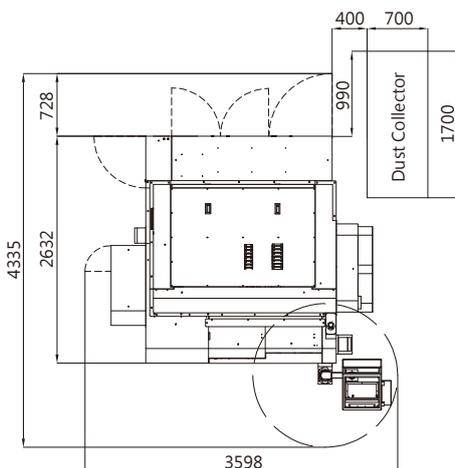
G700

Unit : mm



G1000

Unit : mm



Machine Specification

Travel	G600	G700	G1000
X-axis	600mm	750mm	1020mm
Y-axis	600mm	600mm	700mm
Z-axis	350mm	500mm	
Distance from spindle nose to table	120-470mm	150-650mm	180-680mm
Distance between columns	680mm	850mm	1080mm

Table	G600	G700	G1000
Dimension	600 x 600mm	810 x 620mm	1050 x 700mm
Max. load	500kg	500kg	800kg
T-slot	14 x 100 x 6mm	18 x 125 x 5mm	18 x 125 x 6mm

Spindle	G600	G700	G1000
Spindle type	Built-in	Built-in	
Spindle speed	30000rpm	18000rpm	
Spindle motor power	12kW/15kW (Cont./S6-10%)	18.5kW/30kW (Cont./S3-25%)	
Spindle taper	HSK-E40	HSK-A63	

Feed	G600	G700	G1000
Rapid feed (X/Y/Z)	30/30/30m/min	32/32/32m/min	
Cutting feed	12000mm/min	20000mm/min	
Motor power (X/Y/Z)	1.6/1.6/3.0kW	4.5/4.5/4.5kW	

ATC & Magazine	G600	G700	G1000
ATC type		Umbrella	
Number of tools	20pcs	16pcs	
Max. tool diameter (next pockets empty)	75/100mm	105/120mm	
Max. tool length	200mm	250mm	
Max. tool weight	1.5kg	3kg	

Supply	G600	G700	G1000
Air pressure		6kgf/cm ²	
Electric power supply	30kVA	50kVA	

Net Weight	G600	G700	G1000
Machine weight	5500kg	7000kg	9100kg

* The specifications and information may be changed without prior notice.

Standard & Optional

Standard:

- G600
Fanuc 0iMF-Plus 10.4"
30,000rpm, HSK-E40, Built-in spindle
20T, Umbrella ATC
- G700/G1000
Fanuc 0iMF-Plus 10.4"
18,000rpm, HSK-A63, Built-in spindle
16T, Umbrella ATC
Graphite vacuum system
Spindle air blast
Cutting air blast
Spindle oil cooler
Automatic centralized lubrication system
3-Axis absolute encoder motors
Heat exchanger for electrical cabinet
Full chip enclosure
Ethernet & RS-232 interface
3-Color signal light
Working light
Leveling block and screws
Maintenance tools
Manuals
Air gun
Manual pulse generator

Optional:

- Fanuc 31iMB
25,000rpm, HSK-E50, built-in spindle (G700/G1000)
24T, HSK-A63 (G700)
30T, HSK-A63 (G1000)
3-Axis ballscrew cooling
Linear scales (X/Y/Z)
Workpiece measurement
Tool measurement
Transformer
CE certificated

Spindle Thermal Compensation:

- ī Spin-TC I™
- ī Spin-TC II™
- ī Spin-TC III™

Graphite Cutting Package:

- Wiring preparation for graphite dust collector
- Grease lubrication
- Top cover
- Without wet cutting function
- Graphite dust collector
- Motor: 5HP/220V



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