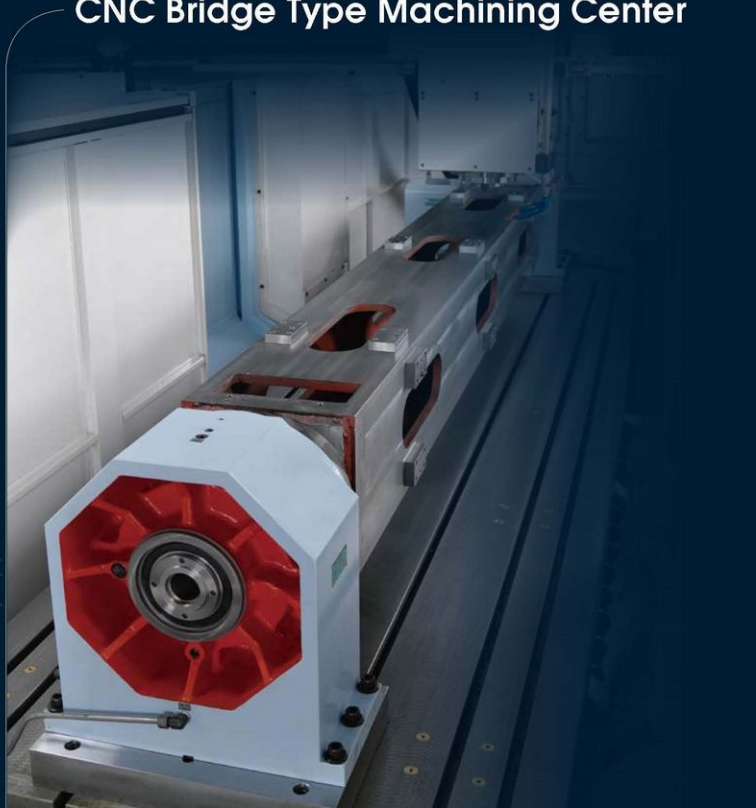




# ***FG SERIES***

**CNC Bridge Type Machining Center**



INNOVATION, OUTSTANDING,  
AND PURSUIT OF HIGH QUALITY



# Dedicated Design

FG Series CNC bridge type machining center is designed and produced based on over 30 years machining experiences of Chi-Fa, and concept of user-friendly. With high standard accuracy, superior rigidity and best flexibility application design, FG series is excellent for large-scale parts, mold, mold base as well as aerospace components machining.







# 100% Quality control

All FG series are inspected with precise laser test and dynamic trellis coder during assemble processes to assure quality and accuracy. All machines were required to pass an intensive cutting test for total performance check at final QC process.



# Rigid structure design with high machine accuracy

(Y axis travel 1500mm)

Y, Z axis adopt box way and Turcite-B with precise scraping to enhance cutting rigidity and vibration absorb. Y axis equipped with steel alloy way and roller bearing to ensure stable accuracy and extended machine precision life cycle.

Built-in spindle BT-40 & BT-50 are available. (L Series) BT-50 Gear driven spindle (LG Series)

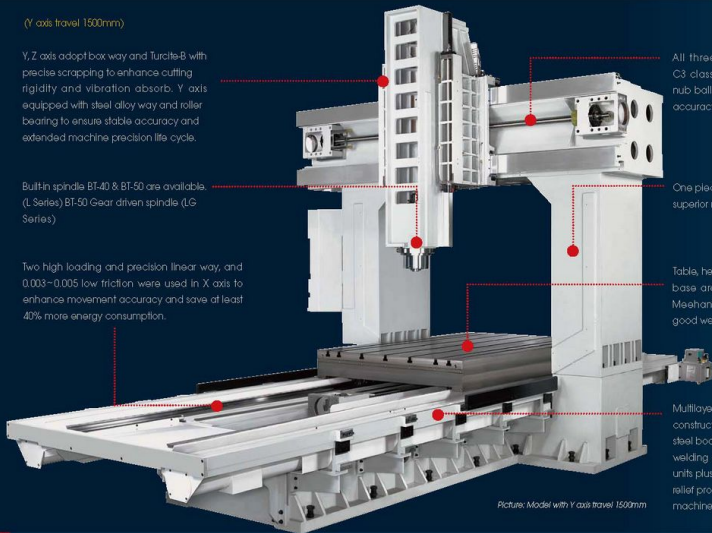
Two high loading and precision linear way, and 0.003~0.005 low friction were used in X axis to enhance movement accuracy and save at least 40% more energy consumption.

All three axes equipped with C3 class pre-tensioned double nut ball screw to ensure cutting accuracy.

One piece bridge type design for superior rigidity.

Table, head stock, and guide way base are built with high tensile Meehanite cast irons to provide good wear-resistance.

Multilayer enhanced rib construction with high-tensile steel board and special precision welding on base and bridge units plus heat treated and stress relief process provides super rigid machine structure.



Picture: Model with Y axis travel 1500mm

# Excellent for large-scale parts, molds, mold base, and aerospace components machining.

(Y axis travel 2100mm / 2500mm)

Z axis adopt box way and Turcite-B with precise scraping to enhance cutting rigidity and vibration absorb.

All three axes equipped with C3 class pre-tensioned double nut ball screw to ensure cutting accuracy.

Built-in spindle BT-50 are available. (L Series) BT-50 Gear driven spindle (LG Series)

Table, head stock, and guide way base are built with high tensile Meehanite cast Irons to provide good wear-resistance.



One super high loading roller way was used in Y axis upper side and inner side respectively to enhance cutting rigidity.



One super high loading and precision roller way, and 0.003~0.005 low friction was used in Y axis upper side and inner side respectively to enhance cutting rigidity, ensure stable accuracy, and extend machine precision life cycle.

Extra wide crossbeam and column in three pieces

Multilayer enhanced rib construction with high-tensile steel board and special precision welding on base and bridge units plus heat treated and stress relief process provides super rigid machine structure.

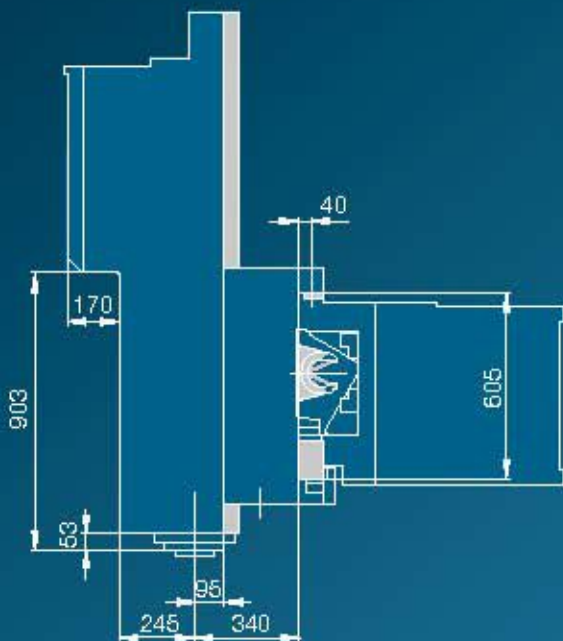
Three high loading and precision linear way, and 0.003~0.005 low friction were used in X axis to enhance movement accuracy and save at least 40% more energy consumption.



# Super Rigid Design (LG)

Extended head stock design provides better clearance and wider range of cutting capacity.

Best for huge deep mold and heavy duty machining. High/low gear provides greater cutting rigidity and machining efficiency.



## Gear head (LG) (Travel 1500mm)

- Distances between guide ways of Y axis: 605mm.
- Distance from spindle center to Y axis: front 340mm.
- Spindle center to Z axis: guide way front 95mm.

### Built-in high speed spindle (L)

- Built-in type spindle: 12000rpm/16000rpm(Opt.) / 20000rpm(Opt.)
- Equipped with high rigidity precise ceramic bearing.
- Oil mist for bearing lubrication.
- Oil-cooler system for spindle.
- High accuracy, high rigidity, high efficiency.
- No noise, low vibration.



### Alloy steel guide way & roller (Travel 1500mm)

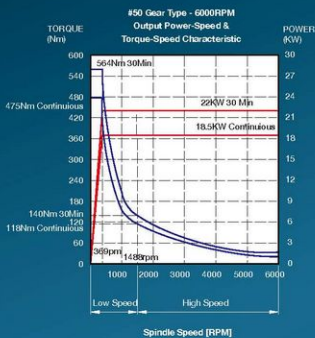
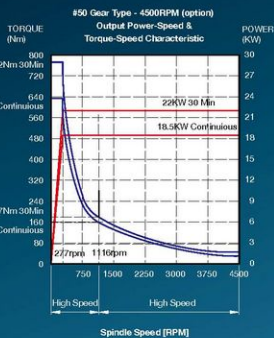
Special designed alloy steel guide way, with HRC 60 harden processed, plus steel double roller were used on Y axis to provide a maintenance free guide way structure to ensure smooth movement, stable accuracy and extended machine precision life cycle.





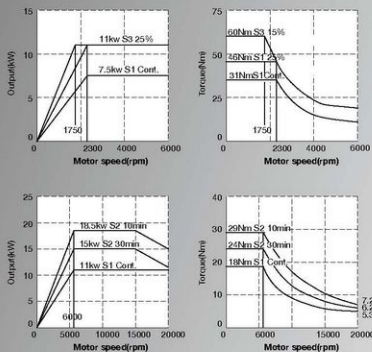


# Spindle Motor Torque Chart-LG Series Gear head BT-50

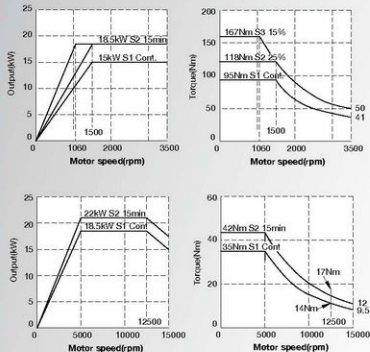


# Spindle Motor Torque Chart-L Series Built-in(BT-40/BT-50)

Motor Type : FANUC  $\alpha$ 112S/20000IB



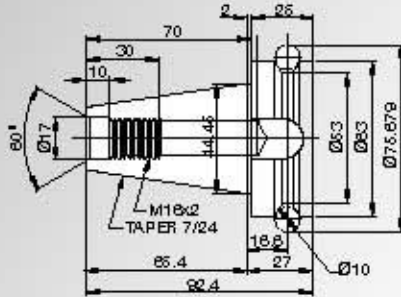
Motor Type : FANUC  $\alpha$ 112L/15000IB



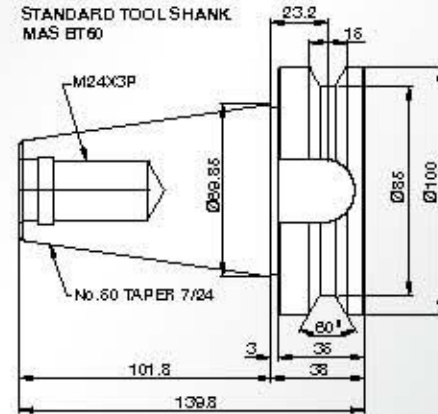


# Pull Stud and Tool Shank

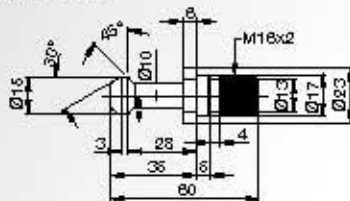
STANDARD TOOL SHANK  
MAS ET 40



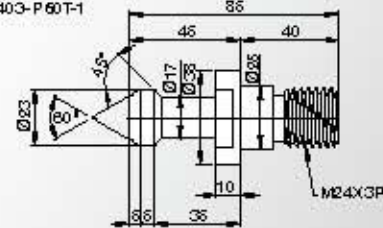
STANDARD TOOL SHANK  
MAS ET 60



STANDARD PULL STUD  
MAS 403-P40T-1



STANDARD PULL STUD  
MAS 403-P60T-1



## Standard Features

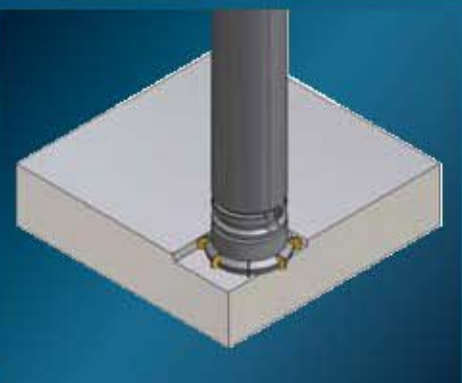
Spindle cooling system



Chain type chip conveyor

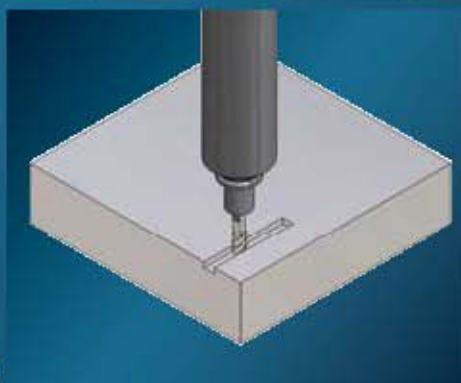


# Cutting Ability (LG Series)



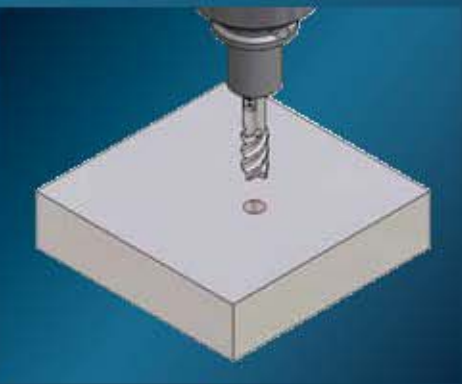
**Face milling**

Work piece material	S50C
Spindle speed	420 RPM
Feedrate	1,000 mm/min
Cutting width	120 mm
Cutting depth	6 mm
Material elimination rate	720 cc/min



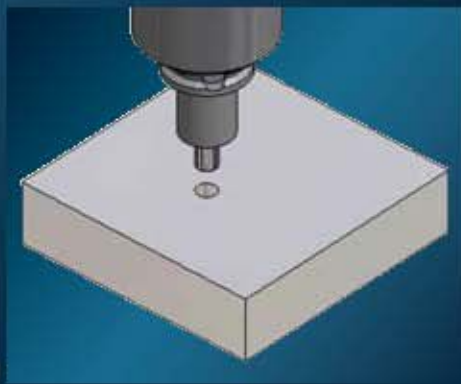
**End milling**

Work piece material	S50C
Spindle speed	1,500 RPM
Feedrate	1,000 mm/min
Cutting width	25 mm
Cutting depth	15 mm
Material elimination rate	375 cc/min



**Drilling**

Work piece material	S50C
Spindle speed	1,300 RPM
Feedrate	182 mm/min
钻孔直径	50 mm
Material elimination rate	375 cc/min



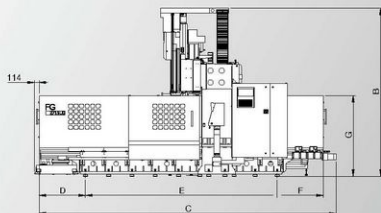
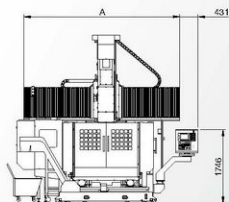
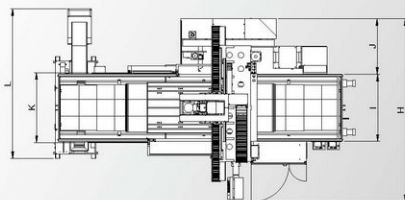
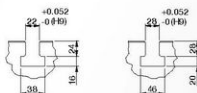
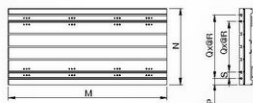
**Tapping**

Work piece material	S50C
Spindle speed	70 RPM
Feedrate	315 mm/min
Tapping	M45x4.5P

# Machine and Table Dimension

Unit : mm

MODEL	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R	S
FG-2215L/LG	3680	3975	5900	1025	3550	1025	1910	4330	1575	1315	1650	3530	2000	1200	100	4	200	100
FG-2715L/LG	3680	3975	7010	1090	4530	1090	1910	4330	1575	1315	1650	3530	2500	1200	100	4	200	100
FG-3215L/LG	3680	3975	8200	1150	5600	1150	1910	4330	1575	1315	1650	3530	3200	1200	100	4	200	100
FG-4215L/LG	3680	3975	10080	1205	7680	1200	1910	4330	1575	1315	1650	3530	4200	1200	100	4	200	100
FG-3225L/LG	4800	4700	8250	1120	5700	1065	2150	5450	2600	1450	2600	4550	3000	2000	200	8	200	
FG-4225L/LG	4800	4700	10250	1135	7670	1080	2150	5450	2600	1450	2600	4550	4000	2000	200	8	200	
FG-5225L/LG	4800	4700	12300	1200	9590	1150	2150	5450	2600	1450	2600	4550	5000	2000	200	8	200	
FG-6225L/LG	4800	4700	14500	1250	11790	1200	2150	5450	2600	1450	2600	4550	6000	2000	200	8	200	
FG-4231L/LG	5430	4800	11000	1135	7670	1080	2150	6050	3200	1450	3200	5000	4000	2500	50	11	200	
FG-5231L/LG	5430	4800	13000	1200	9590	1150	2150	6050	3200	1450	3200	5000	5000	2500	50	11	200	
FG-6231L/LG	5430	4800	15000	1250	11790	1200	2150	6050	3200	1450	3200	5000	6000	2500	50	11	200	







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