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ISO 9001
ISO 14001



Website



Facebook

The CNC Machine Tool Builder with

PERFORMANCE

Beyond

EXPECTATION

www.feeler.com



Our Innovation, Your future

FEELER'S SUCCESS YOUR PROSPECTS

Working with a right partner multiplies your performance. FFG (Fair Friend Group) provides the world with a diversity of machine tools and reaches multiple successes with its proactive, effective strategic formula - intensive R&D engineering, worldwide production sites, global

marketing through overseas subsidiaries, along with cutting-edge technology, uncompromising quality and thorough service. As the world's top machine tools maker, FFG offers far beyond machinery products but total solutions and ultimate value.

OUTSTANDING HIGHLIGHTS

- World 3rd Largest Machine Tools Group.
- World No. 1 Largest Machine Tools Group For Automotive Turnkey.
- No.1 VMC manufacturer in the world since 2009, with 8,000 units; over 10,000 units production outputs in 2011.
- HVTC Fair Friend College of Electromechanics attracts 2,300 students as FFG's talent tank.
- 2012 TAIWAN authoritative commercial magazine "Common Wealth" TOP 1000 manufacturers: Fair Friend Ent. Co., Ltd and Good Friend Int'l Holdings Inc. ranking No.1 for Machinery Industry and Machine Tools, respectively.
- In "Excellence in Research and Innovation" Awards, TIMTOS 2011, FFG won 3 awards as the biggest winner.
- The largest sole advertise sponsor and the largest Taiwanese exhibitor at both EMO and TIMTOS 2009/2011/2013/2015.
- Won the prize of 2008 AI Outstanding Product Award and was in the TOP 100 excellence equipment suppliers, together with world-famous machine tool manufacturers such as DMG, MAZAK, MORI SEIKI, MAKINO, MAG and Agie Charmilles. FFG ranked NO.1
- The best quality and service machine tools manufacturer from Taiwan – evaluated by Asia Pacific Metal Working Equipment News.
- The only Taiwanese machine tools maker won the National Quality Award and the Gold Medal of the National Award of Excellence.
- The only machine tools group reported by Forbes, Business Week, the Wall Street Journal, National TV in Spain and China central TV.
- 2011, awarded "TAIWAN Top 100 Brands" by Taiwan Ministry of Economic Affairs, as a high recognition to FFG and FEELER.



Your Best PARTNER for Machine Tools

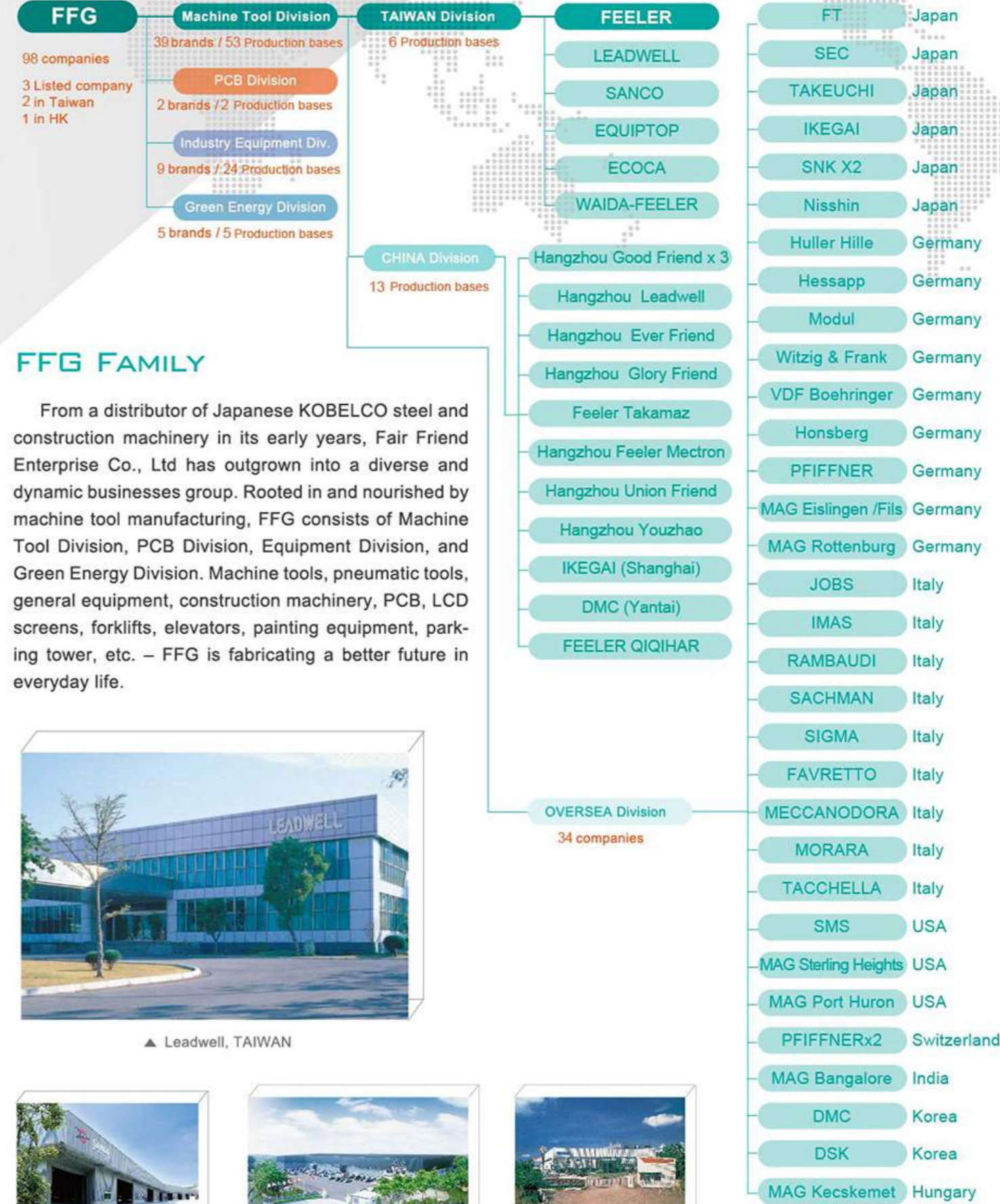
FFG MACHINE TOOL DIVISION

Fair Friend Group, one of the globally major machine tool builders, provides the world with quality machine tools by the synergy from its teams of more than 4,000 dedicated employees. Every year more than 10,000 units of machine tools are well produced from all our sites which scatter in Taiwan, China, Japan, the U.S.A. and Italy. A complete product lineup ranges from vertical / horizontal/double column machining centers, vertical/horizontal turning centers, large CNC boring & milling centers, various types of grinders, large floor boring machines, 5-axis machining centers to double column CNC grinding machines – a truly one-stop machine tool maker meets all your needs. Since its establishment in 1979, Fair Friend has been investing intensive endeavors

into providing advanced machinery technology for a better tomorrow. "Integrity, Quality, Innovation, Unceasing Improvements, Customer First, Continuous Growth" are the very core values and cornerstones where Fair Friend's crew build up prosperity and pride. Along with capabilities of quality manufacturing, cost down production, extensive service network and throughout sales channels, we are rewarded with a leading reputation among all the Taiwanese machine tool builders and have kept reaching new pinnacles. Nevertheless, as climb higher we look even higher. "World No. 1 Machine Tool Builder," isn't a goal for inspiring but implementing. Sticking to our formula of success and keen ambition, Fair Friend is turning a great vision into reality.



▲ Fair Friend - Nantun, TAIWAN



FFG FAMILY

From a distributor of Japanese KOBELCO steel and construction machinery in its early years, Fair Friend Enterprise Co., Ltd has outgrown into a diverse and dynamic businesses group. Rooted in and nourished by machine tool manufacturing, FFG consists of Machine Tool Division, PCB Division, Equipment Division, and Green Energy Division. Machine tools, pneumatic tools, general equipment, construction machinery, PCB, LCD screens, forklifts, elevators, painting equipment, parking tower, etc. – FFG is fabricating a better future in everyday life.



▲ Leadwell, TAIWAN



▲ Sanco, TAIWAN



▲ Equiptop, TAIWAN



▲ Ecoca, TAIWAN

Data as of Oct, 2016

Deep Market Penetration In CHINA

FFG's early entrance into the Chinese market in 1993 resulted in a solid foundation for our success today. Our state-of-art manufacturing facilities and precise workmanship deliver quality machine tools that help our customers achieve productivity and profitability. Zhejiang Province is FFG's production stronghold. The production plants scattering over 3 major industrial bases provide remarkable productivity to satisfy enormous local demands. 90 branch offices located all over China weave an expansive sales and service network. Furthermore, FFG set up Fair Friend Institute of Electromechanics in 2008 to develop more talents for the future.



Good Friend China Headquarters, CHINA



Hangzhou Good Friend - Hsiaosha (66,000 m²), CHINA



Hangzhou Good Friend - Xiasha Technology Park (231,000 m²), CHINA



Hangzhou Takamaz



Hangzhou Good Friend - Jiangdong Technology Park (660,000 m²), CHINA



Glory Friend / ANEST IWATA



Hangzhou Every Friend (82,500 m²), CHINA



Hangzhou Global Friend (59,400 m²), CHINA



Hangzhou Leadwell (66,000 m²), CHINA



Xiasha Base

2004 acquired
176,000 sq. m
FFG major mfg. sites

2

Jiangdong Base

2007 acquired
466,000 sq. m
FFG joint venture
mfg. plants

3

Xiaoshan Base

1993 acquired
57,000 sq. m
FFG China
Headquarters

1

Hangzhou

Sales & Service Network

100 more branches

Data as of Oct. 2016

Fair Friend Institute of Electromechanics

Fair Friend Institute of Electromechanics was established in 2008, located in Xiasha Economy Development District, Hangzhou. It consists of departments of machinery design and manufacture, mold design and manufacture, automated electromechanics, etc. 2,300 students are well educated here to be professional, quality manpower for machinery industry. Ample training resources, 100% employment rate, award-winning credits make Fair Friend Institute of Electromechanics ranking Top 3 amid 3-year vocational colleges in Zhejiang. Every year some 800 graduates join FFG as their first choice for career.



Global Scale Technology and Marketing

Honsberg
Established : 1798
Joined FFG : 2013
Transfer machines



**MÜLLER HILLE
DIEDESHEIM**
Established : 1923
Joined FFG : 2013
Vertical milling centers
Horizontal milling centers



HESSAPP
Established : 1946
Joined FFG : 2013
Vertical turning centers
Horizontal turning centers



MODUL
Established : 1900
Joined FFG : 2013
Gear hobbing,
chamfering
machining centers



Witzig & Frank
Established : 1865
Joined FFG : 2013
Multi-spindle,
multi-task machining centers



VDF BOEHRINGER
Established : 1844
Joined FFG : 2013
Turning Centers



CPfiffner
precise solutions
Established : 1989
Joined FFG : 2015
Rotary Transfer
Machines



MAG Eisingen/
Fils
Established : 2005
Joined FFG : 2015
Horizontal machining
centers, transfer lines,
turnkey



MAG Rottenburg
Established : 2005
Joined FFG : 2015
Spindles, Rotary tables



CPfiffner
precise solutions
Established : 1970
Joined FFG : 2015
Rotary Transfer Machines,
Retrofit machines



MAG Bangalore
Established : 2005
Joined FFG : 2015
Application technology



DMC
Established : 1944
Joined FFG : 2015
Vertical / Horizontal
machining centers,
hydraulic parts



SK DSK MACHINERY
Established : 1995
Joined FFG : 2016
CNC Heavy Duty Machines
(Horizontal Lathe, Vertical
Lathe/Double Column
Machining Center, Roll Grinder)



MAG Kecskemet
Established : 2005
Joined FFG : 2015
ATC
Chip conveyor
Components



MAG Changchun
Established : 2005
Joined FFG : 2015
Vertical / Horizontal
machining centers,
Coldforming machines



FEELER - QIQIHAR
Established : 1950
Joined FFG : 2016
Heavy Duty Vertical /
Horizontal Machine,
Deep hole boring MC,
crank shaft lathe, VTL,
vertical grinders



**QUALITY
is vital at FEELER**

Through M&A and joint venture, FFG strengthens technological and global marketing power effectively. Advanced technologies are transferred and applied in our machine tool products to offer our users the quality and performance beyond their expectation. Our joint ventured corporations or subsidiaries are set in Japan, the US, Germany and Italy, the countries where cutting-edge machinery technologies are cradled. FFG's overseas bases also build up extensive, worldwide distribution channels. In most corners of the world, you can have excellent machine products and technical supports delivered by FFG. We will just be there for you.

SNK
Established : 1949
Joined FFG : 2016
FMS/FMC systems, Bridge Type
Multi-Centers, Machine Tools for
Aircraft Parts, Roll Lathes, 3D
Measuring Machines, Various
Types of Machining Centers



**SNK
NISSIN**
Established : 1952
Joined FFG : 2016
Vertical/Horizontal
Machining Center,
Large lathe, Grinder



Takeuchi
Established : 1945
Joined FFG : 2006
PCB drilling machine



FT
Established : 1961
Joined FFG : 2008
FFG and TAKAMAZ joint venture
corporation, as sales & service base of
FFG CNC machine tools. Also a J.V.
production site in China.



IKEGAI
Established : 1889
Joined FFG : 2014
Large turning centers
Plastic injection molding machines
Engine/generator manufacturing
Printing equipment
Packaging machinery equipment



SMS
Established : 1854
Joined FFG : 2007
Integrated Systems, Vertical
Turning Lathes, Universal
Trimming Machines.



MAG Port
Huron
Established : 2005
Joined FFG : 2015
Horizontal machining
centers, Transfer lines,
Turnkey



JOBS
Established : 1978
Joined FFG : 2011
Mega double column
5 axis machining centers,
gantry type milling
boring centers.



SACHMAN
Established : 1962
Joined FFG : 2011
Floor type milling boring
machines, 5 axis milling
and boring machines.



SIGMA
Established : 1950
Joined FFG : 2011
5 axis vertical machining
centers.



RAMBAUDI
Established : 1945
Joined FFG : 2010
5-Axes Machining Center,
5-Face Machining Center,
High-Precision 5-Axes Spindle.



IMAS
Established : 1948
Joined FFG : 2015
Multi-tasking rotary table
transfer machines



MAG Sterling
Heights
Established : 2005
Joined FFG : 2015
Horizontal machining
centers, Transfer lines,
Turnkey



Machine Tool Product Line

CNC

Turning ▶



FTC-30

Slant Bed CNC Turning Center
 FTC- 300 / 350 / 350L(MC) / 350XL(MC)
 350LY / 350SLY / 450(MC) / 640(MC) / 640L(MC)
 FTB- 350 / 350L / 350XL



FTC-640LMC

HT SERIES
 CNC Turning Center
 HT-30MC / 30Y / 30SY / 40Y



HT-30Y

FT SERIES
 CNC Turning Center
 FT-200 / 250 / 350 / 350AL



FT-250SY

FVT SERIES
 Heavy Duty CNC Vertical Lathe
 FVT-450 / FVT-600(MC) / FVT-800 /
 FVT-1000(MC) / FVT-1600



FVT-600



FVT-1000MC

Milling ▶

FVP SERIES
 Vertical Machining Center
 FVP-800(A) / 1000(A) / 1300(A)
 FV-1500(A) / 1600(A)



FVP-1000A



FV-1600A

VMP SERIES
 Vertical Machining Center
 VMP-23(A) / 23Aapc / 30(A) / 32(A) / 32Aapc
 40(A) / 45(A) / 50(A) / 65(A)
 VM-45S



VMP-45A

QMP SERIES
 Vertical Machining Center
 QMP-23A / 23Aapc / 30A / 32A / 32Aapc / 40A



QMP-40A



QMP-32AAPC

HV SERIES
 Vertical Machining Center
 HV-32A / 32Aapc / 40A



HV-40A

NBP SERIES
 Vertical Machining Center
 NBP-1000(A) / 1100(A) / 1300(A)



NBP-1300A

VB SERIES
 Vertical Machining Center
 VB-1400(A) / 1650(A) / 1900(A) / 2200(A)



VB-1650A

EH SERIES
 Horizontal Machining Center
 EH-320 / 320APC / 500



EH-320

U SERIES
 5-Axis vertical machining center
 U-600 / 800



U-600



U-800

FMH SERIES
 Horizontal Machining Center
 FMH-400 / 500 / 630 / 800



FMH-630



FMH-800

MT SERIES
 5-Axis Mil - Turn Machining Center
 MT-1000



MT-1000

TV SERIES
 Drilling & Tapping Center
 TV-510 / 510A / TC-20a



TV-510



TC-20a

SVW SERIES
 Double Column Machining Center
 SVW-2217-SVW-4223



SVW-2217

SDM SDL SERIES
 Double Column Machining Center
 SDM-2216-SDM-7235



SDM-4220

SBM SERIES
 CNC Bed Type Universal Milling Machine
 SBM-2000H / 2500H / 3000H / 3500H
 SBM-2000V / 2500V / 3000V / 3500V



SBM-2500V

SHM SERIES
 CNC Horizontal Boring & Milling Machine
 SHM-630L / 800 / 800L



SHM-800

SHB SERIES
 CNC Horizontal Boring & Milling Machine (Extendable Spindle)
 SHB-11025/11030/11040RS / SHB-11030/11040RM
 SHB-13025/13030/13040RS / SHB-13030/13040 RM/RL



SHB-11025RS

FLEXIBLE Manufacturing System (FMS)



State-of-the-art MANUFACTURING Capabilites

WWW.FEELER.COM

Over the years, Fair Friend FEELER Machine Tools have earned a world-class reputation for product excellence and reliability. This success is the result of our innovative design, in-house machining capabilities, and rigorous quality control. In order

to manufacture machines that fully meet customers' requirements all around the world, we utilize an advanced and integrated manufacturing system. At the core of Fair Friend's manufacturing capabilities are our state-of-the-art production facilities.



Fair Friend's products are manufactured by a complete system of R&D, manufacturing, inspection, and testing. The pictures shown here are only a few of Fair Friend's most extensive manufacturing capabilities. This level of advanced manufacturing equipment, combined with the great care paid to every step throughout the manufacturing process, assures the optimum performance of each Fair Friend CNC Machine Tool.



Discover FEELER's R&D Edges

Constant breakthroughs establish Fair Friend with a reputation of "Innovation and Full Customer Satisfaction". Fair Friend is committed to providing the best possible machines to customers. One of the most important reasons for Fair Friend's product excellence is our "Total Dedication to R&D".

At Fair Friend, we emphasize R&D as a crucial factor to our success. At FEELER alone, R&D staff makes up one-third of the total workforce. In addition, we invest 4% of our annual revenue on R&D, per year. Our innovative brainpower can competently and efficiently fulfill your design and application requirements.



PRE-PRODUCTION SIMULATION SYSTEM

- 3D simulation for low cost high efficiency production.
- User-friendly, visualized marketing tool.
- In-time connection between simulation of auto control signals and the on-site machine is available.
- Simulations for best processing flow provide various possible plans for evaluation.
- Lowering investment risks, boosting investment decision-making.



REMOTE MONITORING SYSTEM



- Providing CNC machine tool remote operation or monitoring function.
- Remote diagnosis is available, which shortens trouble shooting time.
- Downtime is reduced and thereby improved efficiency is obtained.
- Facilitating plant digital management
- Reducing a great deal of cost and enhancing professionalism.



UNPARALLELED APPLICATION ENGINEERING

FEELER's rigid machine design and unparalleled Application Engineering capabilities are best demonstrated in this work piece. The top curvature surface of this work piece displays five letters of B1000. Each letter is machined with different height as follow: B (5 μ m), 1 (3 μ m), 0 (1 μ m), 0 (0.5 μ m), 0 (0.3 μ m). This result is only possible through the combination of superb machine rigidity and breakthrough CAD/CAM technology.

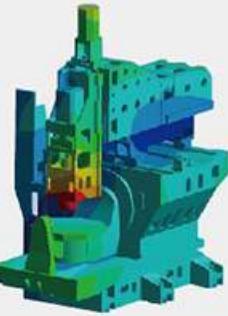


ZELSS 3D COORDINATE MEASURING MACHINE

FEELER utilizes the 3D Coordinate Measuring Machine (CMM) to inspect critical parts ensuring outstanding parts accuracy.

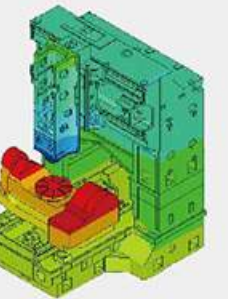
FINITE ELEMENT ANALYSIS

FEELER'S machine structure is designed and analyzed using advanced Finite Element Analysis software for dynamic simulation and structural analysis. This design method assures optimum structural rigidity, machine accuracy and reliability.



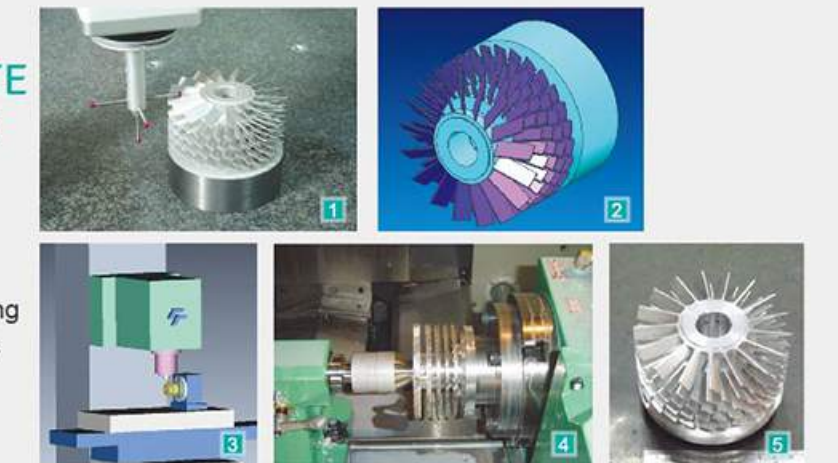
OPTIMUM DYNAMIC RIGIDITY

Utilizing the advanced Finite Element Analysis (FEA), FEELER obtained an outstanding spindle design with optimum dynamic rigidity and resonance frequency.



REVERSE ENGINEERING

FEELER has abundant experiences in implementing Reverse Engineering, which is processed as below:



1. First measured via 3D Coordinate Measurement Machine (CMM)
2. and it creates a 3D Solid Modeling
3. This 3D Modeling generates the CAD/CAM parameters
4. and the part is machined via 5-Axis Machining Technology
5. A reverse-engineered work piece is created successfully

FTC series

CNC TURNING CENTER



FTC-10 / FTC-20 / FTC-20L / FTC-30

MODEL	UNIT	FTC-10	FTC-20	FTC-20L	FTC-30
Swing over bed	mm	Ø520	Ø600	Ø600	Ø580
Standard turning diameter	mm	Ø180	Ø250	Ø250	Ø310
Max. turning diameter	mm	Ø240	Ø350	Ø350	Ø450
Max. turning length	mm	255	343	613	621
Chuck diameter	inch	6" (8")	8" (10")	8" (10")	10" (12")
Swing over saddle Chuck size	mm	Ø260	Ø400	Ø400	Ø450
X-axis travel	mm	120+20	175+25	175+25	225+25
Z-axis travel	mm	290	380	650	670
Rapid traverse rate X/Z axis	m / min	24 / 24	24 / 24	24 / 24	20 / 20
Spindle nose	type	A2-5	A2-6	A2-6	A2-8
Spindle speed	rpm	6,000	4,500	4,500	3,500
Spindle bore diameter	mm	Ø56	Ø62	Ø62	Ø88
Through hole draw tube	mm	Ø45	Ø52	Ø52	Ø75
Spindle bearing diameter	mm	Ø90	Ø100	Ø100	Ø130
Spindle taper	MT	MT#6	1:20	1:20	1:20
No. of tools	set	10	8	8	8
Standard O.D. tool size	mm	□20	□25	□25	□25
Max. I.D. tool size	mm	Ø25	Ø40	Ø40	Ø40
Tailstock quill diameter	mm	Ø50	Ø65	Ø65	Ø100
Tailstock quill stroke	mm	80	90	90	100
Tailstock quill taper	MT	MT-3	MT-4	MT-4	MT-4
Spindle motor (30min/continuous)	kW	11 / 7.5	18.5 / 15	18.5 / 15	22 / 18.5
Servo motors (X/Z)	kW	X=1.2 / Z=1.2	X=3.0 / Z=3.0	X=3.0 / Z=3.0	X=3.0 / Z=3.0
Coolant tank capacity	ℓ	115	95	110	95
Floor space	mm	1,795 x 1,317	2,530 x 1,535	2,750 x 1,542	2,920 x 1,685
Machine weight	kg	2,500	3,550	3,850	5,080

*Specifications are subject to change without prior notice.



SLANT BED CNC TURNING CENTER

FTC-300 / FTC-350(MC) / FTC-350L(MC) / FTC-350XL(MC)
FTC-350LY / FTC-350SLY / FTC-450(MC) / FTC-640(MC) / FTC-640L(MC)
FTB-350 / FTB-350L / FTB350XL

MODEL	UNIT	FTC-300	FTC-350 (MC)/L (MC)/XL (MC)	FTC-350S	FTC-350LY	FTC-350SLY	FTC-450 (MC)	FTC-640(MC)/L(MC)	FTB-350/L/XL
Swing over bed	mm	Ø550	Ø600	Ø650	Ø600	Ø650	Ø670	Ø750	Ø600
Swing over saddle	mm	Ø260	Ø400	Ø450	Ø400	Ø450	Ø450	Ø550	Ø400
Standard turning diameter	mm	Ø180	Ø327 (165)	Ø156	Ø200	Ø200	Ø327 (Ø165)	Ø271 (Ø240)	-
Max. turning diameter	mm	Ø300	Ø350 (235)	Ø300	Ø350	Ø350	Ø450 (Ø270)	Ø640 (Ø470)	Ø400
Max. turning length	mm	320	340 (310)/660(600)/1000(970)	210	585	515	650 (600)	808 (760)/1,440(1,170)	340/660/1000
Bar work capacity	mm	Ø52	Ø52 (Ø52)/ (Ø66)	Ø52/Ø45	Ø52	Ø52/Ø45	Ø78	Ø117.5	Ø52
X-axis travel	mm	150+20	175+25 (188+2)	150+10	175+25	175+10	225+25 (205+2)	320+25 (325+2)	200+25
Y-axis travel	mm	-	-	-	80(±40)	80(±40)	-	-	-
Z-axis travel	mm	350	380 (350)/700(640)/1,040(1,010)	250	625	555	700 (640)	870 (830)/1,500(1,240)	380/700/1040
E-axis travel	mm	-	-	345	-	660	-	-	-
Tailstock travel type	type	Manual	Manual	-	Manual	-	Manual	Programmable	Manual
Tailstock travel	mm	300	290/610/950	-	610	-	610	810/1,440	290/610/950
Tailstock quill travel type	type	Hydraulic	Hydraulic	-	Hydraulic	-	Hydraulic	Hydraulic	Hydraulic
Tailstock quill diameter	mm	Ø50	Ø70	-	Ø70	-	Ø100	Ø110	Ø70
Tailstock quill stroke	mm	80	90	-	90	-	100	100	90
Tailstock quill taper	MT	MT-3	MT-4	-	MT-4	-	MT-4	MT-5	MT-4
Rapid traverse rate X-axis	m/min	24	30	-	24	24	30	20	30
Rapid traverse rate Y-axis	m/min	-	-	-	12	12	-	-	-
Rapid traverse rate Z-axis	m/min	24	30	24	24	24	30	20	30
Rapid traverse rate E-axis	m/min	-	-	12	-	12	-	-	-
Spindle speed	rpm	6000	4500	4500/6000	4500	4500/6000	3500	2000(2 Step)	4500
Spindle nose	type	A2-5	A2-6	A2-6/A2-5	A2-6	A2-6/A2-5	A2-8	A2-11	A2-6
Hydraulic chuck diameter	mm	Ø169 (6")	Ø210 (8")	Ø210 sub:Ø169	Ø210 (8")	Ø210 sub:Ø169	10"	15"	Ø210
Spindle bore diameter	mm	Ø62	Ø62 (Ø76)	Ø62/Ø56	Ø62 (Ø76)	Ø62/Ø56	Ø88	Ø131	Ø62
Spindle bearing diameter	mm	Ø90	Ø100 (Ø110)	Ø100/Ø90	Ø100 (Ø110)	Ø100/Ø90	Ø130	Ø180	Ø100
Spindle taper	mm	MT-6	1:20	1:20 sub:MT#6	1:20	1:20 sub:MT#6	1:20	1:20	1:20
Live tooling speed	rpm	-	-(4000)	-	3,000	3,000	-(4,000)	-(3,000)	-
No. of tools	set	10	8 (12VDI40)/(12)	12	12-VDI30	12VDI30	8 (12VDI40)/(12)	12 (VDI60)	8(12)
Standard O.D. tool size	mm	□20	□25	□20	□20	□20	□25	□32	□25
I.D. tool size (Max.)	mm	Ø25	Ø40	Ø25	Ø32	Ø25	Ø40	Ø50	Ø40
Tool changing time	sec	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Spindle motor (cont / 30)	kW	7.5/11	15/18.5 (7.5/15)	15/18.5 sub:5.5/7.5	5/9	5/9 sub:5.5/7.5	13/22	22/26	15/18.5
X / Y / Z / E servo motor	kW	1.6(X)/1.6(Z)	3(X)/3(Z)	3/-/3/1.6	3/1.6/3	3/1.6/3/3	3(X)/3(Z)	4(X) /4(Z)	3(X)/3(Z)
Live tool power (cont/30)	kW	-	-(2.2/3.7)	-	3	-	-(2.2/3.7)	-(11/15)	-
Positioning accuracy X / Y / Z	µm	10(X)/10(Z)	10(X)/10(Z)	10/10/10	10/10/10	10/10/10	10(X)/10(Z)	10(X)/25(Z)	10(X)/10(Z)
Repeatability accuracy X / Y / Z	µm	6(X)/6(Z)	6(X)/6(Z)	6/6	6/6/6	6/6/6	6(X)/6(Z)	6(X)/6(Z)	6(X)/6(Z)
Power capacity	KVA	15	25	40	30	45	30	45	-
Coolant tank capacity	ℓ	100	90/110/135	120	110	150	185	200/350	90/110/135
Machine width	mm	2,500	2,564/2,880/3,500	2,920	2,880	3,235	3,425	3,580 (3,680)/4,280(4,380)	2,564/2,880/3,496
Machine depth	mm	1,530	1,580/1,580/1,665	2,010	1,800	2,010	1,770	2,125	1,580/1,580/1,665
Machine height	mm	1,650	1,945 (2,045)/1,945(2,045)/1,870(2,180)	1,967	2,050	2,205	2,220 (2,280)	2,415 (2,550)/2,550	1,944/1,944/1,869
Machine weight	kg	3,100	3,500 (4,000)/4,000(4,500)/4,500(5,000)	4,000	4,500	5,000	6,000	9,550 (10,050)/10,050(11,000)	3,500/4,000/4,500

*Specifications are subject to change without prior notice.

- FTC series
- FT series
- HT series
- FVT series
- FVP series
- VMP series
- QMP series
- HV series
- NBP series
- VB series
- EH series
- U series
- FMH series
- MT series
- TV series
- SVW series
- SDM/SDL series
- SBM series
- SHM series
- SHB series

FT series

CNC
TURNING CENTER
BOXWAY



FT-200 / FT-250 / FT-350 / FT-350AL

MODEL	UNIT	FT-200	FT-250	FT-250SY
Swing over bed	mm	635	635	635
Swing over cross slide	mm	475	475	475
Max. turning diameter	mm	330	420	720
Max. turning length	mm	487	1,037	1,050
Bar work capacity	mm	65	77	77 / 51
Chuck size	inch	8"	10"	10" / 8"
X-axis travel	mm	165 + 10	210 + 20	210+10
Z-axis travel	mm	580	1,120	1,050
Max. spindle speed	rpm	4,500	3,500	3,500 / 4,500
Spindle nose	type	A2-6	A2-8	A2-8 / A2-6
Through-spindle hole diameter	mm	76	88	88 / 56
Spindle bearing inner diameter	mm	110	130	130 / 100
No. of tools	set	BMT65-12	BMT65-12	BMT 65-12
Shank height for square tool	mm	25	25	25
Shank diameter for boring bar	mm	32	32	32
Turret indexing time	sec	0.15 / 0.72	0.15 / 0.72	0.15 / 0.72
Rapid traverse rate X-axis	mm/min	24,000	24,000	24,000
Rapid traverse rate Z-axis	mm/min	24,000	24,000	24,000
Tailstock travel	mm	375	900	947
Tailstock spindle diameter	mm	100	100	-
Tailstock quill stroke	mm	100	100	-
Taper hole of tailstock spindle	MT	MT-4	MT-4	-
Main spindle drive motor<cont/30min>	kW	11 / 15	18.5 / 22	18.5 / 22 ; 11 / 15
Rotary tool spindle drive motor<cont/30 min>	kW	3.7 / 5.5	3.7 / 5.5	3.7 / 5.5
Servo motors (X / Z / E)	kW	3 / 3 / 1.6	3 / 3 / 1.6	4 / 4 / 3 / 3
Coolant tank capacity	ℓ	200	250	360
Floor space	mm	4,240 x 1,900	4,850 x 2,283	5150 x 2135
Machine height	mm	1,955	1,955	2,200
Machine weight	kg	5,150	6,210	7,550

*Specifications are subject to change without prior notice.

MODEL	UNIT	FT-350	FT-350AL
Swing over bed	mm	725	725
Swing over cross slide	mm	495	495
Max. turning diameter	mm	620	620
Max. turning length	mm	1,062	1,520
Bar work capacity	mm	91	115
Chuck size	inch	12"	15"
X-axis travel	mm	310 + 20	310 + 20
Z-axis travel	mm	1,130	1,630
Max. spindle speed	rpm	3,300	2,000
Type of spindle nose	type	A2-8	A2-11
Through-spindle hole diameter	mm	102	131
Spindle bearing inner diameter	mm	160	180
Number of tools	set	BMT65-12	BMT65-12
Shank height for square tool	mm	25	25
Shank diameter for boring bar	mm	40	40
Turret indexing time	sec	0.3 / 0.9	0.3 / 0.9
Rapid traverse rate X-axis	mm/min	20,000	20,000
Rapid traverse rate Z-axis	mm/min	20,000	20,000
Tailstock travel	mm	900	1,400
Tailstock spindle diameter	mm	110	110
Tailstock quill stroke	mm	120	120
Taper hole of tailstock spindle	MT	MT-5	MT-5
Main spindle drive motor<cont/30min>	kW	22 / 30	22 / 26
Rotary tool spindle drive motor<cont./30 min>	kW	3.7 / 5.5	3.7 / 5.5
Servo motors (X / Z / E)	kW	4 / 4 / 3	4 / 4 / 3
Coolant tank capacity	ℓ	355	420
Floor space	mm	4,725 x 2,290	5,225 x 2,290
Machine height	mm	2,200	2,200
Machine weight	kg	9,430	10,570

FTC series

FT series

HT series

FVT series

FVP series

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SVW series

SDM/SDL series

SBM series

SHM series

SHB series

HT series

CNC
TURNING CENTER
BOX WAY



HT-30MC / HT-30Y / HT-30SY / HT-40Y

FVT series

CNC
VERTICAL LATHE
HEAVY DUTY



FVT-450 / FVT-600(MC) / FVT-800 /
FVT-1000(MC) / FVT-1600

MODEL	UNIT	HT-30Y	HT-30MC	HT-30SY	HT-40Y
Swing over bed / Front door	mm	923.8	923.8	923.8	923.8
Swing over saddle	mm	755	755	755	755
Max. turning diameter	mm	356	356	356	356
Standard turning diameter	mm	275	275	275	275
Max. turning length	mm	705	705	705	705
Bar work capacity	mm	78	78	78 44	90
X-axis travel	mm	260	260	260	260
Y-axis travel	mm	100 (±50)	---	100 (±50)	100 (±50)
Z-axis travel	mm	795	795	795	795
Spindle speed	rpm	3,500	3,500	Main Spindle: 3,500 Sub Spindle: 6,000	3,000
Spindle nose type	type	JIS A2-8	JIS A2-8 (A2-6)	Main Spindle: A2-8 Sub Spindle: A2-5	JIS A2-8
Hole through spindle	mm	88 (76)	88 (76)	Main Spindle: 88 Sub Spindle: 56	102
Min. indexing degree		0.001°	0.001°	0.001°	0.001°
Spindle bearing inner diameter	mm	130	130	130 90	160
Chuck size	inch	10"	10"	10" 6"	12"
No. of tools	set	BMT60, 12	BMT60, 12	BMT60, 12	BMT60, 12
Shank height for square tool	mm	25	25	25	25
Shank diameter for boring bar	mm	40 (50)	40 (50)	40 (50)	40 (50)
Live tooling diameter	mm	20 (26)	20 (26)	20 (26)	20 (26)
Turret indexing time	sec	0.25	0.25	0.25	0.25
Live tooling speed	rpm	3,000	3,000	3,000	3,000
Rapid traverse rate	mm/min	X, Z: 30,000 Y: 10,000 E: 7,000 C: 80 rpm	X, Z: 30,000 Y: None E: 7,000 C: 80 rpm	X, Z, E: 30,000 Y: 10,000 C: 80 rpm	X, Z: 30,000 Y: 10,000 E: 7,000 C: 80 rpm
Tailstock travel	mm	734	734	734	734
Tailstock quill diameter	mm	80	80	-	80
Tailstock quill inside taper		Live Center (MT5)	Live Center (MT5)	-	MT-5
Spindle motor	kW	13 / 22	13 / 22	13 / 22 7.5 / 11	22 / 30
Live tooling motor	kW	7	7	7	7
Servo motors (X / Y / Z / E)	kW	4 / 4 / 4 / 3	4 / None / 4 / 3	4 / 4 / 4 / 3	4 / 4 / 4 / 3
Power capacity	KVA	50	45	50	50
Coolant tank capacity	ℓ	265	265	265	265
Floor space	mm	3,600 x 1,950	3,600 x 1,950	3,600 x 1,950	3750 x 1950
Machine height	mm	2,190	2,190	2,190	2,190
Machine weight	kg	6,200	6,000	6,500	6,700

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MODEL	UNIT	FVT450	FVT600(MC)	FVT800	FVT1000(MC)	FVT1600
Max. swing diameter	mm	650	710	900	1,100	2,000
Swing over saddle	mm	510	510(500)	650	780	-
Max. turning diameter	mm	460	600(530)	800	1,000	2,000
Max. turning length	mm	500	650(585)	760	850	1,250
Work table diameter	mm	-	-	-	-	1,600
Max. workpiece weight	kg	-	-	-	-	8,000
X axis travel	mm	250	305(270)	425	540	1,160
Z axis travel	mm	500	650	760	850	900
W axis travel	mm	-	-	-	-	600
W-axis positioning step(pitch 200mm)		-	-	-	-	4
Rapid traverse rate X-axis	min	24,000	20,000	20,000	20,000	12,000
Rapid traverse rate Z-axis	min	24,000	24,000	20,000	20,000	10,000
Servo motors(X/Z)	kW	3/4	3/4	4/7	4/7	9/7
Spindle nose	type	A2-8	A2-11	A2-11	A2-15	-
Spindle speed	rpm	2,500	2,000	2,000	1,500	2-250
Chuck size	mm	305	381	450	810	-
Through spindle hole dia	mm	57	57	70	90	-
Spindle bearing inner diameter	mm	130	140	160	200	-
Spindle motor	kW	αP40i 18.5/22	αP40i 18.5/22	αP50i 22/30	α40i+ZF 37/45	α40i+gear box 37/45
Ram cross section	mm	-	-	-	-	220X220
ATC	type	Turret	Turret(BMT65)	Turret	Turret (BMT85)	Carousel
No. of tools	set	8(12)	8(12)	12	12	12
Shank height for square tool	mm	□32(25)	□32(25)	□32	□32	□32
Shank diameter for boring bar	mm	∅50	∅50	∅60	∅80	-
Max. rotary tool speed	rpm	-	4,000(MC)	-	3,000(MC)	-
Rotary tool drive motor	kW	-	α3i 3.7/5.5(MC)	-	α8i 7.5/11(MC)	-
Type of tool shank		-	-	-	-	7/24# BT50
Max. tool length	mm	-	-	-	-	450
Max. tool weight	kg	-	-	-	-	50
Turret indexing time (adjacent tool)	sec	0.6	0.6	0.2	0.2	40
Turret indexing time (180 deg)	sec	1.85	1.85	1	1	40
Fanuc		0i TF	0i TF	0i TF	0i TF	0i TF
Machine height	mm	3,300	3,450	3,750	3,550	5,810
Floor space	mm	3,400X1,600	3,400X1,800	4,055X2,210	4,010X2,450	5,235X4,280
Machine weight	kg	7,000	9,000	15,000	18,000	23,500

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FTC series

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FVP

series

VERTICAL
MACHINING CENTER



FVP-800(A) / FVP-1000(A) / FVP-1300(A) / FV-1500 A / FV-1600(A)

MODEL	UNIT	FVP-800(A)	FVP-1000(A)	FVP-1300(A)	FV-1500 A	FV-1600(A)
X-axis travel	mm	800	1,020	1,300	1,525	1,600
Y-axis travel	mm	500	610	760	800	
Z-axis travel	mm	505	560	650	800	
Spindle nose to table surface	mm	100 ~ 605	80 ~ 585	125 ~ 685	150 ~ 800	100 ~ 900
Spindle center to column surface	mm	510	640	810	850	
Table dimension	mm	950 x 425	1,150 x 475	1,420 x 600	1,700 x 750	1,680 x 800
T-slots (W x No. x P)	mm	18 x 3 x 100	18 x 4 x 100	18 x 5 x 100	22 x 5 x 125	18 x 6 x 125
Max. loading weight	kg	800	1,500	1,000		
Spindle speed	rpm	10,000	6,000	8,000		
Spindle taper	type	7/24 Taper No.40	7/24 Taper No.50	7/24 Taper No.40		
Spindle motor	kW	7.5 / 11	11 / 15	9 / 11		
Rapid traverse rate (X/Y/Z-axis)	m/min	32 / 24 / 24	15 / 15 / 12	18 / 18 / 15		
Cutting feedrate	m/min	15	10			
Tool changing time (tool to tool) Arm Type	sec./Hz	1.7sec / 60Hz	3.5sec / 60Hz	1.7sec / 60Hz		
Tool changing time (tool to tool) Carrousel Type	sec./Hz	7sec / 60Hz	-	7sec / 60Hz		
Tool changer	type	Carrousel (Arm type)	(Arm type)	Carrousel (Arm type)		
No. of tools	set	22 / (24)				
Pull stud	type	P-40T (45°)	P-50T (45°)	P-40T (45°)		
Max. tool weight	kg	7	15	7		
Max. tool length	mm	250	350	300		
Max. tool diameter	mm	Ø80	Ø100	Ø80		
Max. tool diameter (no adjacent tool)	mm	Ø150	Ø200	Ø150		
Floor space	mm	2,435 x 2,350	2,800 x 2,350	3,550 x 2,370	3,720 x 3,070	4,300 x 3,050
Machine weight	kg	4,850	4,950	7,100	11,500	11,000
Max. machine height	mm	2,795	2,665	3,200	3,188	
Power capacity	KVA	25	20			
Air source	bar	6 ~ 8				

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VMP

series

VERTICAL
MACHINING CENTER



VMP-23(A) / VMP-23Aapc / VMP-30(A) / VMP-32(A) / VMP-32Aapc
VMP-40(A) / VM-45S(A) / VMP-45(A) / VMP-50(A) / VMP-65(A)

MODEL	UNIT	VMP-23(A)	VMP-23Aapc	VMP-30(A)	VMP-32(A)	VMP-40(A)	VM-45S(A)	VMP-45(A)	VMP-50(A)	VMP-65(A)	
								BT40 BT50	BT40 BT50	BT40	
X - axis travel	mm	580	760	820	1,020	1,100	1,300	1,650			
Y - axis travel	mm	420	520	700	610	800					
Z - axis travel	mm	510	600	800							
Spindle nose to table surface	mm	80 ~ 590	135 ~ 645	80 ~ 590	100 ~ 605	80 ~ 585	200 ~ 800	135 ~ 735	120 ~ 720	70~870	
Spindle center to column surface	mm	455	560	770	660	850					
Table surface to floor	mm	820	915	820	920	940	950	960	975	1,080	
Table center to column surface	mm	245 ~ 665	300 ~ 820	420 ~ 1,120	355 ~ 965	450~1,250					
Table dimensions	mm	420 x 650	410 x 580	420 x 890	520 x 950	520 x 1,150	1,300 x 700	1,200 x 600	1,420 x 600	1,700x800	
Max.loading weight (WxNo.xP)	kg	300	120	300	800	1,000	1,500				
T - slot	mm	14 x 4 x 100	35-M12 x P1.75	14mm x 4 x 100	18 x 5 x 100	18 x 5 x 125	18 x 5 x 100	18x6x125			
Spindle speed	rpm	10,000	10,000	4,000	10,000	4,000	10,000	4,000	10,000		
Spindle taper	type	7/24 taper No.40	7/24 taper No.40	7/24 taper No.40	7/24 taper No.40	7/24 taper No.40	7/24 taper No.40	7/24 taper No.40	7/24 taper No.40	7/24 taper No.40	
Spindle motor	kW	7.5 / 11	6 / 11	7.5/11	15/18.5						
X - axis rapid traverse rate	m/min	36	40	24	36						
Y - axis rapid traverse rate	m/min	36	40	24	36						
Z - axis rapid traverse rate	m/min	36	30	15	24						
Tool changing time (tool-to-tool)	Carrousel	7 sec / 60 Hz, 7.1 sec / 50 Hz					7 sec (NO.40)	7 sec / 60 Hz, 7.1 sec / 50 Hz			
	Arm	1.7 sec / 60 Hz, 2.0 sec / 50 Hz					1.7 sec (NO.40)	1.7 sec / 60 Hz, 2.0 sec / 50 Hz			
Tool changer	type	Carrousel (Arm type)	(Arm type)	Carrousel (Arm type)							
No. of tools	set	18 (20)	20	18 (20)	22 (24)	24	22(24)				
Pull stud	type	P-40T (45°)					P-40T (45°)	P-50T (45°)	P-40T (45°)	P-50T (45°)	P-40T(45°)
Max. tool weight	kg	7	8	8	15	8	15	8	15	8	
Max. tool length	mm	250	300	300	350	300	350	300	350	300	
Max. tool diameter	mm	Ø80					Ø80	Ø100	Ø80	Ø100	Ø80
Max. Tool diameter (no adjacent tool)	mm	Ø130					Ø150	Ø150	Ø200	Ø150	Ø200
Floor space	mm	1,900 x 2,355	1,900 x 2,730	2,100 x 2,355	2,905 x 2,260	3,040 x 2,260	3,440 x 2,860	3,180 x 2,800	3,550 x 2,800	4,400x3,500	
Machine weight	kg	3,000	3,900	3,300	5,800	6,300	9,000	6,800	7,300	11,000	
Max. machine height	mm	2,370	2,520	2,370	2,800	2,800	3,000	2,900	3,300		
Power capacity	KVA	25	35	25	35						
Air source	bar	6 ~ 8	6 ~ 8								

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- FTC series
- FT series
- HT series
- FVT series
- FVP series**
- VMP series**
- QMP series
- HV series
- NBP series
- VB series
- EH series
- U series
- FMH series
- MT series
- TV series
- SVW series
- SDM/SDL series
- SBM series
- SHM series
- SHB series

QMP series

VERTICAL MACHINING CENTER QUICK MILL



QMP-23A / QMP-23Aapc / QMP-30A / QMP-32A / QMP-32Aapc / QMP-40A

HV series

VERTICAL MACHINING CENTER HIGH TECH



HV-32A / HV-32Aapc / HV-40A / HV-50A

MODEL	UNIT	QMP-23A(#30)	QMP-23Aapc(#30)	QMP-30A(#30)	QMP-32A	QMP-32Aapc	QMP-40A
X-axis travel	mm	580		760	820	800	1,020
Y-axis travel	mm	420		420		520	
Z-axis travel	mm	510		510		505	
Spindle nose to table surface	mm	80 ~ 590	135 ~ 645	80 ~ 590	130 ~ 635	148 ~ 653	100 ~ 605
Spindle center to column surface	mm		510			560	
Table surface to floor	mm	820	915	820	940	1,025	970
Table center to column surface	mm		245 ~ 665			300 ~ 820	
Table dimension	mm	650 x 420	580 x 410	890 x 420	520 x 950	500 x 700	520 x 1,150
Max. loading weight	kg	300	120	300	800	200	800
T-slot (W x No. x P)	mm	14x4x100	35-M12 x P1.75	14x4x100	18x5x100	35 - M16 x P2.0	18x5x100
Spindle speed	rpm		50 ~ 12,000			10,000	
Spindle taper	type		7 / 24 taper No. 30			7 / 24 taper No. 40	
Spindle motor	kW		3.7 / 5.5			15 / 18.5 (7.5 / 11)	
X-axis rapid traverse rate	m/min		48			48	
Y-axis rapid traverse rate	m/min		48			48	
Z-axis rapid traverse rate	m/min		48			30	
Tool changing time (tool-to-tool)	sec / Hz		1.0 / 60			1.7 / 60	
			1.25 / 50			2.0 / 50	
Tool changer	type		Arm Type			Arm Type	
Tool selection	method		Random			Random	
Numbers of tools	set		20			24	
Pull stud	type		P - 30T (45°)			P - 40T (45°)	
Max. tool weight	kg		4			8	
Max. tool length	mm		200			300	
Max. tool diameter	mm		Ø63			Ø80	
Maximum tool diameter (Non-adjacent tool)	mm		Ø100			Ø150	
Floor space	mm	1,900 x 2,355	1,900 x 2,730	2,100 x 2,355	2,905x2,260	3,300 x 3,175	3,040 x 2,260
Machine weight	kg	3,000	3,900	3,300	6,300	7,500	6,600
Max. machine height	mm	2,370	2,520	2,370	2,850	2,980	2,850
Power capacity	KVA		20			35	
Air source	bar		6 ~ 8			6 ~ 8	
APC change time	sec	---	6	---	---	10	---
Pallet change		---	Rotary	---	---	Rotary	---

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MODEL	UNIT	HV-32A	HV-32Aapc	HV-40A	HV-50A
X - axis travel	mm	800	800	1,000	1,300
Y - axis travel	mm	520	520	520	610
Z - axis travel	mm	505	505	505	600
Spindle nose to table surface	mm	130 ~ 635	148 ~ 653	100 ~ 605	70 ~ 670
Spindle center to column surface	mm	560	560	560	660
Table surface to floor	mm	940	1,025	970	1025
Table center to column surface	mm	300 ~ 820	300 ~ 820	300 ~ 820	355 ~ 965
Table dimensions	mm	950 x 520	500 x 700	1,150 x 520	1420 x 600
Maximum loading weight	kg	800	200	800	1000
T - slot (W x No. x P)	mm	18 x 5 x 100	35-M16 x P2.0	18 x 5 x 100	18 x 5 x 100
Spindle speed	rpm	10,000	10,000	10,000	10,000
Spindle taper	type	7/24 taper No.40	7/24 taper No.40	7/24 taper No.40	7/24 taper No.40
Spindle motor	kW	15 / 18.5	15 / 18.5	15 / 18.5	15 / 18.5
X - axis rapid traverse rate	m/min	60	60	60	48
Y - axis rapid traverse rate	m/min	60	60	60	48
Z - axis rapid traverse rate	m/min	30	30	30	24
Tool changer	type	Arm Type	Arm Type	Arm Type	Arm Type
No. of tools	set	24	24	24	24
Pull stud	degree	P-40T (45°)	P-40T (45°)	P-40T (45°)	P-40T (45°)
Max. tool weight	kg	8	8	8	8
Max. tool length	mm	300	300	300	300
Max. tool diameter	mm	80	80	80	80
Max. tool diam. (No Adjacent tool)	mm	150	150	150	150
Tool changing time (Tool-to- tool)	sec (kg)	1.7 (6)	1.7 (6)	1.7 (6)	1.9 (6)
Floor space	mm	2,905 x 2,260	3,300 x 3,175	3,040 x 2,260	3550 x 2750
Machine weight	kg	6,850	8,050	7,150	7300
Max. machine height	mm	2,850	2,980	2,850	2900
Coolant tank capacity	ℓ	300	270	300	310
Power capacity	KVA	35	35	35	35

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NBP series

VERTICAL MACHINING CENTER BOX WAY



NBP / 1000(A) / 1100(A) / 1300(A)

VB series

VERTICAL MACHINING CENTER BOX WAY



VB-1400(A) / 1650(A) / 1900A / 2200A

* Gearhead

MODEL	UNIT	NBP-1000(A)		NBP-1100(A)		NBP-1300(A)	
		BT-40	BT-50	BT-40	BT-50	BT-40	BT-50
X axis travel	mm	1,000		1,100		1,300	
Y axis travel	mm	610		610		610	
Z axis travel	mm	600		600		600	
Spindle nose to table surface	mm	110 ~ 710		125 ~ 725		125 ~ 725	
Spindle center to column surface	mm	660		660		660	
Table surface to floor	mm	985		860		860	
Table center to column surface	mm	355 ~ 965		355 ~ 965		355 ~ 965	
Table dimension	mm	1,150 x 600		1,300 x 600		1,500 x 600	
Max. loadind weight	kg	1,000		1,300		1,300	
T-slot (W x No. x P)	mm	18 x 5 x 100		18 x 5 x 100		18 x 5 x 100	
Spindle speed	rpm	10,000(*8000)	4,000(*8000)	10,000(*8000)	4,000(*8000)	10,000	4,000
Spindle nose	type	7/24 Taper No.40	7/24 Taper No.50	7/24 Taper No.40	7/24 Taper No.50	7/24 Taper No.40	7/24 Taper No.50
Spindle diameter	mm	∅ 70(*∅85)	∅ 100(*∅85)	∅ 70(*∅85)	∅ 100(*∅85)	∅ 70	∅ 100
Spindle motor	kW	7.5 / 11	15 / 18.5	7.5 / 11	15 / 18.5	7.5 / 11	15 / 18.5
Rapid traverse X axis	m/min	24		24		24	
Rapid traverse Y axis	m/min	24		24		24	
Rapid traverse Z axis	m/min	24		24		24	
Tool changer	type	Carrousel(Arm Type)		Carrousel(Arm Type)		Carrousel(Arm Type)	
No.of tools	set	22(24)	(24)	22(24)	(24)	22(24)	(24)
Pull stud	type	P-40T(45°)	P-50T(45°)	P-40T(45°)	P-50T(45°)	P-40T(45°)	P-50T(45°)
Max. tool weight	kg	8	15	8	15	8	15
Max. tool length	mm	300	350	300	350	300	350
Max. tool diameter	mm	∅ 80	∅ 100	∅ 80	∅ 100	∅ 80	∅ 100
Max. tool diameter(no adjacent tool)	mm	∅ 150	∅ 200	∅ 150	∅ 200	∅ 150	∅ 200
Tool changing time (tool to tool)	carrousel	sec/Hz	7 / 60 7.1 / 50	3.5 / 60 5.5 / 50	7 / 60 7.1 / 50	3.5 / 60 5.5 / 50	7 / 60 7.1 / 50 3.5 / 60 5.5 / 50
	Arm	sec/Hz	1.7 / 60 2.0 / 50	1.7 / 60 2.0 / 50	1.7 / 60 2.0 / 50	1.7 / 60 2.0 / 50	1.7 / 60 2.0 / 50
Floor space	mm	3,290 x 2,290		3,410 x 2,685		3,650 x 2,740	
Machine weight	kg	7,000		7,500		8,000	
Max. machine height	mm	2,900 (*3,030)	3,135 (*3,030)	2,700(*2,930)	3,035(*2,930)	2,700(*2,930)	3,035(*2930)
Power capacity	KVA	35		35		35	
Air source	bar	6 ~ 8		6 ~ 8		6 ~ 8	

*Specifications are subject to change without prior notice.

* Gearhead

MODEL	UNIT	VB-1400(A)		VB-1650(A)		VB-1900A		VB-2200A		
		X-axis travel	mm	1,400		1,650		1,900		2,200
Y-axis travel	mm	800(4 way)		800(4 way)		860(4 way)		960(6 way)		
Z-axis travel	mm	700		700		800		800		
Spindle nose to table Surface	mm	145~845		145~845		235~1,035		235~1,035		
Spindle center to column surface	mm	850		850		950		1,050		
Table dimension	mm	1,650x800		1,900x800		2,100x860		2,400x960		
T-slot (W x No. x P)	mm	22x6x125		22x6x125		22x6x125		22x6x160		
Max. loading weight	kg	1,500		1,800		2,200		2,700		
Spindle speed	rpm	4,000(OPT:6,000) (*6,000)	8,000	4,000(OPT:6,000) (*6,000)	8,000	4,000(OPT:6,000) (*6,000)		4,000(OPT:6,000) (*6,000)		
Spindle taper	type	7/24 Taper No.50	7/24 Taper No.40(OPT)	7/24 Taper No.50	7/24 Taper No.40(OPT)	7/24 Taper No.50		7/24 Taper No.50		
Spindle motor	kW	7.5 / 15 (*18.5 / 22)		7.5 / 15 (*18.5 / 22)		11 / 18.5 (*18.5 / 22)		11 / 18.5 (*18.5 / 22)		
Rapid traverse rate (X / Y / Z axis)	m/min	20 / 20 / 18		20 / 20 / 18		15 / 15 / 12		15 / 15 / 12		
Cutting feedrate	m/min	15		15		12		12		
Tool changing time (tool-to-tool)	Arm type	sec / Hz	3.5 / 60	1.7 / 60	3.5 / 60	1.7 / 60	3.5 / 60		3.5 / 60	
	Carrousel type	sec / Hz	9 / 60	8 / 60	9 / 60	8 / 60	-		-	
Tool changer	type	Arm type (Carrousel type)				Arm type				
No. of tools	set	24 / (20)	24 / (22)	24 / (20)	24 / (22)	32 (OPT:40)		32 (OPT:40)		
Pull stud	type	P-50T(45°)	P-40T(45°)	P-50T(45°)	P-40T(45°)	P-50T(45°)		P-50T(45°)		
Max. tool weight	kg	15 / (15)	8 / (6)	15 / (15)	8 / (6)	15		15		
Max. tool length	mm	300	250	300	250	300		300		
Max. tool diameter	mm	∅100	∅80	∅100	∅80	∅100		∅100		
Max. tool weight (no adjacent tool)	mm	∅200	∅150	∅200	∅150	∅200		∅200		
Floor space	mm	4,665x3,175		4,790x3,175		4,900x3,947		5,770x3,997		
Machine weight	kg	12,000		13,000		19,000		22,000		
Max. machine height	mm	3,300		3,300		3,505		3,505		
Power capacity	KVA	35		35		35		35		
Air source	bar	6~8		6~8		6~8		6~8		

*Specifications are subject to change without prior notice.

- FTC series
- FT series
- HT series
- FVT series
- FVP series
- VMP series
- QMP series
- HV series
- NBP series
- VB series
- EH series
- U series
- FMH series
- MT series
- TV series
- SVW series
- SDM/SDL series
- SBM series
- SHM series
- SHB series

EH series

HORIZONTAL MACHINING CENTER
HIGH TECH



EH-320 / EH-320APC / EH-500

U series

5-AXIS VERTICAL MACHINING CENTER



U-600 / U-800

MODEL	UNIT	EH-320	EH-500
X-axis travel	mm	300	750
Y-axis travel	mm	320	550
Z-axis travel	mm	270	550
A-axis rotation angle	degree	-	-
B-axis rotation angle	degree	360	360
Spindle center to table surface	mm	50~320	50 ~ 700
Spindle nose to table center	mm	120~390	200 ~ 700
Table surface to floor	mm	1,160	1,245
Table dimension	mm	350 / APC (320 x 320)	500 x 500
Max. loading weight	kg	300	600
Screw specifications	type	24-M12 x P1.75	24-M16 x P2.0
Min Indexing angle	degree	90°(4dposition)/1°(1/1000°)	0.001
Spindle speed	rpm	10,000/12,000(OPT)	10,000
Spindle nose taper	type	BT-40	HSK-A63
Spindle motor	kw	5.5 / 7.5	Built in 22 kw
Rapid traverser rate X Axis	m/min	48	48
Rapid traverser rate Y Axis	m/min	48	48
Rapid traverser rate Z Axis	m/min	48	48
Cutting feedrate	m/min	20	20
No. of tools	set	16	60
Pull stud	type	P40T-1	HSK-A63
Max. tool weight	kg	8	8
Max. tool length	mm	220	300
Max. tool diameter	mm	Ø 70	Ø85
Max. tool diameter (No adjacent tool)	mm	120	Ø140
Tool changing time (Tool to tool)	sec (Hz)	1.9 sec(60Hz)	2 sec (60 HZ)
Number of pallets	set	2	2
Method of pallet change	type	Rotary	Rotary
Pallet change time	sec	8	8
Floor space	mm	1,600 x 3,500	3,500 x 5,000
Machine weight	kg	4,500	22,000
Max. machine height	mm	2,500	3,200
Power capacity	kVA	35	80
Air source	bar	6~8(85 psi)	6~8 (85 psi)

*Specifications are subject to change without prior notice.

MODEL	UNIT	U-600	U-800
A/C axis tilting rotary table		Worm Shaft and gear	DDM
X axis travel	mm	460	800
Y axis travel	mm	520	935
Z axis travel	mm	400	640
A axis rotation angle	degree	+40° ~ -110°	+120° ~ -120°
C axis rotation angle	degree	360°	360°
Spindle nose to table surface	mm	150 ~ 550 ± 5	85 ± 5~725 ± 5
Table surface to floor	mm	750 ± 5	900 ± 5
Table dimensions	mm	Ø600	Ø800
Spindle hole diameter	mm	Ø60H7	Ø60H7
T-slots	mm	5 x 14	7 x 14
Max. loading weight	kg	250	1,200
Working torque	N-m	3,108	3,340
Max. rotation speed	A axis(Tilting axis)	613	1,230
	C axis(Rotary axis)	25	50
Min. indexing unit	A axis(Tilting axis)	25	100
Positioning accuracy	C axis(Rotary axis)	0.001	± 5"
	Spindle speed	rpm	Direct drive type 10,000 (OPT12,000/ 15,000)
Spindle taper	type	7 / 24 Taper No 40(BT-40)	7 / 24 Taper No.40
Spindle motor	Kw	7.5 / 11	20 / 37
X axis rapid traverse rate	m/min	30	48
Y axis rapid traverse rate	m/min	30	48
Z axis rapid traverse rate	m/min	30	48
Tool changing time (Tool to tool)	dec/Hz	7 / 60 Hz (2.5 / 60Hz)	7 / 60 Hz (2.5 / 60Hz)
Tool changer	type	Arm type	Ylock type
No. of tools	set	24(30,40,60)	32(48,60)(*2)
Pull stud	type	P-40T (45°)	P-40T (45°)
Max. tool weight	kg	7	7
Max. tool length	mm	280	300
Max. tool diameter	mm	Ø80	Ø75
Max. tool diameter(No adjacent tool)	mm	Ø150	Ø125
Floor space	mm	3,850 x 2,350	3,220 x 3,900
Machine weight	kg	8,145	18,000
Max. machine height	mm	3,000	3,600
Power capacity	KVA	35	90
Air source	bar	6 ~ 8	6 ~ 8

*Specifications are subject to change without prior notice.

FTC series

FT series

HT series

FVT series

FVP series

VMP series

QMP series

HV series

NBP series

VB series

EH series

U series

FMH series

MT series

TV series

SVW series

SDM/SDL series

SBM series

SHM series

SHB series

FMH series

HORIZONTAL MACHINING CENTER



FMH-400 / FMH-500 / FMH-630 / FMH-800

MT



MT-1000

MODEL	UNIT	FMH-400	FMH-500 No.40	FMH-500 No.50 (DDS)	FMH-500 No.50 (BELT)	FMH-500Premium No.40	FMH-630	FMH-800
X-axis travel	mm	610	762	730		762	1,000	1,300
Y-axis travel	mm	560	710		710	850	850	1,020
Z-axis travel	mm	560	710		800	850	850	1,100
Spindle center to table surface	mm	50 ~ 610	50 ~ 760		50~760	50 ~ 900	100 ~ 1,120	
Spindle nose to table center	mm	130 ~ 690	150 ~ 860	100 ~ 810		100~900	200 ~ 1,050	150 ~ 1,250
Table surface to floor	mm	1,140	1,200		1,050	1,300	1,475	
Table dimension	mm	400 x 400	500 x 500		500 x 500	630 x 630	800 x 800	
Max. loading weight	kg	400	1' : 500 kg / 0.001' : 600 kg			1,200	2,000	
Screw specifications	type	M16 x P2	M16 x P2		M16XP2	M16 x P2	M16 x P2	
Min. indexing degree	deg.	1' /OPT: 0.001'	1' /OPT: 0.001'		1' /OPT: 0.001'	1' /OPT: 0.001'	1' /OPT: 0.001' /5'	
Spindle speed	rpm	8,000 / 10,000 (OPT)	8,000 / 10,000 (OPT)	6,000 / 8,000 (OPT)		10,000 / 15,000(OPT)	6,000 / 8,000 (OPT)	6,000 / 8,000 (OPT)
Spindle taper	type	7/24 Taper No.40	7/24 Taper No.40	7/24 Taper No.50		7/24 Taper no.40	7/24 Taper No.50	7/24 Taper No.50
Spindle diameter	mm	Ø85	Ø85	Ø90	Ø100	Ø85	Ø100	Ø110
Spindle motor	kW	(Built in)7.5 / 11	(Built in)7.5 / 11	(DDS)15 / 18.5	(Built in)7.5/15	15/18.5(DDS) 18.5/22(Built in)(OPT)	11 / 18.5	22 / 26
Rapid traverse X-axis	m/min	30(60)	30(48)		48(60)	24(42/48)	42	
Rapid traverse Y-axis	m/min	30(60)	30(48)		48(60)	24(42/48)	42	
Rapid traverse Z-axis	m/min	30(60)	30(48)		48(60)	24(42/48)	42	
Cutting feedrate	m/min	20	20		20	15(20)	20	
No. of tools	set	40:60/120 (OPT)	40: 60/90 (OPT)		40: 60/90(OPT)	40:60/120(OPT)	40: 60/90(OPT)	60 : 90/120 (OPT)
Pull stud (degree)	type	P40T-1	P40T-1	P50T-1	P50T-1	P40T-1	P50T-1	P50T-1
Max. tool weight	kg	8	8	20	20	12	20	0-15/15-25
Max. tool length	mm	300	300	500	500	550	500	500
Max. tool diameter	mm	Ø85	Ø85	Ø125	Ø125	Ø95	Ø125	Ø125
Max. tool diameter (no adjacent tool)	mm	Ø140	Ø140	Ø220	Ø220	Ø190	Ø220	Ø250
Tool changing time (tool to tool)	sec (Hz)	2 (60)	2 (60)	8 (60)	8 (60)	1.3(60)	8 (60)	3.5 (60) / 4.7(60) (Heavy Tool)
Number of pallets	set	2	2		2	2	2	2
Method of pallet change	type	Rotary	Rotary		Rotary	Rotary	Rotary	Rotary
Pallet change time	sec (Hz)	8 (60)	8 (60)		8 (60)	10 (60)	20 (60)	
Floor space	mm	2,610 x 4,750	2,680 x 5,120	3,210 x 5,120	3,210x5,120	2,760 x 5,120	4,130 x 6,624	4,900 x 7,745
Machine weight (net)	kg	8,500	13,500	15,000	16,000	14,000	19,000	30,000
Max. machine height	mm	2,730	2,915	3,280	3,280	2,915	3,661	4,060
Power capacity	KVA	40	40		40	65	70	
Air source	bar	6~8 (85 psi)	6~8 (85 psi)		6~8 (85 psi)	6~8 (85 psi)	6~8 (85 psi)	6~8 bar (85 psi)

*Heavy tool definition: over 15kg tools. *Specifications are subject to change without prior notice.

MODEL	UNIT	MT-1000
B/C-axes Tiling Rotary table		DDM Drive
X-axis travel	mm	1,200
Y-axis travel	mm	1,230
Z-axis travel	mm	1,000
B-axis rotation angle	degree	+180°~30°
C-axis rotation angle	degree	360°
Spindle nose to table surface	mm	95-1,095
Table surface to floor	mm	1,250±5
Table dimensions	mm	1,000 x 1,000 (Ø1,000)
Spindle hold diameter	mm	Ø75H7
T-slot	mm	22H7
Max. table load	Kg	2,000
Max. torque	B-axis (Tilting axis) C-axis (Rotary axis) N-m	3,530
Max. rotation speed	B-axis (Tilting axis) C-axis (Rotary axis) min ⁻¹	25 500
Min. indexing unit	degree	0.001
Max. diameter of workpiece	mm	Ø1,200 X 1,000(H)
Spindle speed	min ⁻¹	8,000 HASK-A100
Spindle taper	-	19/28
Spindle power	Kw	
X-axis rapid traverse	m/min	50
Y-axis rapid traverse	m/min	50
Z-axis rapid traverse	m/min	50
Tool changing time (tool to tool)	sec	4/(60Hz)
Tool changer	-	Arm Type
No. of tools	-	60
Max. tool weight	Kg	20
Max. tool length	mm	400
Max. tool diameter	mm	Ø125
Max. tool diameter (no adjacent tool)	mm	Ø245
AIR SOURCE	bar	6-8

*Heavy tool definition: over 15kg tools. *Specifications are subject to change without prior notice.

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- SBM series
- SHM series
- SHB series

TV

series
DRILLING &
TAPPING CENTER



TV-510 / 510A / TC-20α

SVW

series
DOUBLE COLUMN
MACHINING CENTER



SVW-2217~SVW-4223

MODEL	UNIT	TV-510A (Arm Type ATC)	TV-510(Turret Type ATC)	TC-20α
X-axis travel	mm	510	510	510
Y-axis travel	mm	400	400	400
Z-axis travel	mm	400	300	300
Spindle nose to table surface	mm	170 ~ 570	170 ~ 470	174 ~ 474
Spindle center to column surface	mm	430	430	455
Table dimension	mm	650 x 400	650 x 400	600 x 400
Max. loading weight	kg	250 kg (200 kg for 60 m/min)	250 kg (200 kg for 60 m/min)	250(200 kg for 60 m/min)
T-slot	mm	14 x 3 x 125	14 x 3 x 125	14 x 3 x 125
Spindle speed	rpm	10,000 (DDS:12,000 & 15,000)	10,000 (DDS:12,000 & 15,000)	DDS 12,000
Spindle taper	type	7/24 Taper No.30	7/24 Taper No.30	7/24 Taper No.30
Spindle motor	kW	3.7 / 5.5 (2.2 / 3.7)	3.7 / 5.5 (2.2 / 3.7)	3.7 / 5.5 (2.2 / 3.1)
Rapid traverse X-axis	m/min	36	36	36
Rapid traverse Y-axis	m/min	36	36	36
Rapid traverse Z-axis	m/min	48	48	48
No. of tools	set	20	14	14
Pull stud	type	P-30T (45°)	P-30T (45°)	P-30T(45°)
Max. tool weight	kg	3	3 / 25(total tool weight)	3 / 25(total tool weight)
Max. tool length	mm	200	150	200
Max. tool diameter	mm	Ø63	Ø80	Ø80
Max. tool diam. (no adjacent tool)	mm	Ø100	Ø80	Ø150
Tool changing time (tool-to-tool)	sec (Hz)	1.9 sec (60Hz) 2.2 sec (50Hz)	2.5 sec (60Hz)	1.5 sec(60Hz)
	sec (Hz)	DDS: [1 sec (60Hz) 1.2 sec (50Hz)]	3 sec (50Hz)	1.8 sec(50Hz)
Floor space	mm	1,600 x 2,150	1,600 x 2,125	1,600 x 2,265
Machine weight	kg	2,200	2,200	2,400
Max. machine height	mm	2,350	2,350	2,555
Power capacity	KVA	15	15	15
Air source	bar	6 ~ 8	6 ~ 8	6 ~ 8

*Specifications are subject to change without prior notice.

MODEL	UNIT	SVW-2217	SVW-2817	SVW-2822	SVW-3217	SVW-3222	SVW-3223	SVW-4217	SVW-4222	SVW-4223	
TABLE											
Overall size	mm	2000X1400	2600X1400	2600X1800	3000X1400	3000X1800	3000X2000	4000X1400	4000x1800	4000x2000	
T slots	mm	22									
Max. loading	ton	8	9	11	10	12	12	14	15	15	
TRAVEL											
X axis	mm	2200	2800		3200			4200			
Y axis	mm	1600		2100	1600	2100		1600	2100		
Z axis	mm	800(1000)									
DISTANCE											
Between two columns	mm	1700	1700	2200	1700	2200	2300	1700	2200	2300	
Spindle nose to table top	Z axis 800 mm	240~1040									
	Z axis 1000 mm	240~1240									
SPINDLE											
Speed	rpm	6000(4000)									
Taper		BT/DIN/CAT 50(#40)									
Motor (cont/30min)	kW	15/18.5(22/26)									
ATC											
No. of ATC	tools	24(32/40/60)									
Max. Dia of tool	mm	ø110(with adjacent tool) / ø200(without adjacent tool)									
Max. length of tool	mm	350									
Max. tool weight	kg	18									
FEED RATE											
Rapid feedrate X/Y/Z	m/min	15/15/15			12/15/15						
Cutting feedrate	mm/min	1~10000									
Min. Setting	mm	0.001									
COOLANT & LUBRICATION											
Hydraulic tank volume	L	70									
Lubrication tank volume	L	8									
Coolant tank volume	L	584	680	584	680	584	680	584	680	680	
MISCELLANEOUS											
Machine weight	tons	21	24	26	26	32	35	38	43	45	
Power required	kVA	40									
Compressed air pressure	kg/cm ²	7									
Compressed oil pressure	kg/cm ²	70									
Floor space	Length	mm	6350	7550		8850			10350		
	Width	mm	5000		5500	5000	5500	5700	5000	5500	5700
Controller		FANUC Oi-M (32i-M / 31i-M) MITSUBISHI (M70/M700) · SIEMENS (840DSL/828D) HEIDENHAIN (iTNC 530HSCI)									

*Specifications are subject to change without prior notice.

SDM / SDL

series
DOUBLE COLUMN
MACHINING CENTER



(B): Distance between two columns : 2500mm
3 linear guide ways being mounted on X axis
(SDM-3225B / SDM-4225B / SDM-5225B)

MODEL	UNIT	SDM-2216	SDM-2220	SDM-3216	SDM-3220	SDM-3225	SDM-3225B	SDM-3228	SDM-4216	SDM-4220	SDM-4225	SDM-4225B	SDM-4228	SDM-4232	SDM-5220	SDM-5225	SDM-5225B	SDM-5228	SDM-5232	SDM-5235	SDM-6232	SDM-6235	SDM-7232	SDM-7235		
TABLE																										
Overall size	mm	2000X1400	2000X1700	3000X1400	3000X1700	3000X2000	3000X2200	3000X2500	4000X1400	4000X1700	4000X2000	4000X2200	4000X2500	4000X2900	5000X1700	5000X2000	5000X2200	5000X2500	5000X2900	5000X3000	6000X2900	6000X3000	6000X2900	6000X3000		
T slots	mm	22																								
Max. loading	ton	6	7	9	10	11	12	12	10	12	12	14	14	14	15	15	18	18	20	20	20	24	20	24		
TRAVEL																										
X axis	mm	2200			3200				4200						5200					6200		7200				
Y axis	mm	1400	1800(2400)	1400	1800(2400)	2400(3000)		3300	1400	1800(2400)	2400(3000)		3300	3700	1800(2400)	2400(3000)		3300	3700	4000	3700	4000	3700	4000		
Z axis	mm	750(900/1200)							900(1200)																	
DISTANCE																										
Between two columns	mm	1600	2000	1600	2000	2500	2800	1600	2000	2500	2800	3200	2000	2500	2800	3200	3500	3200	3500	3200	3500	3200	3500			
Spindle nose to table top	mm	1.ISO-50 Standard spindle: 220-970mm (Z = 750mm) / 270-1170mm (Z = 900mm) / 270-1470mm (Z = 1200mm) 2.ISO-50 Long spindle: 70-820mm (Z = 750mm) / 120-1020mm (Z = 900mm) / 120-1320mm (Z = 1200mm) 3.ISO-40 D.D.S. standard spindle: 128-878mm (Z = 750mm) / 178-1078mm (Z = 900mm) / 178-1378mm (Z = 1200mm) 4.ISO-50 D.D.S. standard spindle: 190-940mm (Z = 750mm) / 240-1140mm (Z = 900mm) / 240-1440mm (Z = 1200mm)											1.ISO-50 Standard spindle: 220-970mm (Z = 750mm) / 270-1170mm (Z = 900mm) / 270-1470mm (Z = 1200mm) 2.ISO-50 Long spindle: 70-820mm (Z = 750mm) / 120-1020mm (Z = 900mm) / 120-1320mm (Z = 1200mm) 3.ISO-40 D.D.S. standard spindle: 128-878mm (Z = 750mm) / 178-1078mm (Z = 900mm) / 178-1378mm (Z = 1200mm) 4.ISO-50 D.D.S. standard spindle: 190-940mm (Z = 750mm) / 240-1140mm (Z = 900mm) / 240-1440mm (Z = 1200mm)													
SPINDLE																										
Speed	rpm												4000/6000													
Motor (cont./30min)	kW	FANUC 15/18.5(22/26)/SIEMENS 15/20.5(22/30)/HEIDENHAIN 15/20.5(20/30)											FANUC 15/18.5(22/26)/SIEMENS 15/20.5(22/30)/HEIDENHAIN 15/20.5(20/30)													
Taper													BT/DIN/CAT 50(BT/DIN/CAT 40)													
FEED RATE																										
Rapid feedrate X/Y/Z	mm / min												1 - 5000													
Cutting feedrate	m / min	12 (15) / 12 (15) / 10 (12)											10(15) / 12(15) / 10(12)													
Min. Setting	mm												0.001													
ATC																										
No. of ATC													24(32/40/50/60)													
Max. length of tool	mm												350													
Max. tool weight	kg												18													
Max. Dia of Tool with adjacent tool	mm												φ 110 (with adjacent tool)													
Max. Dia of Tool without adjacent tool	mm												φ 200 (without adjacent tool)													
COOLANT & LUBRICATION																										
Coolant tank volume	L	450	620	450	620	760	840	450	620	760	840	620	760	840	920	980	1060	980	1060	980	1060	980	1060			
Hydraulic tank volume	L	70											80													
Lubrication tank volume	L	8											12.6													
MISCELLANEOUS																										
Machine weight	tons	22	26.5	25.5	29	32	38	40	30.5	34.5	38	42.5	45.5	52	38	43	49	53	55	56	70	72	77	82		
Power required	kVA												50													
Compressed air pressure	kg / cm ²												7													
Compressed oil pressure	kg / cm ²												70													
Controller		FANUC Oi-M(32i-M/31i-M)											MITSUBISHI (M70/M700)				SIEMENS (828D / 840DSL)				HEIDENHAIN (ITNC 530HSCI)					

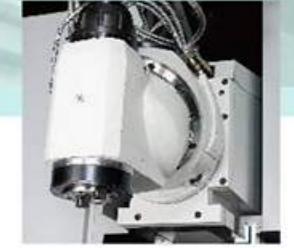
*Specifications are subject to change without prior notice.

- FTC series
- FT series
- HT series
- FVT series
- FVP series
- VMP series
- QMP series
- HV series
- NBP series
- VB series
- EH series
- U series
- FMH series
- MT series
- TV series
- SVW series
- SDM/SDL series
- SBM series
- SHM series
- SHB series

SBM

series

CNC BED TYPE
UNIVERSAL MILLING MACHINE



SBM-2000H / 2500H / 3000H / 3500H

SBM-2000V/2500V/3000V/3500V

MODEL	UNIT	SBM-2000H	SBM-2500H	SBM-3000H	SBM-3500H
TRAVEL					
X-axis travel	mm	2,000	2,500	3,000	3,500
Y-axis travel (Up and Down)	mm	1,200 (1,500)			
Z-axis travel (Forward and Backward)	mm	1,000			
Distance from table top to spindle center	mm	295~1,495 (295~1,795)			
Distance from table center to spindle nose	mm	-801~199			
TABLE					
Overall size	mm	2100×1000	2700×1000	3100×1000	3,600×1000
Max. loading weight	kg	5,000	6,000	7,000	8,000
T-slot	mm	22T×7×125			
Height from floor to table top	mm	1,005			
SPINDLE					
Taper		BT-50			
Speed	rpm	4,000 (6,000)			
Motor (cont/30min)	kW	15/18.5 (22/26)			
FEED RATE					
Rapid traverse X/Y/Z	mm/min	10,000			
Cutting feedrate	mm/min	1~5,000			
Min. Setting	mm	0.001			
MISCELLANEOUS					
Electrical power supply	kVA	50			
Compressed air pressure	kg/cm ² (psi)	6 (85)			
Compressed oil pressure	kg/cm ² (psi)	107 (1,523)			
Compressed air flow rate	L/min	30			
Hydraulic tank volume	L	80			
Lubricant tank volume	L	8			
Coolant tank volume	L	360			
Controller	-	FANUC 32i-M (31i)			
FLOOR SPACE					
Max. machine height	mm	3,530			
Floor space	mm	4,800x5,560	4,800x6,560	4,800x7,560	4,800x8,560
Machine weight	kg	15,000	16,000	18,800	20,000

*Specifications are subject to change without prior notice.

MODEL	UNIT	SBM-2000V	SBM-2500V	SBM-3000V	SBM-3500V
TRAVEL					
X-axis travel	mm	2,000	2,500	3,000	3,500
Y-axis travel (Up and Down)	mm	1,000			
Z-axis travel (Forward and Backward)	mm	1,200 (1,500)			
Distance from table top to spindle center	mm	Horizontal 94~1294 (94~1,544) Vertical 44~1244 (44~1,544)			
Distance from table center to spindle nose	mm	Horizontal -481~519 Vertical -531~469			
TABLE					
Overall size	mm	2100×1000	2700×1000	3100×1000	3,600×1000
Max. loading weight	kg	5,000	6,000	7,000	8,000
T-slot	mm	22T×7×125			
Spindle nose to table top	mm	1,005			
SPINDLE					
Taper		BT-50			
Speed	rpm	3,500 (5,000)			
Motor (cont/30min)	kW	15/18.5 (22/26)			
FEED RATE					
Rapid feedrate X/Y/Z	mm/min	10,000			
Cutting feedrate	mm/min	1~5,000			
Min. Setting	mm	0.001			
MISCELLANEOUS					
Electrical power supply	kVA	50			
Compressed air pressure	kg/cm ² (psi)	6 (85)			
Compressed oil pressure	kg/cm ² (psi)	96 (1,392)			
Hydraulic tank volume	L/min	30			
Hydraulic tank volume	L	80			
Lubricant tank volume	L	8			
Coolant tank volume	L	360			
Controller	-	FANUC 32i-M (31i)			
FLOOR SPACE					
Max. machine height	mm	3,530			
Floor space	mm	4,800x5,560	4,800x6,560	4,800x7,560	4,800x8,560
Machine weight	kg	15,000	16,000	18,800	20,000

*Specifications are subject to change without prior notice.

FTC series

FT series

HT series

FVT series

FVP series

VMP series

QMP series

HV series

NBP series

VB series

EH series

U series

FMH series

MT series

TV series

SVW series

SDM/SDL series

SBM series

SHM series

SHB series

SHM

series

CNC HORIZONTAL BORING & MILLING MACHINE



SHM-630L / 800 / 800L

MODEL	UNIT	SHM-630L	SHM-800L	SHM-800
TABLE				
Overall size	mm	630 x 630(700 x 700 / 700 x 900)	800 x 800(800 x 1,000 / 1,000 x 1,000)	
T slots	mm	20 x5	22 x7	
Max. loading	kg	1,500	3000	
Table surface to floor	mm	1,130	1,190	1,200
Indexing Degree	°		1° / 360	
Clamping Force	kg-m		5,000	
TRAVEL				
X axis	mm	1,400(1,200)	1,500	2000
Y axis	mm	1,150(950)	1,600(1,180)	1,100(1,500)
Z axis	mm	1,000(800)	1,200(1,000)	1,200(1,400)
DISTANCE				
Spindle Nose to Table Center	mm	300~1,300(300~1,100)	225~1,425(225~1,225)	300~1,500(300~1,700)
Spindle Center to Table Top	mm	0~1,150(0~950)	0~1,600(0~1,200)	0~1,100(0~1,500)
SPINDLE				
Taper	mm		BT/DIN/CAT 50	
Speed	rpm		4,000(6,000)	
FEED RATE				
Rapid traverse X/Y/Z	m/min	24/24/24		10/10/10
Cutting feedrate	mm/min		1~5,000	
Min. Setting	mm		0.001	
ACT				
No. of ATC	tool		40(60)	
Max. length of tool	mm		400	
Max. tool weight	kg		35	
Max. Dia of tool	mm		ø125 (with adjacent tool) / -ø245 (without adjacent tool)	
Tool selection			Fixed type	
MOTORS				
Spindle motor	kW		11/15(15/18.5)	
X/Y/Z/B motor	kW	3/3/4/4		4/4/4/4
Lubricator motor	kW	0.025		0.045
MISCELLANEOUS				
Air consumption	kg/cm ²		6	
Power required	kVA		40	
Hydraulic tank volume	L	40		70
Lubrication tank volume	L		4.6	
Coolant tank volume	L	300		400
MACHINE DIMENSION				
Machine outline	mm	4,250 x 5,350 x 3,200	5,300 x 5,100 x 3,300	5,950 x 6,000 x 3,950
Machine weight	kg	12,000	14,000	14,600

*Specifications are subject to change without prior notice.

SHB

series

CNC HORIZONTAL BORING & MILLING MACHINE
(EXTENDABLE SPINDLE)



SHB-11025/11030/11040RS / SHB-11030/11040RM
SHB-13025/13030/13040RS / SHB-13030/13040 RM/RL

		Column Fixed						Column Moving						
MODEL	UNIT	SHB-11020FF	SHB-11025RS	SHB-11030RS	SHB-11040RS	SHB-11030RM	SHB-11040RM	SHB-13025RS	SHB-13030RS	SHB-13040RS	SHB-13030RM	SHB-13040RM	SHB-13030RL	SHB-13040RL
TABLE														
Overall size	mm	1,000x1,200	1,400x1,600(1,600x1,800)			1,800x2,000		1,400x1,600(1,600x1,800)			1,800x2,000		3,200x1,800	
Max. loading	ton	5	7(10)			15(20)		7(10)			15(20)		15(20)	
T-slots	mm	22x9	24x7			28x9		24x7			28x9		28x9	
Height from ground	mm	1,235	1,228			1,440		1,228			1,440		1,440	
B-axis min. increment	°	0.001*	0.001° ~ ±5°											
TRAVEL														
X axis	mm	2,000	2,500	3,000	4,000	3,000	4,000	2,500	3,000	4,000	3,000	4,000	3,000	4,000
Y axis	mm	1,600	1,800(2,000 / 2,300 / 2,500)											
Z axis	mm	1,200(1,400)	1,500(1,700)											
W axis	mm	400	500(700)						700(900)					
Spindle nose to table center	mm	400~1,600	500~2,000(2,200)			785~2,285(2,485)		585~2,085(2,285)			785~2,285(2,485)			
SPINDLE														
W spindle diameter	mm		110						130					
Speed	rpm	5~2,500	3,200						2,700					
Taper	mm		TAPER 7/24											
FEED RATE														
Rapid traverse X/Y/Z	m/min	10 / 10 / 10 / 5												
Cutting feedrate	mm/min	1~5,000												
Motor														
Spindle (cont/30min)	kW	15 / 18.5 (22 / 26)	22 / 26 (30 / 37)											
XYZ/W/B axis feed motor	kW	7 / 7 / 7 / 3 / 7	7 / 7 / 9 / 3 / 7			9 / 7 / 9 / 3 / 7		7 / 7 / 9 / 3 / 7			9 / 7 / 9 / 3 / 7			
ACT														
No. of ATC	tools	40(60)												
Taper	-	BT50(CAT50/DIN50)												
Pull stud	-	MAS403-P50T-1(CAT50/DIN50)												
Tool selection	-	fixed type												
Max. tool diameter(adjacent tool)	mm	ø125												
Max. tool diameter(no adjacent tool)	mm	ø245												
Max. tool weight	kg	35												
Max. length of tool	mm	400												
MISCELLANEOUS														
Power required	kVA	60	60			70		60			70			
Hydraulic tank volume	L	70	110											
Coolant tank volume	L	400	500											
Lubrication tank volume	L	8												
Machine weight	kg	21,000	32,000	33,000	34,000	33,000	34,000	40,000	42,000	46,000	42,000	46,000	47,000	51,000
CNC Controller	-	FANUC / MITSUBISHI / SIEMENS / HEIDENHAIN												
Floor space														
Machine height	mm	4,200	4,125(4,325/4,625/4,825)			4,340(4,540/4,840/5,040)		4,125 (4,325/4,625/4,825)			4,340(4,540/4,840/5,040)			
Machine length	mm	5,565	7,184	7,734	8,834	7,490	9,040	7,184	7,734	8,834	7,490	9,040	9,040	10,140
Machine width	mm	5,975	6,526(6,726)			6,834(6,834)		6,475(6,522)			6,682(6,682)			

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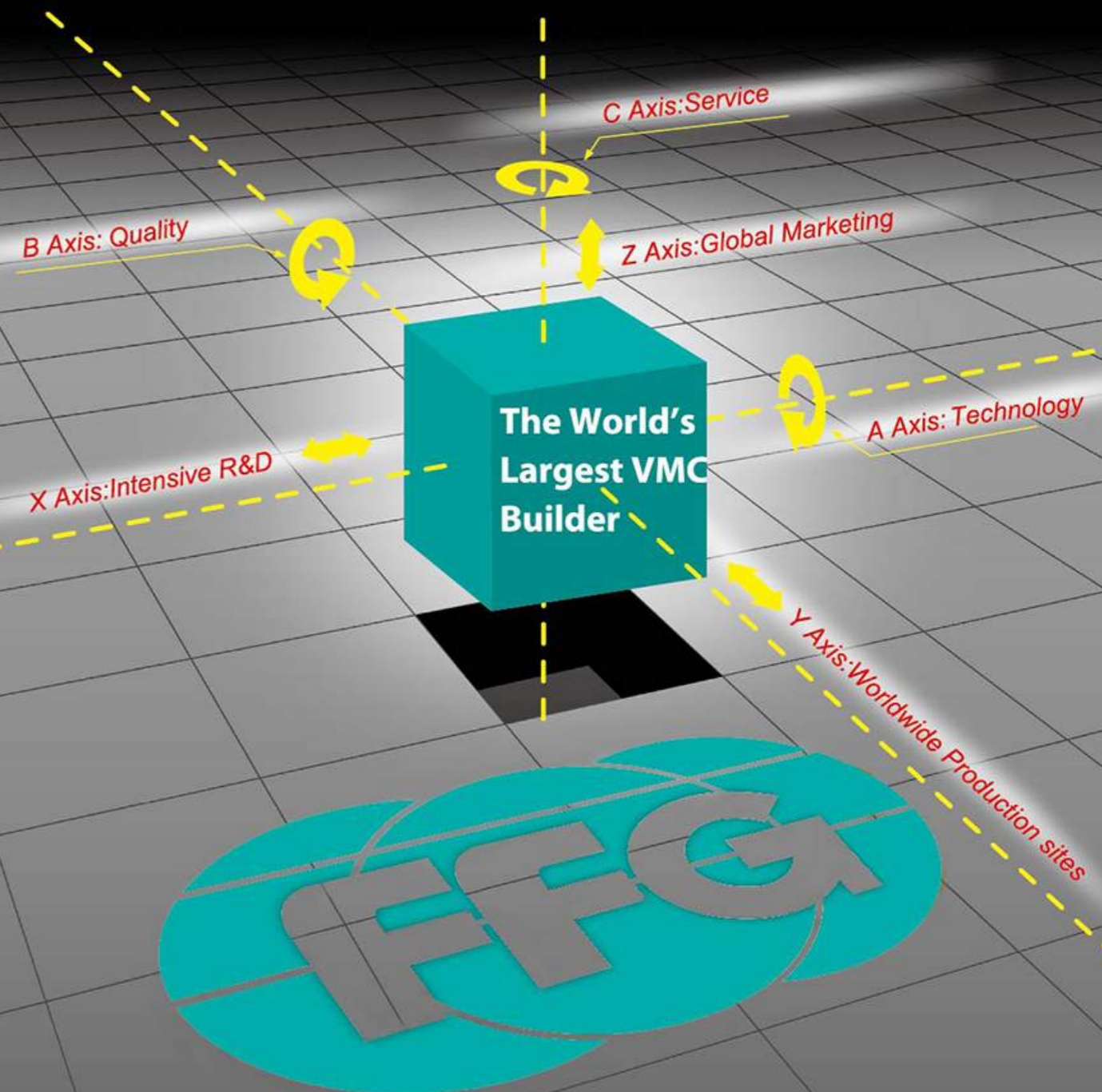
"The Best Quality and Service Machine Tool Manufacturer from Taiwan" – [equipmentnews](#) magazine.



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