KMH

KMH500/630/800

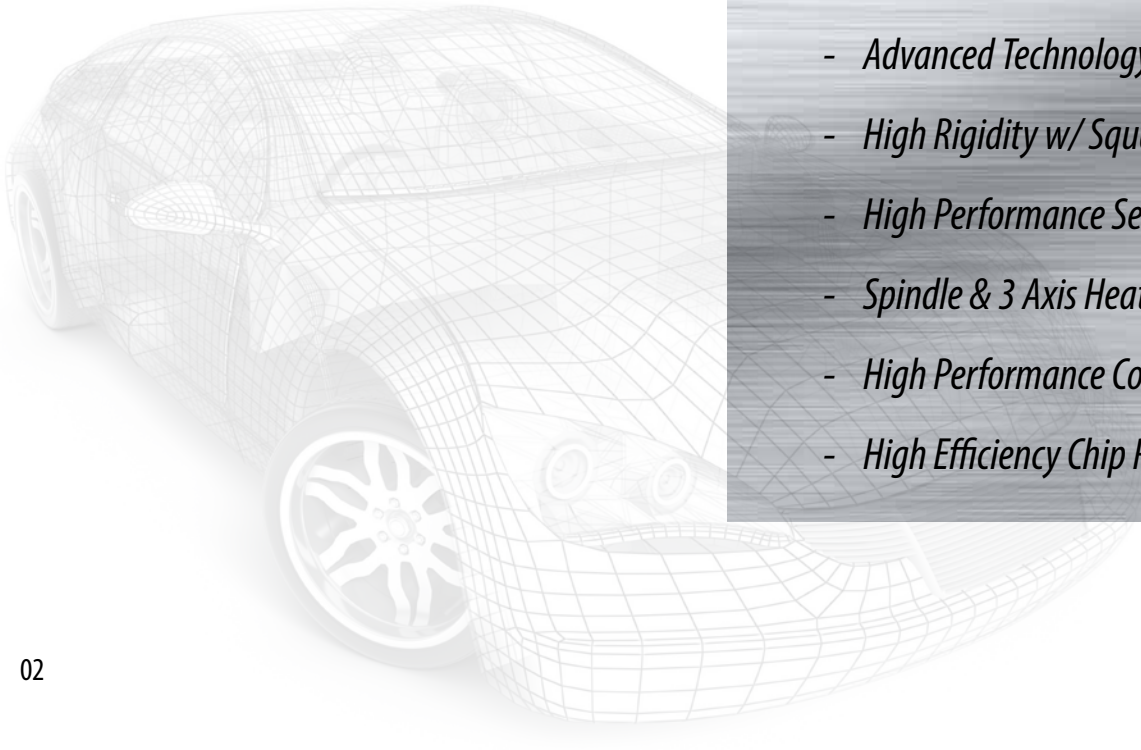
HORIZONTAL MACHINING CENTERS

KIWA | Methods

Index

KMH500/630/800

- *KMH500 Available in 40 + 50 Taper Versions*
- *KMH630/800 Available in 50 Taper*
- *Advanced Technology & Design*
- *High Rigidity w/ Square T Structural Design*
- *High Performance Setup & Maintainability*
- *Spindle & 3 Axis Heat Displacement Control*
- *High Performance Control System & HMI*
- *High Efficiency Chip Removal System*




KIWA Methods
KMH-800

Mechanical Design

Robust and Precision Machine Bed

The major construction parts are based on Meehanite cast iron, which is structurally stable, ensuring permanent machine quality.

The computerized calculation of structural strength and reinforcing ribs is carried out by way of finite element analysis, ensuring high rigidity of the machine.

Mechanical Rigidity

Unique Rib Construction

Wide base and robust structure ensure steady machining against heavy loads.

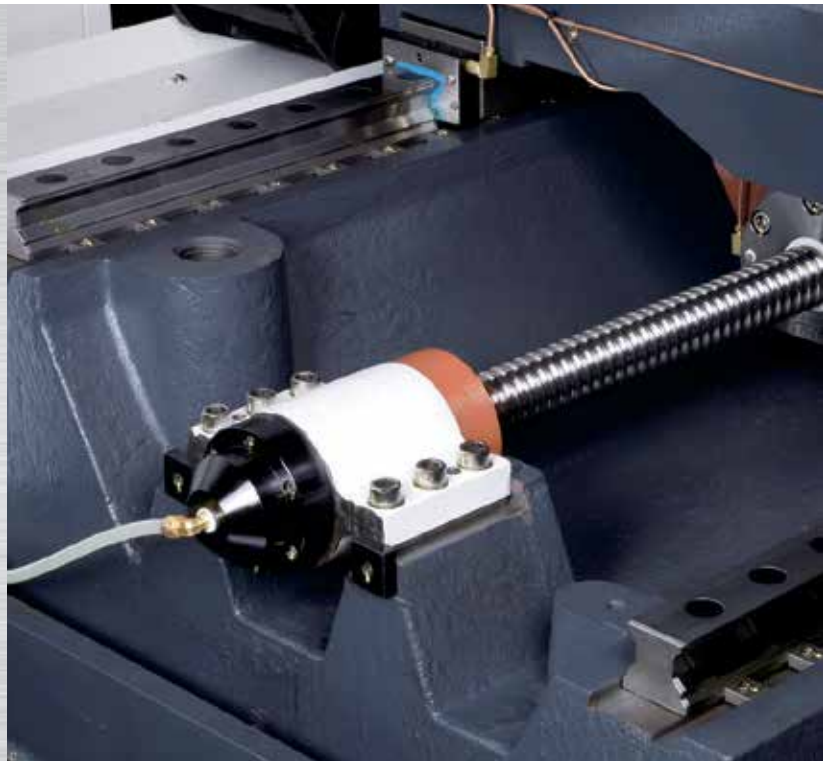
3 Axis Transmission System

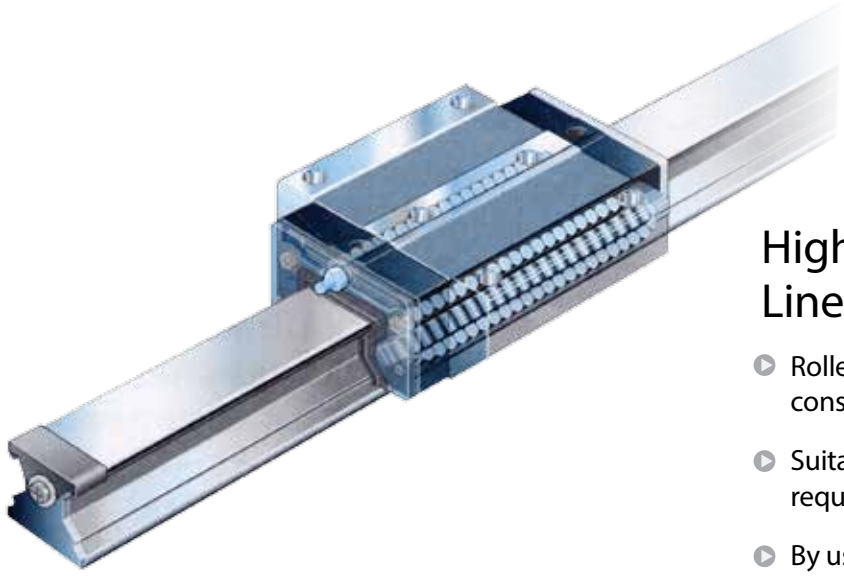
3 Axis Ballscrew System

- The 3-Axis ballscrew employs large diameter ballscrews to enhance transmission rigidity, ensuring repeatability and precise positioning.
- X / Y / Z rapid speed:

36 m/min (LH-500)
32 m/min (LH-630/800)

- Synchronized telescope covers are provided for all 3 axis, eliminating transmission noise and vibration.



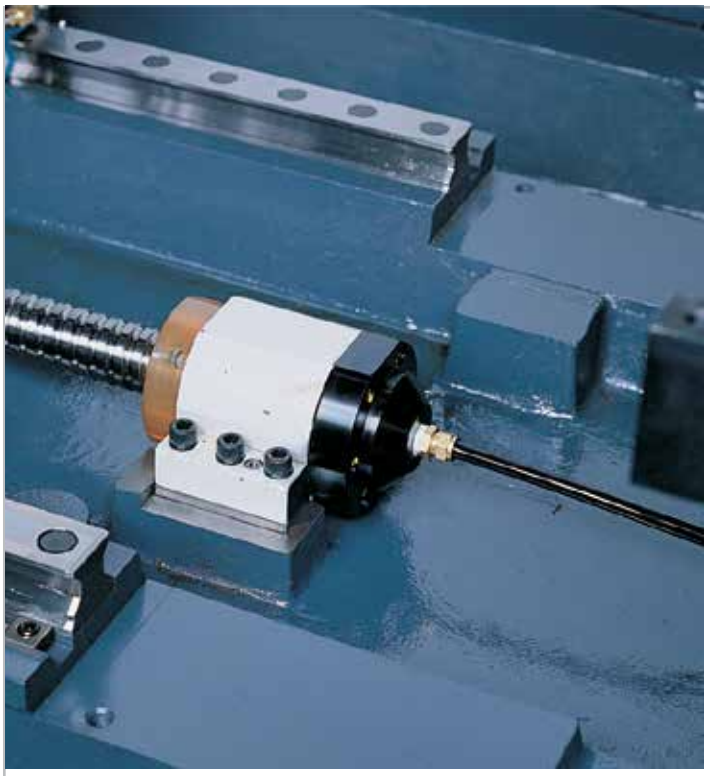


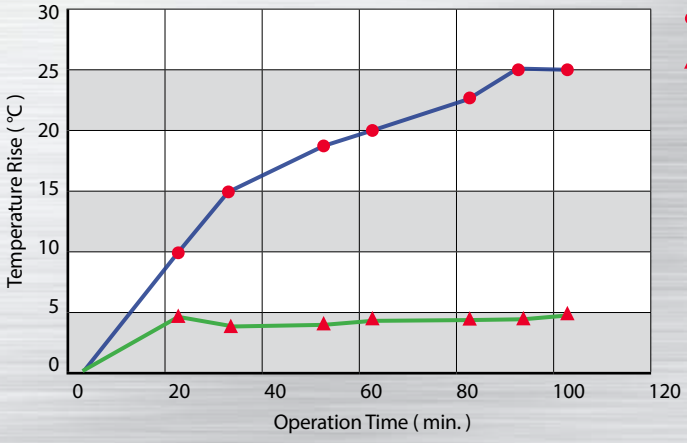
Roller Linear Guideway

High Speed, High Precision Linear Guideways

- Roller linear guideways with zero backlash ensure consistent cutting surface on curve or slope cutting.
- Suitable for high speed travel, the drive power requirement is significantly reduced.
- By using rolling contact instead of sliding contact, linear guide reduces friction loss, reacts quickly, and increases positioning accuracy.
- The loading capacity is high in multiple directions. Multiple contact points are maintained when machining, and cutting rigidity can be ensured.
- Easy to assemble and interchangeable, with a simple structure for easy lubrication.
- Long service life is guaranteed by the extremely low friction loss in the linear guideway.

Ballscrew Cooling System





● Without hollow ballscrew cooling system

▲ With hollow ballscrew cooling system

Test Conditions

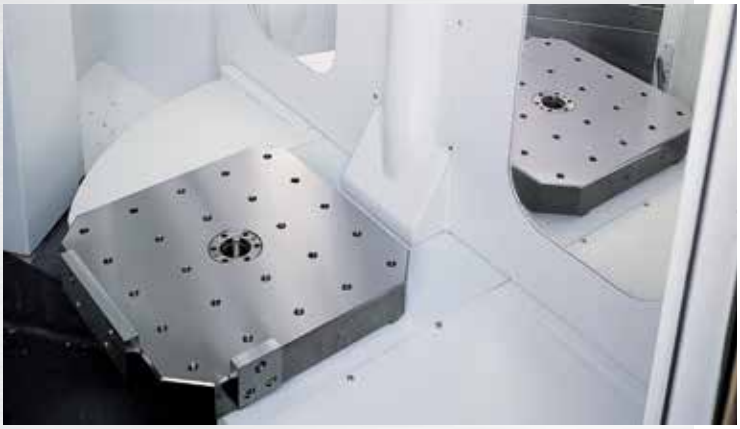
Ballscrew Diameter (mm)	RPM	Temperature Control of Cooling Oil (°C)	Coolant Flow Rate (L/m)
Ø50 x P12	1000	20	2.5

Hollow Ballscrew Cooling Efficiency

The transmission ballscrew is of hollow design. The coolant oil automatically circulates through the ballscrew, eliminating heat generation and thermal expansion during high speed rotation, so as to accomplish high-speed and high precision machining.

Tool Change System (ATC) & Magazine

- Fast, simple, reliable and long service life tool change system provides stable and reliable tool change operation.
- The unique tool change systems adopts an advanced cam drive device. Tool selection can be done quickly using the PLC program from any tool position.
- The ATC system passed 1,000,000 endurance tests to meet reliability requirements.
- The cam drive device of the magazine ensures precision rotation, ensuring smooth operation of the magazine even in heavy tool operation.



KMH-500

KMH-500

KMH-630

High Speed Mechanism

Shortens Non-Machining Time Substantially

- The capability to shorten the time for spindle acceleration, deceleration, transmission and tool change is the key to high cutting efficiency. The KMH series shortens the overall process time by increasing the speed of key mechanisms.

Wash Down System

Coolant Tank and Disc-Type Oil Separation

- Disc-type oil separator is easy to install and saves space. It enables effective separation of floating oil in the coolant tank, ensuring quality and prolonged service life of the coolant, improving the quality of the process.

Internal Coolant / Wash Down Device

- Coolant is sprayed from nozzles above the hood, preventing accumulation of chips.

Coolant Spray Gun

- Spray gun for easy and prompt cleaning of the machine. Removes and cleans remaining chips that stick to the machine, maintaining it in a clean and tidy condition.

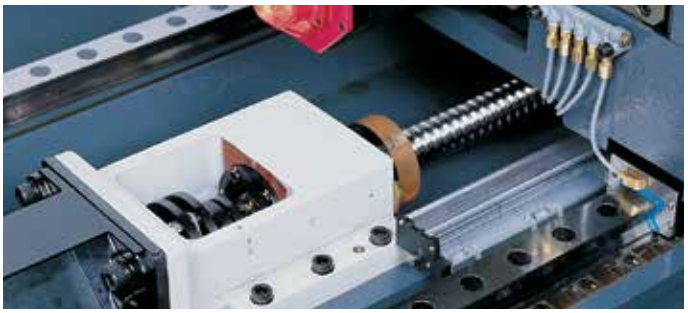
High Performance Equipment

Coolant through Spindle (CTS) Unit OP

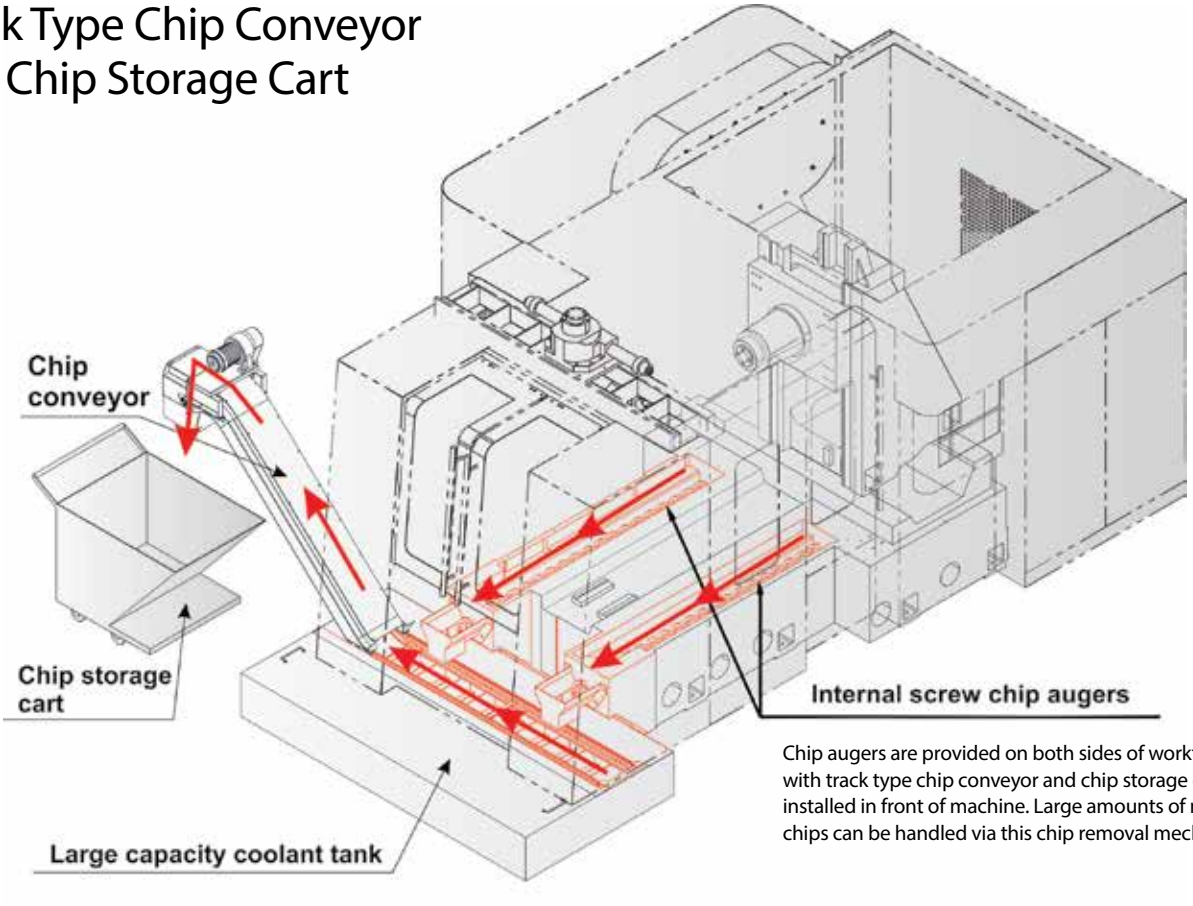
- CTS is optional. CTS allows high pressure coolant to travel through the spindle and tool, to immediately take away the heat.

Linear Scales OP

- X/Y/Z Axis can be equipped with linear scales.
- Air purge is equipped to protect the linear scales, to avoid dust or oil mist contamination. This helps the precision and lifespan of the linear scales.



Track Type Chip Conveyor and Chip Storage Cart

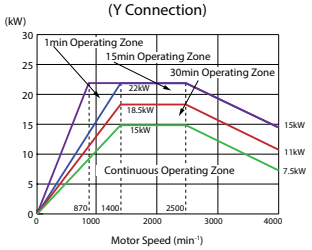


Chip augers are provided on both sides of worktable, with track type chip conveyor and chip storage cart installed in front of machine. Large amounts of metal chips can be handled via this chip removal mechanism.

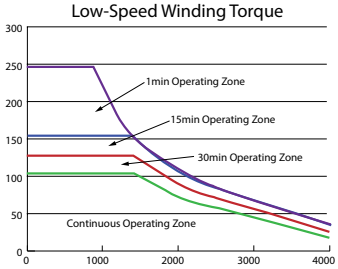
Torque Charts

KMH-500A
(40-Taper)

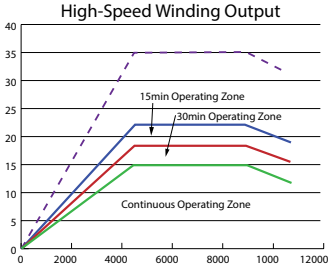
Low-Speed Winding Output
(Y Connection)



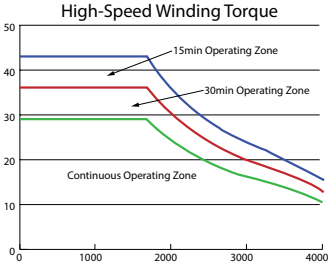
Low-Speed Winding Torque



High-Speed Winding Output

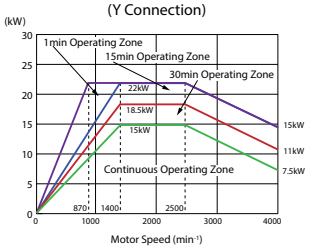


High-Speed Winding Torque

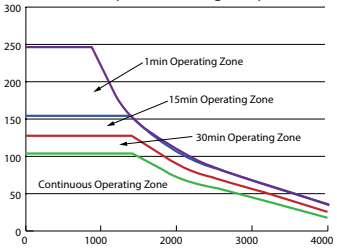


KMH-500B
(50-Taper)

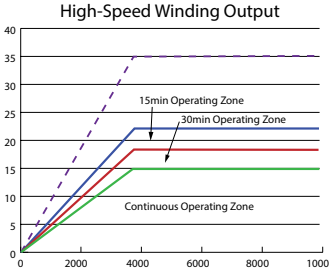
Low-Speed Winding Output
(Y Connection)



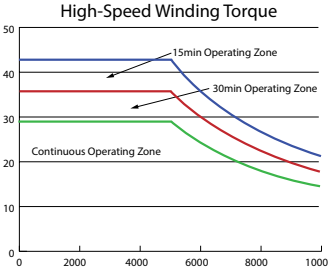
Low-Speed Winding Torque



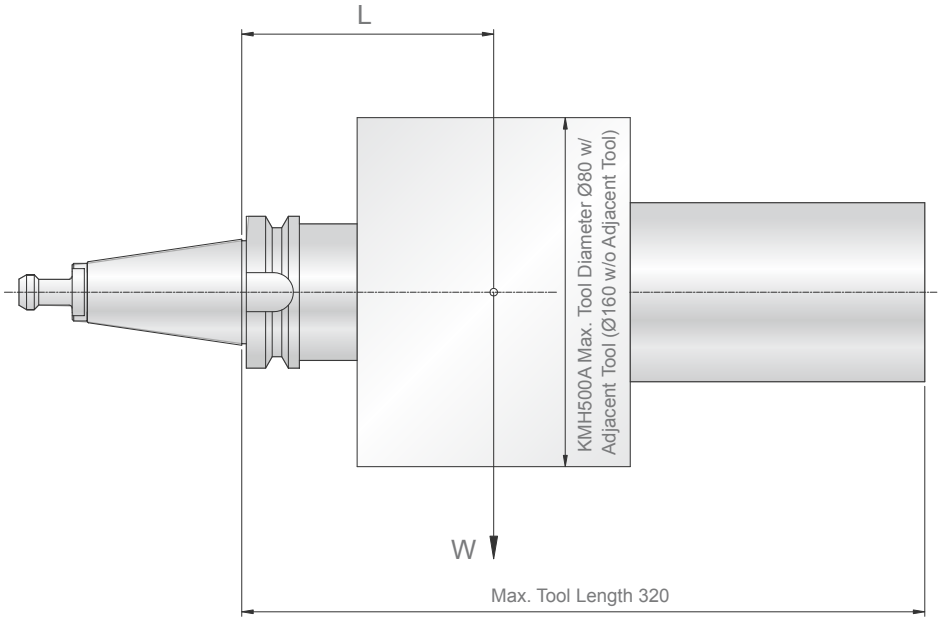
High-Speed Winding Output



High-Speed Winding Torque

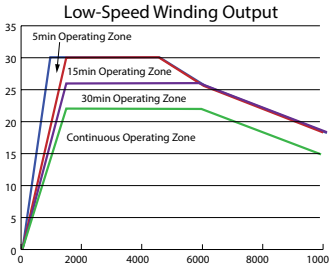


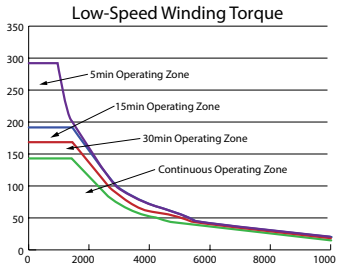
CAT-40

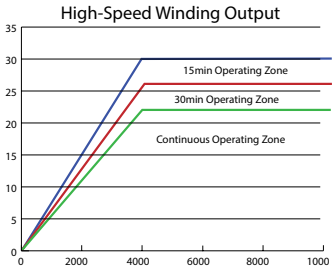


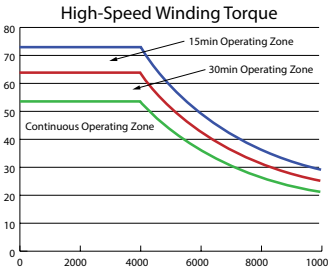
Torque Charts

KMH-630B
(50-Taper)

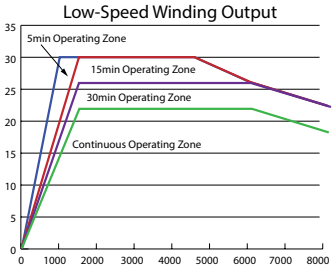


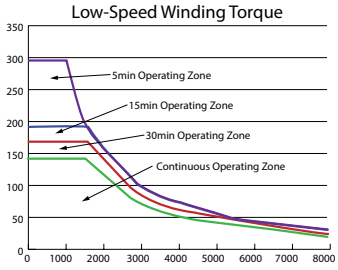


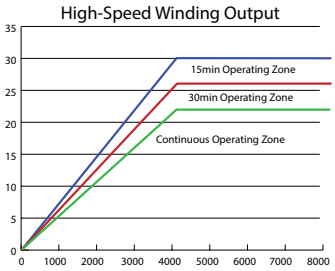


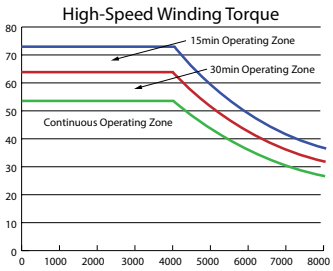


KMH-800B
(50-Taper)

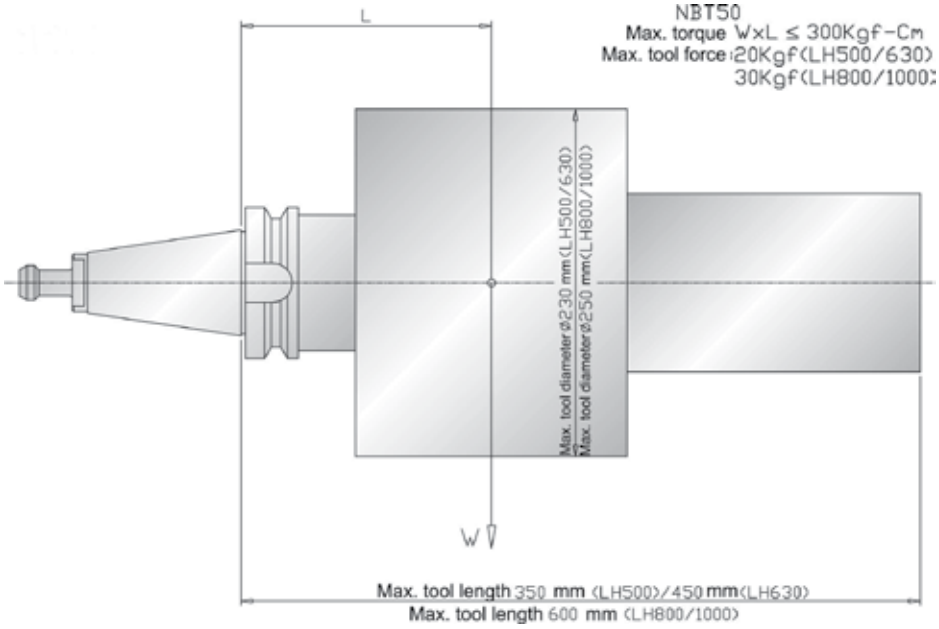








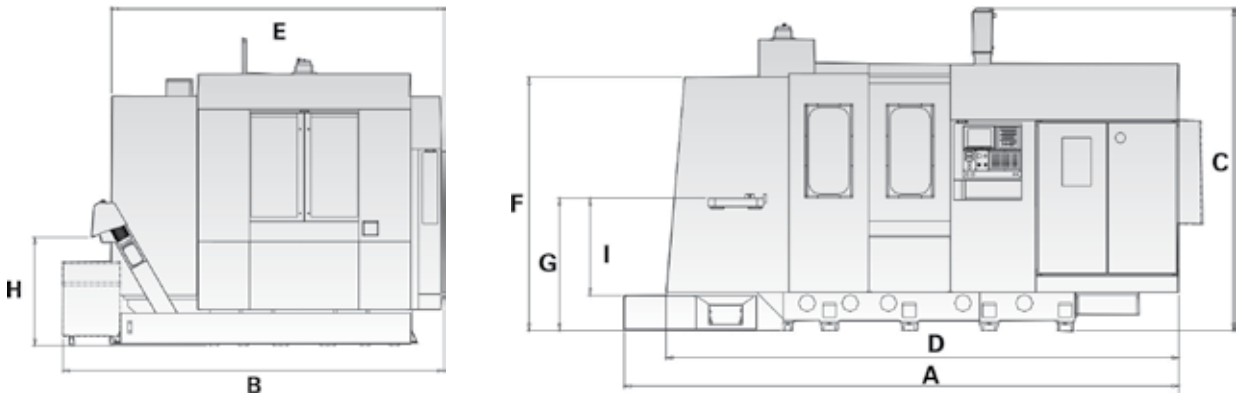
NBT-50



Machine Dimensions

Dimension

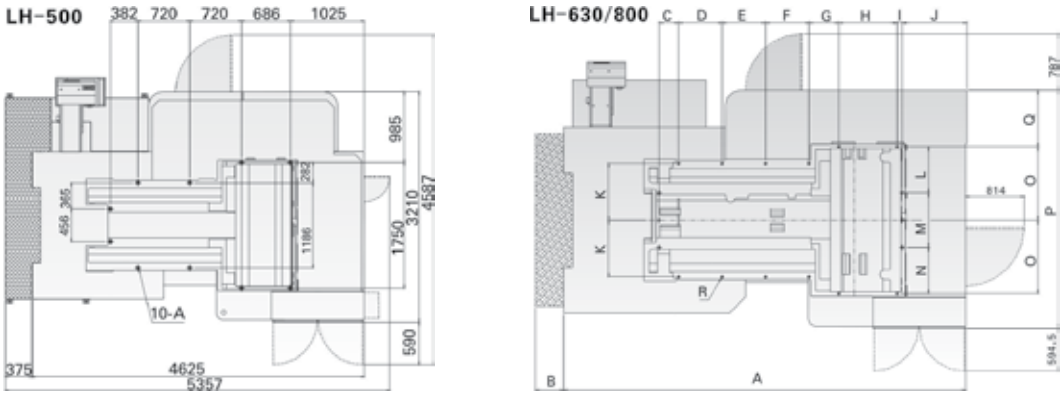
unit : in (mm)



Position / Model	A	B	C	D	E	F	G	H	I
KMH-500	196.9 (5000)	144.9 (3680)	114.3 (2904)	167.9 (4625)	126.4 (3210)	89.9 (2283)	47 (1195)	41.2 (1046)	34.6 (878)
KMH-630	234.9 (5966)	157.5 (4000)	132.4 (3362)	219.6 (5577)	136.6 (3470)	100.4 (2550)	51 (1295)	44.6 (1132)	39.1 (993)
KMH-800	275.2 (6991)	177.4 (4506)	155.4 (3948)	259.1 (6581)	170.3 (4326)	115.4 (2932)	50.8 (1290)	44.6 (1132)	38.9 (988)

Floor Space & Foundation

unit : in (mm)

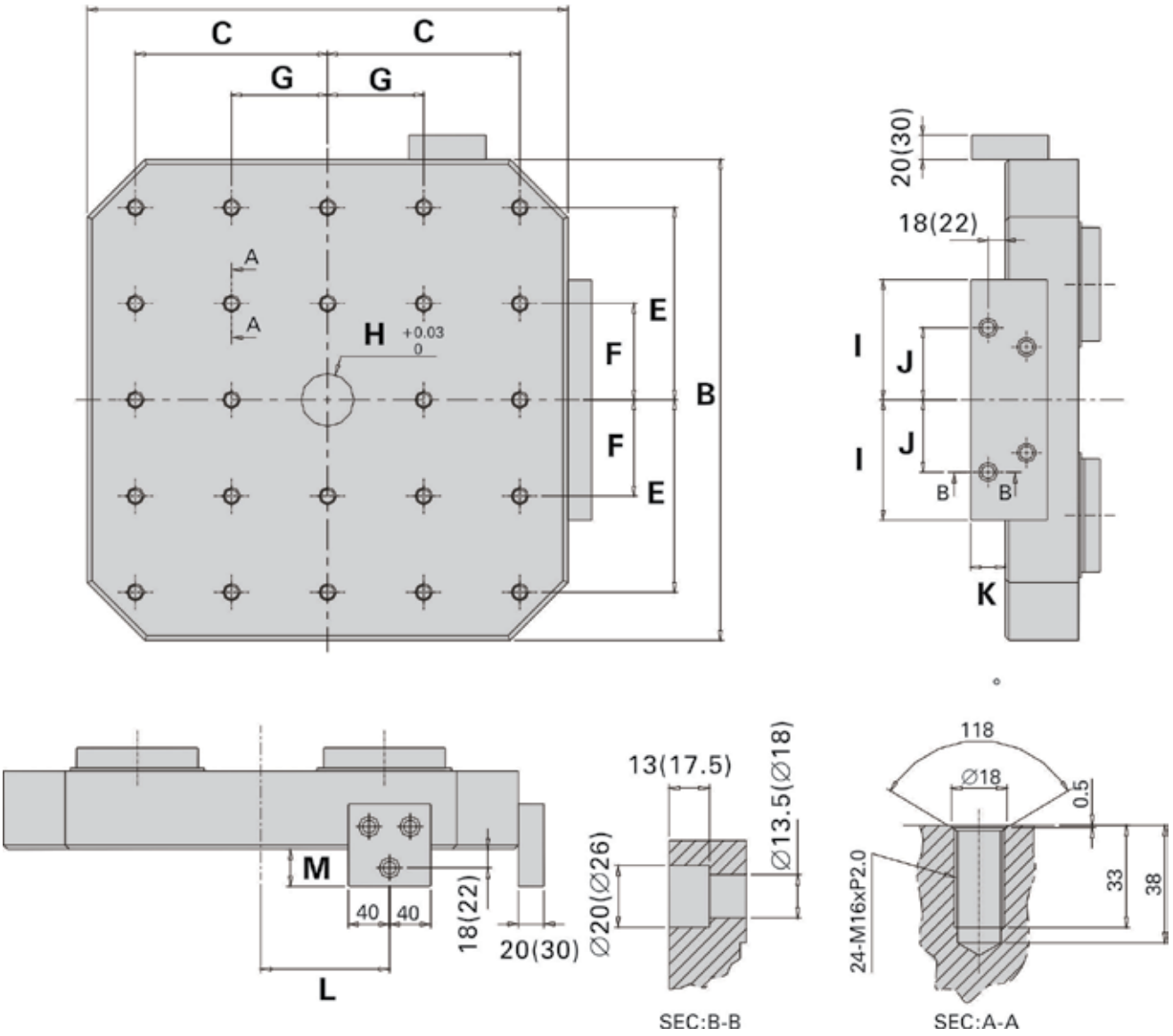


	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
KMH-630	219.5 (5577)	15.3 (389)	10.7 (273)	23.7 (603)	23.7 (603)	23.7 (603)	16.3 (414)	31.8 (806.5)	3 (75)	35 (889.5)	31 (788.5)	-	-	-	40.2 (1020)	136.6 (3470)	37.4 (951)	0.5 (14)
KMH-800	259.1 (6581)	16.1 (410)	21.5 (545)	26 (660)	26 (660)	26 (660)	17.1 (435)	38.6 (980)	3 (75)	38.6 (980)	-	32 (814)	30 (764)	36 (914)	-	170.3 (4326)	53.3 (1355)	0.6 (16)

Machine Dimensions

Pallet Dimensions

unit : in (mm)

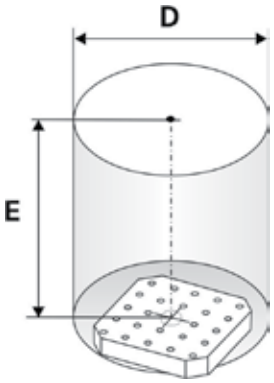


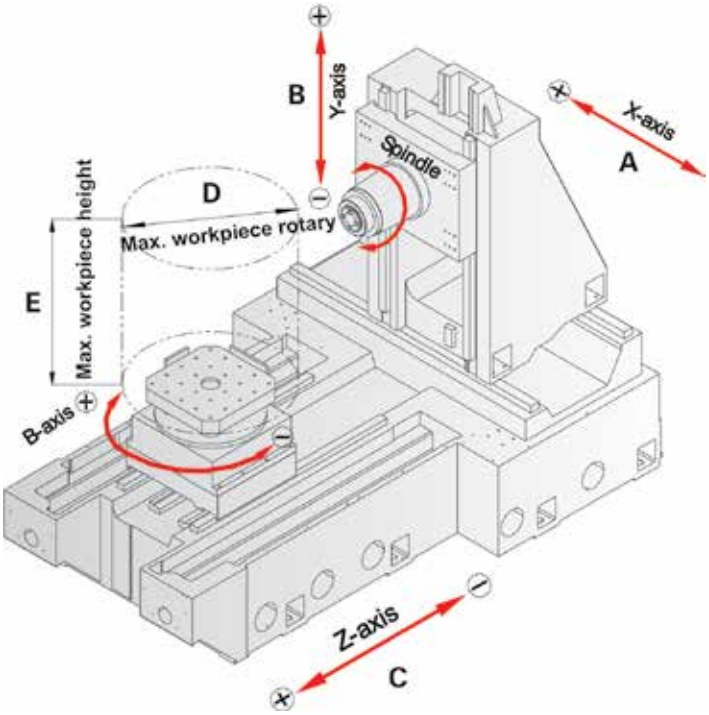
Model \ Position	A	B	C	E	F	G	H	I	J	K	L	M
KMH-500	19.7 (500)	19.7 (500)	7.9 (200)	7.9 (200)	3.9 (100)	3.9 (100)	2.2 (55)	4.9 (125)	3 (75)	1.4 (36)	4.9 (125)	1.4 (36)
KMH-630	24.8 (630)	24.8 (630)	9.8 (250)	9.8 (250)	4.9 (125)	4.9 (125)	1.2 (30)	4.1 (105)	2.2 (55)	1.4 (35)	2.4 (60)	1.4 (35)
KMH-800	31.5 (800)	31.5 (800)	12.6 (320)	12.6 (320)	6.3 (160)	6.3 (160)	2.2 (55)	7.9 (200)	5.3 (135)	1.6 (41)	7.9 (200)	1.6 (41)

Machine Dimensions

Traverse Diagrams

unit : in (mm)

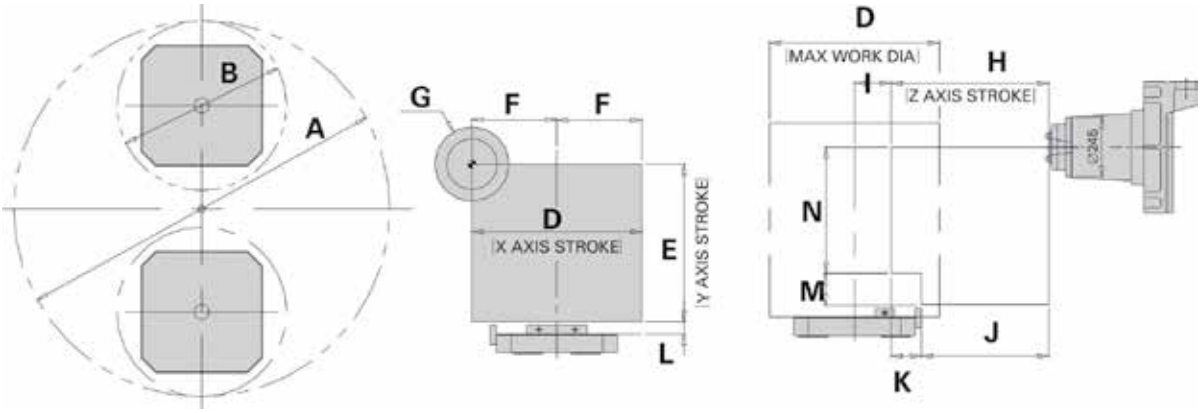




Position / Model	A	B	C	D	E
KMH-500	27.6 (700)	25.6 (650)	25.6 (650)	27.6 (700)	31.5 (800)
KMH-630	39.4 (1000)	33.5 (850)	37.4 (950)	39.4 (1000)	39.4 (1000)
KMH-800	51.2 (1300)	47.2 (1200)	47.2 (1200)	51.2 (1300)	47.2 (1200)

Machining Range

unit : in (mm)



Position / Model	A	B	D	E	F	G	H	I	J	K	L	M	N
KMH-500	61 (1550)	27.6 (700)	27.6 (700)	25.6 (650)	13.8 (350)	12 (306)	25.6 (650)	5.9 (150)	20.7 (525)	4.9 (125)	2 (50)	5.1 (130)	20.5 (520)
KMH-630	87.8 (2230)	39.4 (1000)	39.4 (1000)	33.5 (850)	19.7 (500)	12 (306)	37.4 (950)	5.9 (150)	29.9 (760)	7.5 (190)	3.9 (100)	3.1 (80)	30.3 (770)
KMH-800	114.2 (2900)	51.2 (1300)	51.2 (1300)	47.2 (1200)	25.6 (650)	12 (306)	47.2 (1200)	7.9 (200)	37.8 (960)	9.4 (240)	3.9 (100)	3.1 (80)	43.9 (1115)

Option List

	KMH-500A	KMH-500B	KMH-630B	KMH-800B
Spindle				
Spindle Speed 8000 RPM	—	—	—	●
Spindle Speed 10,000 RPM	—	●	●	—
Spindle Speed 12,000 RPM	●	—	—	—
Spindle Oil Cooler	●	●	●	●
Spindle Air Purge	●	●	●	●
Spindle Direct Transmission	●	●	●	●
Spindle Belt Transmission + ZF Gear	—	—	●	●
3-Axis Transmission System				
3-Axis Roller Linear Guide	●	●	●	●
3-Axis Chilled Ballscrews	●	●	●	●
3-Axis Linear Scales	○	○	●	●
4th Axis Scale	○	○	○	○
Pallet				
Worktable 0.001 Indexing	●	●	●	●
Pallet M16 Fixing Hole	●	●	●	●
Pallet T-Slot	○	○	○	○
Cooling System				
Splash Ring	●	●	●	●
Spindle Air Blow	○	○	○	○
Center Through Spindle	○	○	○	○
Chip Removal				
Chain Type Chip Removal System	●	●	●	●
Chip Cart	●	●	●	●
Chip Augers	●	●	●	●
Disc-Type Coolant Separator	●	●	●	●
Coolant Gun	●	●	●	●

	KMH-500A	KMH-500B	KMH-630B	KMH-800B
Safety System				
Front Door/Side Door Safety Switch	●	●	●	●
CE Compliance	○	○	○	○
Measuring System				
Tool Length Measuring System Mech.	○	○	○	○
Workpiece Measuring System OMP-60	○	○	○	○
Tool Breakage Detection (magazine)	○	○	○	○
ATC and Magazine Systems				
Tool Storage Capacity 60T	●	●	●	●
Tool Storage Capacity 90T or 120T	○	○	○	○
Tool Specification CAT	○	●	●	●
Tool Taper N0 40	●	—	—	—
Tool Taper N0 50	—	●	●	●
Electrical				
M30 Automatic Power-Off System	●	●	●	●
Working Light (lightning)	●	●	●	●
Warning Light	●	●	●	●
Electrical Cabin Air-Conditioner	○	○	○	○
Electrical Cabin Heat Exchange System	●	●	●	●
Controller				
FANUC 0iMD	●	●	●	●
FANUC 31i	○	○	○	○
Other				
Mist Controller Unit	○	○	○	○
Rotary Window	○	○	○	○

●: Standard ○: Optional —: Not Available

Technical Specifications

Description	Unit	KMH500A	KMH500B	KMH630B	KMH800B
Travel					
Travel, X / Y / Z	in (mm)	27.6 / 25.6 / 25.6 (700 / 650 / 650)		39.7 / 33.4 / 37.4 (1000 / 850 / 950)	51.2 / 47.2 / 47.2 (1300 / 1200 / 1200)
Spindle Center To Pallet Face	in (mm)	1.97 ~ 27.56 (50 ~ 700)		3.9 ~ 37.4 (100 ~ 950)	3.9 ~ 51.2 (100 ~ 1300)
Spindle Nose To Pallet Center	in (mm)	5.9 - 31.5 (150 - 800)		5.9 - 43.4 (150 - 1100)	7.9 - 55.1 (200 - 1400)
Pallet					
Pallet Size	in (mm)	19.7 x 19.7 (500 x 500)		24.8 x 24.8 (630 x 630)	31.5 x 31.5 (800 x 800)
Maximum Workpiece	in (mm)	Ø27.6 (Ø700)		Ø39.7 (Ø1000)	Ø51.2 (Ø1300)
Maximum Pallet Load	lbs (kg)	1102.3 (500)		2204.6 (1000)	4409.2 (2000)
Maximum Workpiece Height	in (mm)	31.5 (800)		39.7 (1000)	51.2 (1300)
Pallet Surface Configuration	-	24-M16 Pitch 100		24-M16 Pitch 125	24-M16 Pitch 160
Pallet Minimum Division Angle	degrees	0.001			
Spindle					
Spindle Max. Speed	RPM	12,000	10,000	10,000	8,000
Spindle Taper	-	7/24 Taper No. 40	7/24 Taper No. 50	7/24 Taper No. 50	
Spindle Bearing ID	in (mm)	2.8 (70)	3.9 (100)	2.8 (70)	3.9 (100)
Spindle Transmission	-	Direct Couple			
Automatic Tool Change					
Type Of Tool Shank	-	ISO 40 / NBT-40	ISO 50 / NBT-50	ISO 50 / NBT-50	
Tool Capacity	PC	60			
Max. Tool Diameter / Without Neighboring Tool	in (mm)	3.15 / 6.3 (80 / 160)	4.9 / 9.1 (125 / 230)	4.5 / 9.1 (115 / 230)	4.9 / 9.8 (125 / 250)
Max. Tool Length	in (mm)	15 (380)	15 (380)	17.7 (450)	23.6 (600)
Max. Tool Weight	lbs (kg)	17.6 (8)	44.1 (20)	44.1 (20)	66.1 (30)
ATC Change Time (Tool To Tool)	sec	2.1	3.5		8
Tool Selection Method	-	Random / Fixed Address			

- The catalog is only for reference purposes. Actual machine may differ to this specification.
- Kiwa reserves the rights to modify, or to stop adopting the specification of this catalog.

Technical Specifications

Description	Unit	KMH500A	KMH500B	KMH630B	KMH800B
Feed					
Max. X/Y/Z Rapid Speed	in/min (mm/min)	1889 (48000)		1417 (36000)	1260 (32000)
Rapid Feed (4th Axis)	rpm	33		22	16
Cutting Feed Rate	in/min (mm/min)	1 - 787 (1 - 20000)			
Manual Feed Rate	in/min (mm/min)	49.6 (1260)			
Automatic Pallet Changer					
Number of Pallet	PC	2			
Pallet Change Method	-	Rotary			
Time for APC	sec	12		18	
Controller System					
Control	-	FANUC 0iMD			
Motor					
Spindle Motor Power	KW	15 / 18.5		22 / 26	
Spindle Max. Torque (30 min)	Nm	120		170	660
X / Y / Z / B Axis Motor	KW	7 / 7 / 4 / 1.6		7 / 7 / 7 / 3	
Motor Hydraulic System	KW	2.2			
Motor Coolant Pump System	KW	1.6			
Power Supply					
Power Requirement	KVA	38	45	58	
Capacity of Oil Tank / Coolant Tank					
Hydraulic System Capacity	gal (L)	15.9 (60)			
Lubrication System Capacity	gal (L)	1.1 (4)			
Coolant System Capacity	gal (L)	200.8 (760)		211.3 (800)	224.5 (850)
Mechanical Specifications					
Height	in (mm)	114.3 (2904)		132.4 (3362)	153.5 (3900)
Floor Area	in (mm)	126.4 x 196.9 (3210 x 5000)		234.9 x 136.6 (5966 x 3470)	275.2 x 170.3 (6991 x 4326)
Weight	lbs (kg)	33069.3 (15000)		50706.3 (23000)	55115.6 (25000)

Methods

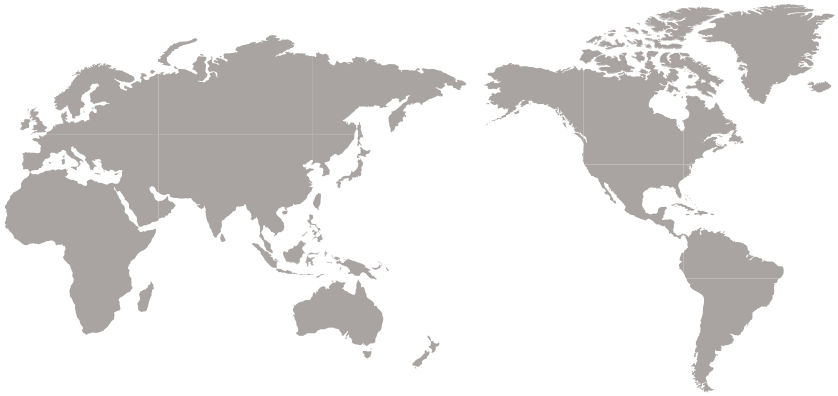
Methods

WWW.METHODSMACHINE.COM

TECHNICAL CENTERS FROM COAST TO COAST

BOSTON	CHARLOTTE	CHICAGO	DETROIT	LOS ANGELES	PHOENIX	SAN FRANCISCO
978.443.5388	704.587.0507	847.783.6800	248.624.8601	714.521.2507	602.437.2220	510.636.1430

MACHINE TOOLS ■ TURNKEY SOLUTIONS ■ AUTOMATION CELLS ■ PARTS AND SERVICE ■ TOOLING



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