MULTI - TASKING Turn-Mill Machine

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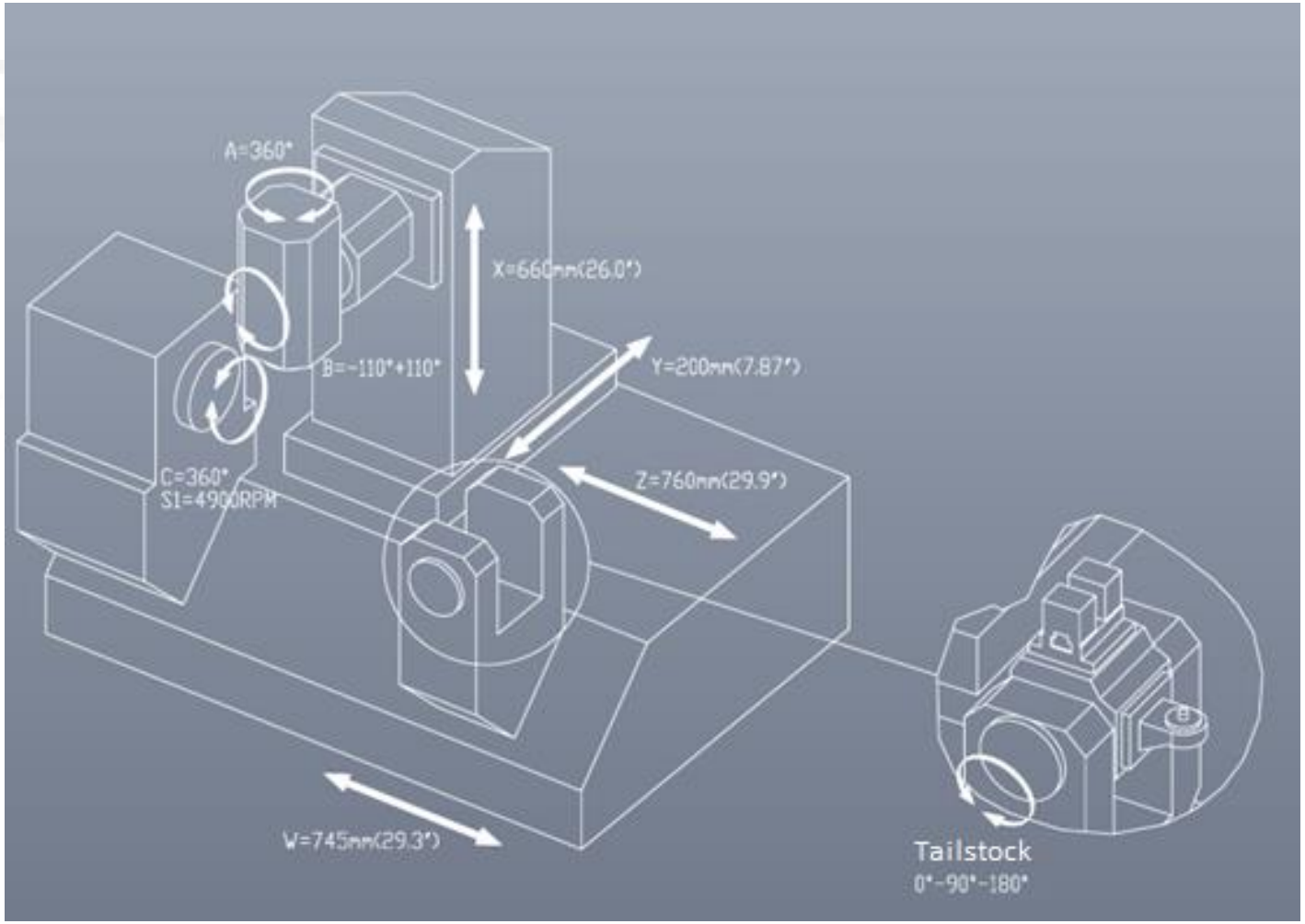
Design concept

The Main characters of Turn-Mill machine MT-540 are the orthogonal structure and rotating mill head, offering C, Y and B turn-mill capacity. The orthogonal structure design provides wide range of travel and high dynamic rigidity. Turning combined with mill head can cut simultaneously from different direction, reduce cycle time and improve parts accuracy.

Compact and flexible machine, MT-540 comes with maximum bar feeding diameter of 65mm. The workpiece with maximum turning diameter of 350 mm and 700 mm length can be machined.

Multi-purpose rotating components offer versatile functionality, like tailstock, loading, milling and drilling, helping the operator in practical using and long periods of unmanned running.

MT-540 Axial definition



Applications

Aerospace Tooling

Medical parts

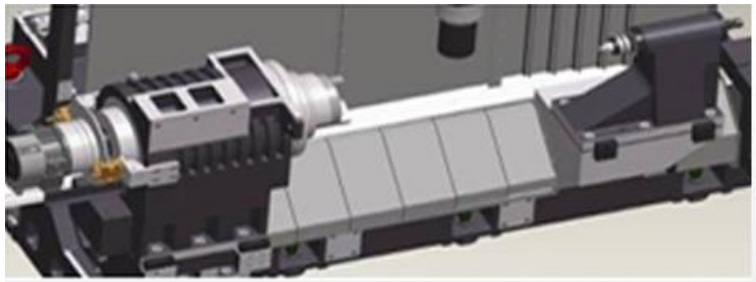
Medical parts

B-axis rotation angle ±110 °
Built-in milling spindle 12000rpm

Medical parts

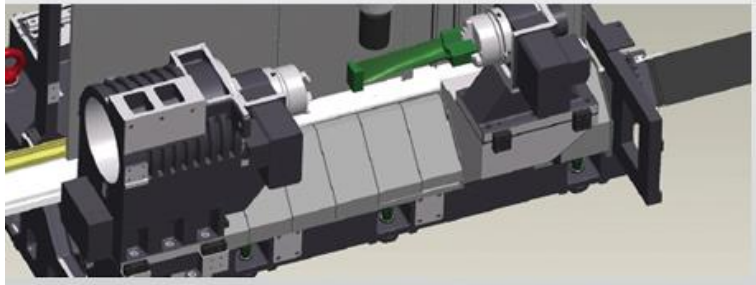
Propel Aerospace Tooling

Module design (optional)

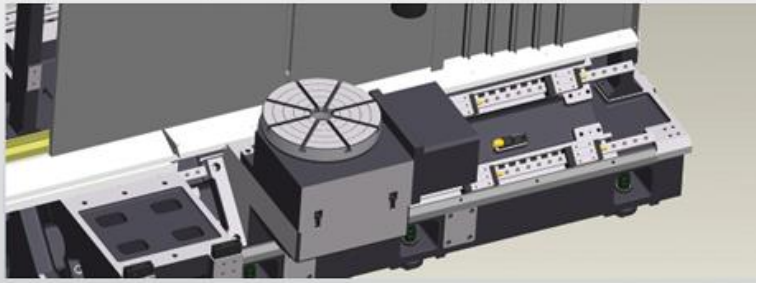


Standard type(with fixed tailstock)

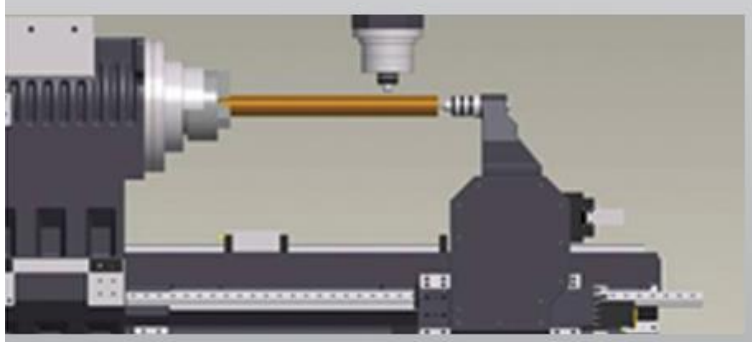
Standard type + turning sub-spindle (C1+C2 axis)



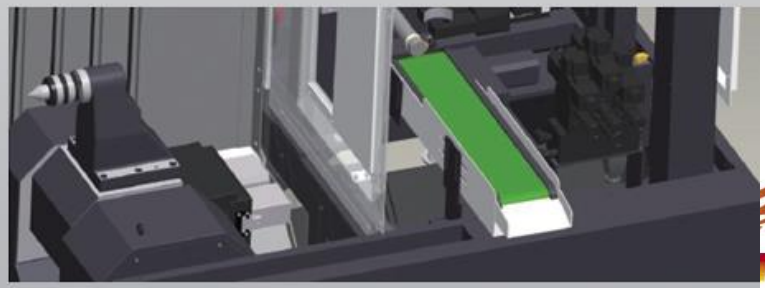
Standard type + twin rotary table (B+C axis)



Standard type + rotary table (B+A axis)



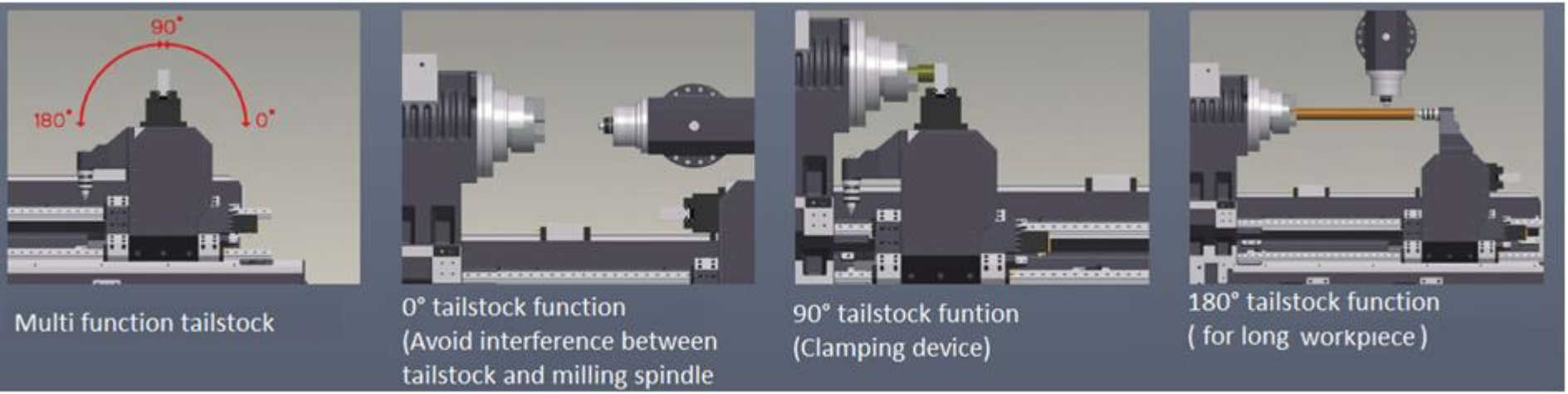
Standard type + multi-function tailstock



Automation module and parts collecting device

Patented

Multi-functions



Multi-task Rotating Tailstock

(0°、90°、180° rotating and using for different machining job, that able to change the different side of workpiece but no need Sub-spindle, also easy doing well the turning, milling, drilling, tapping, hobbing, grinding, and machining the complicated curve shape for Done-In-One on Turn-Mill Center)

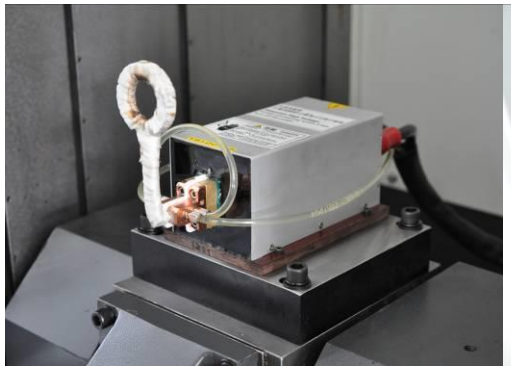
Patented

Turn Key for tooling System

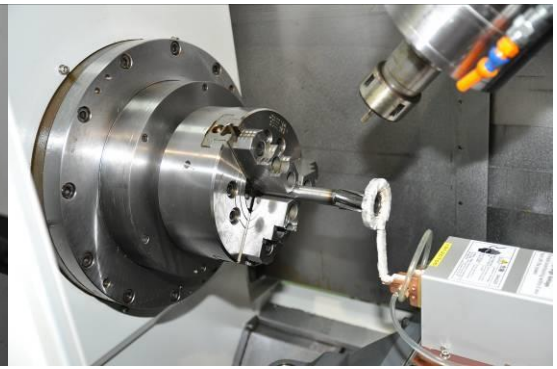
Works with Heat Treatment :

Running low vibration feature on Built-in Turning / Milling Spindles works with Heat Treatment to process the drill cutter well by turning, milling and grinding procedure for Done-In-One demand.

Tool after rough machining

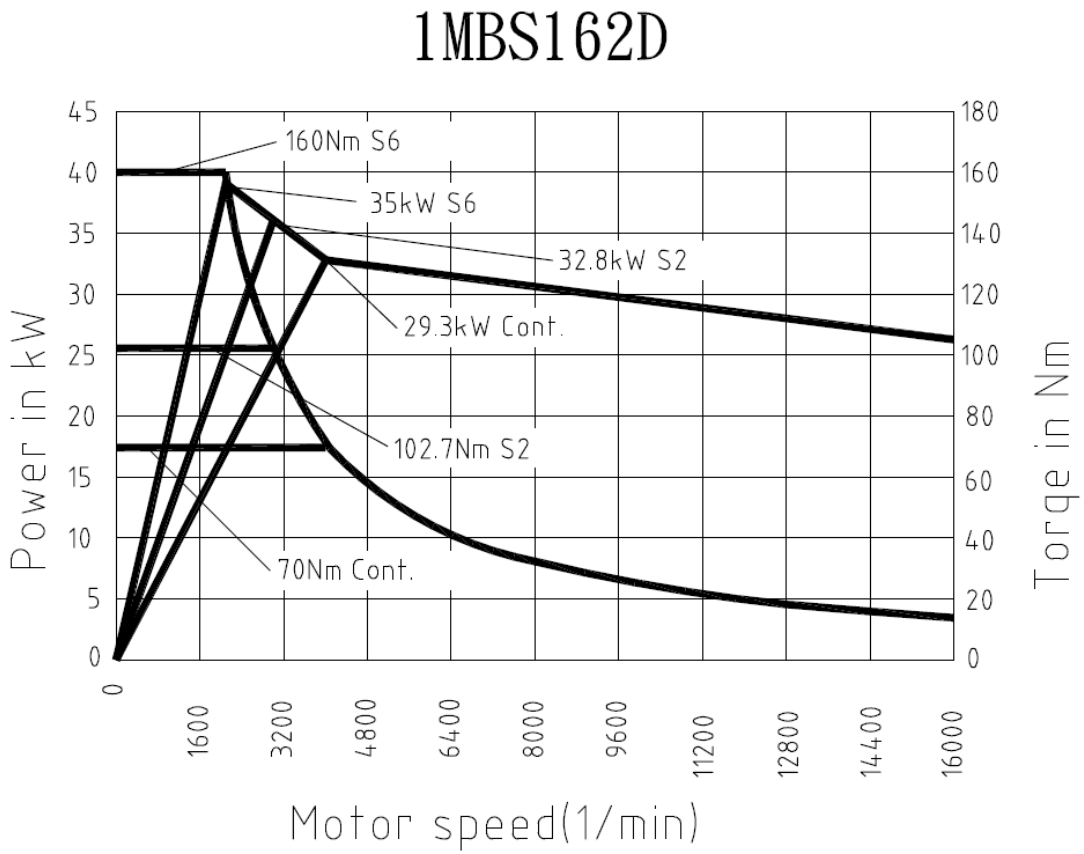


High-frequency Induction hardening



Heat treatment and final machining

Milling: Built-in Spindle 12000 rpm



Spindle speed	12,000 rpm
Motor type	INDRAMAT MBS162D
Rated power	29.3kW
Rated torque	70Nm
Maximum torque	160Nm
Tool interface	KM63
Clamping force	3500 ± 10% Kgf
Bearing ID.	ϕ70
Lubrucation	Grease
Weight	
Remark	C.T.S Type Spindle

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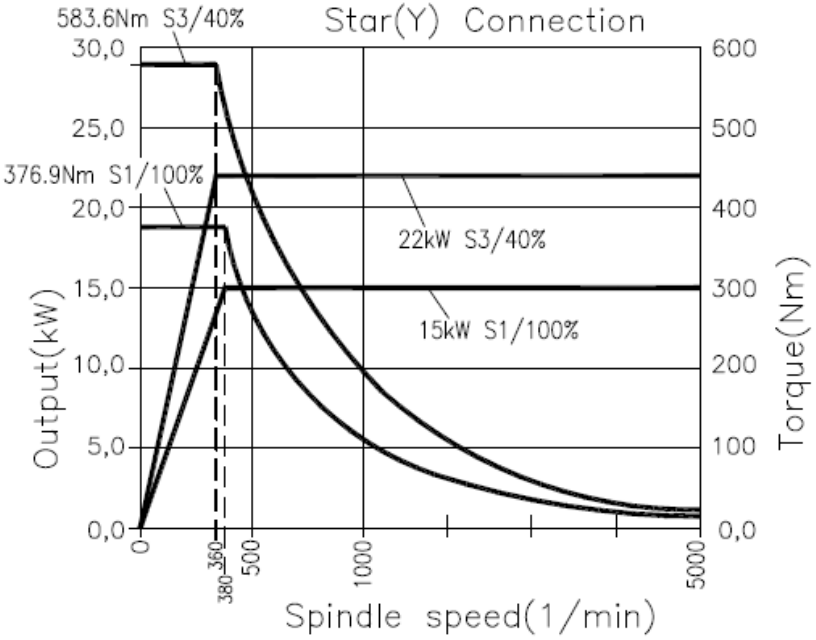
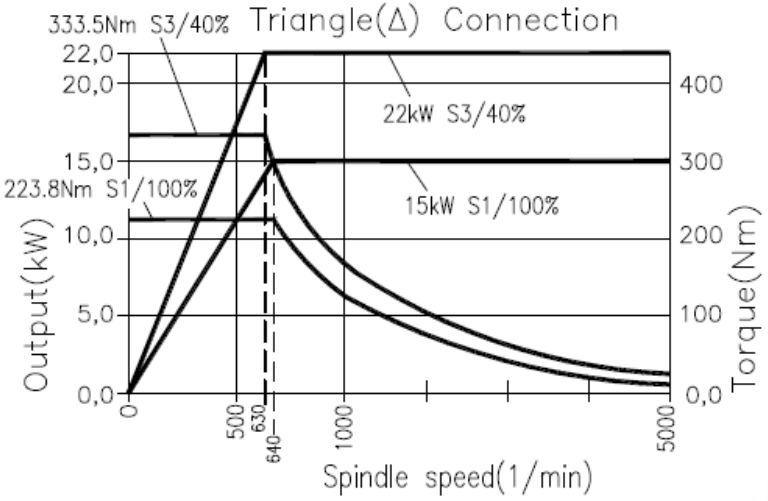
Turning: Built-in Spindle 5000 rpm

Motor spec.	AC 300/240/8-ATE	I.D of bearing	Φ120 mm
Spindle speed	5000 rpm	Lubrication	Grease
Spindle nose	JIS A2-6	Spindle cooler	Oil
Spindle bore	Φ75 mm	C function (brake)	Standard
Draw bar	Φ65 mm	Encoder spec.	AK ERM 2480 – Heidenhain





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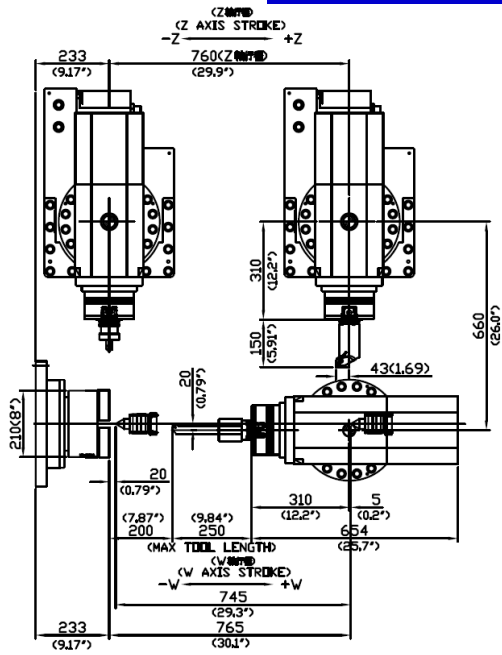
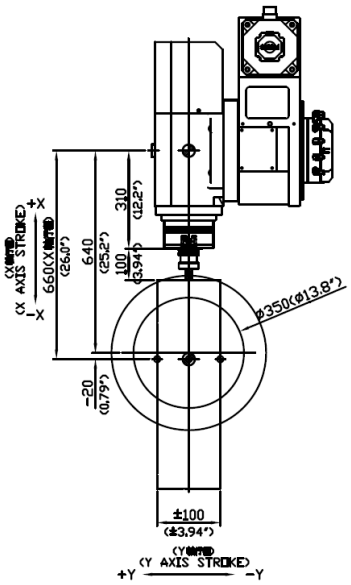
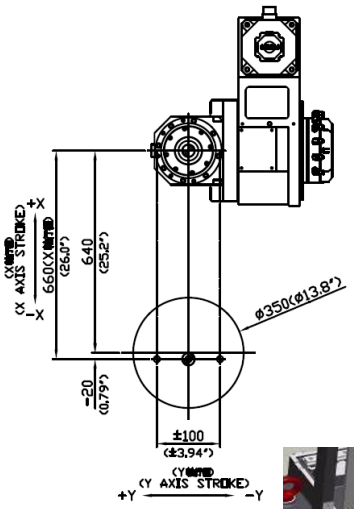
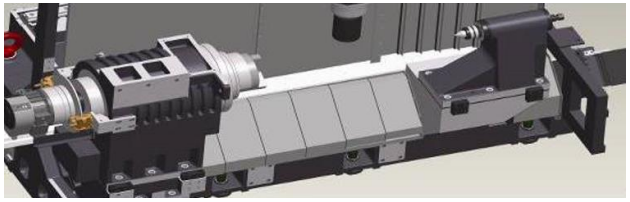
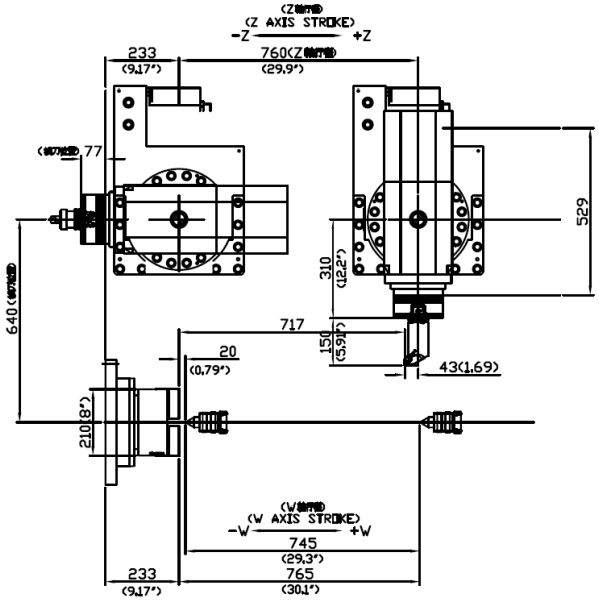
Tool Interference and Work Envelope (Fixed type Tailstock)

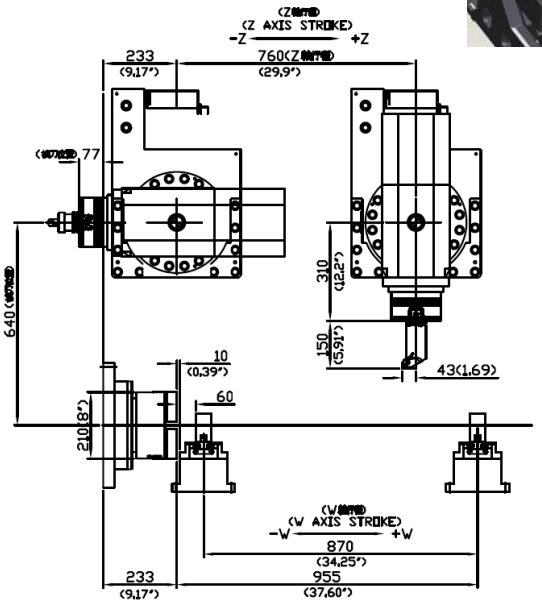




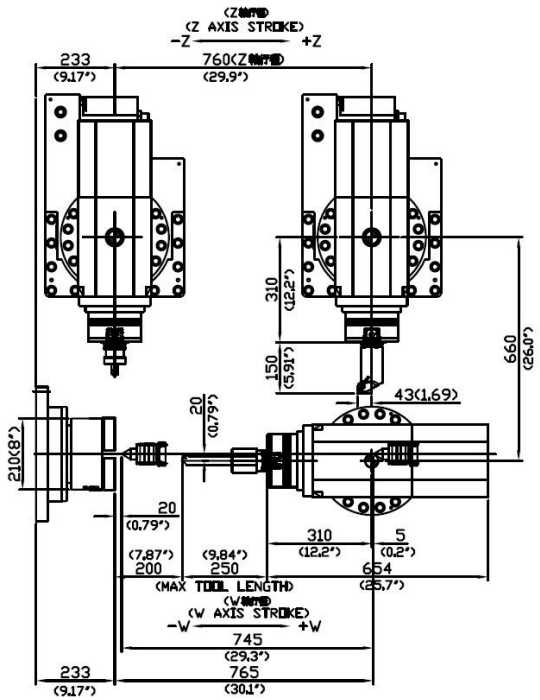


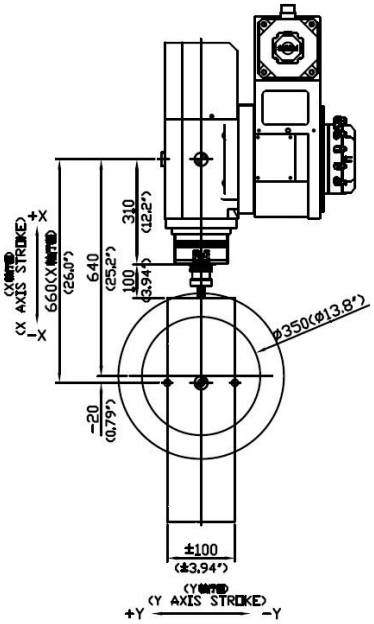


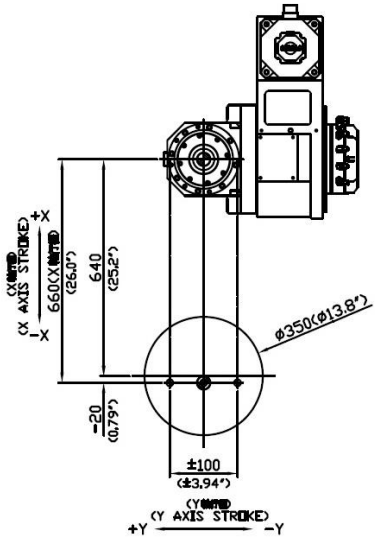


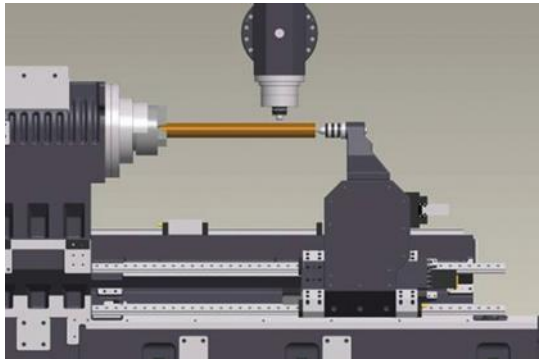


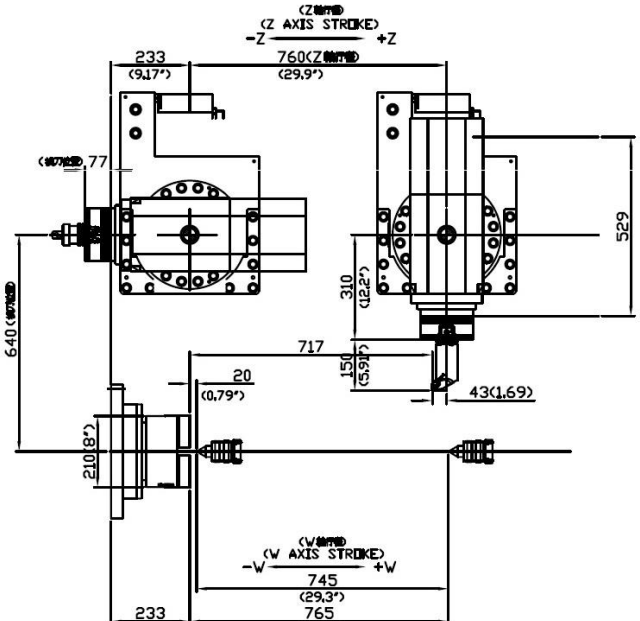
Tool Interference and Work Envelope (Multi-function Tailstock)

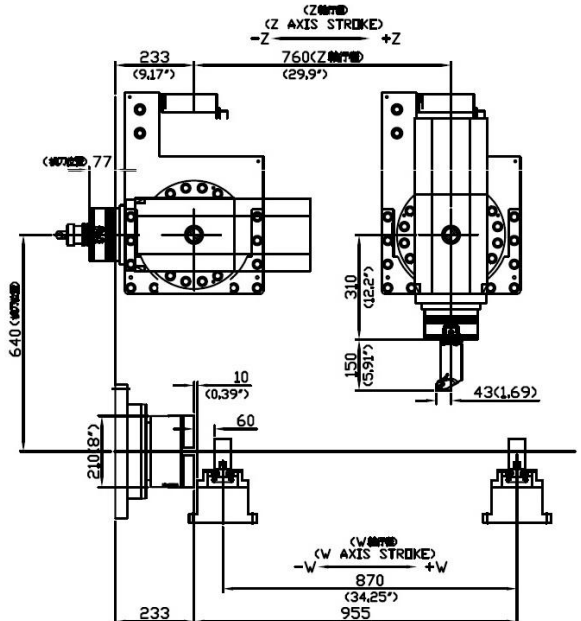




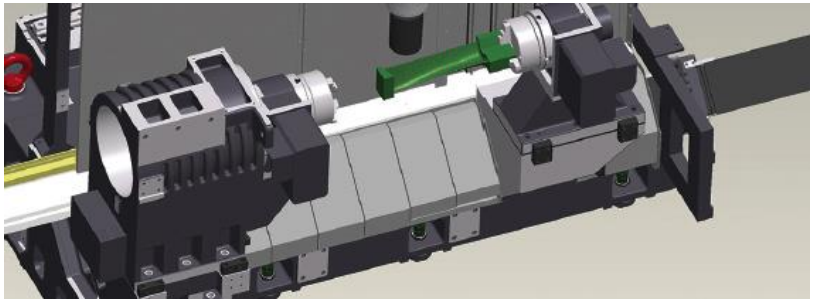


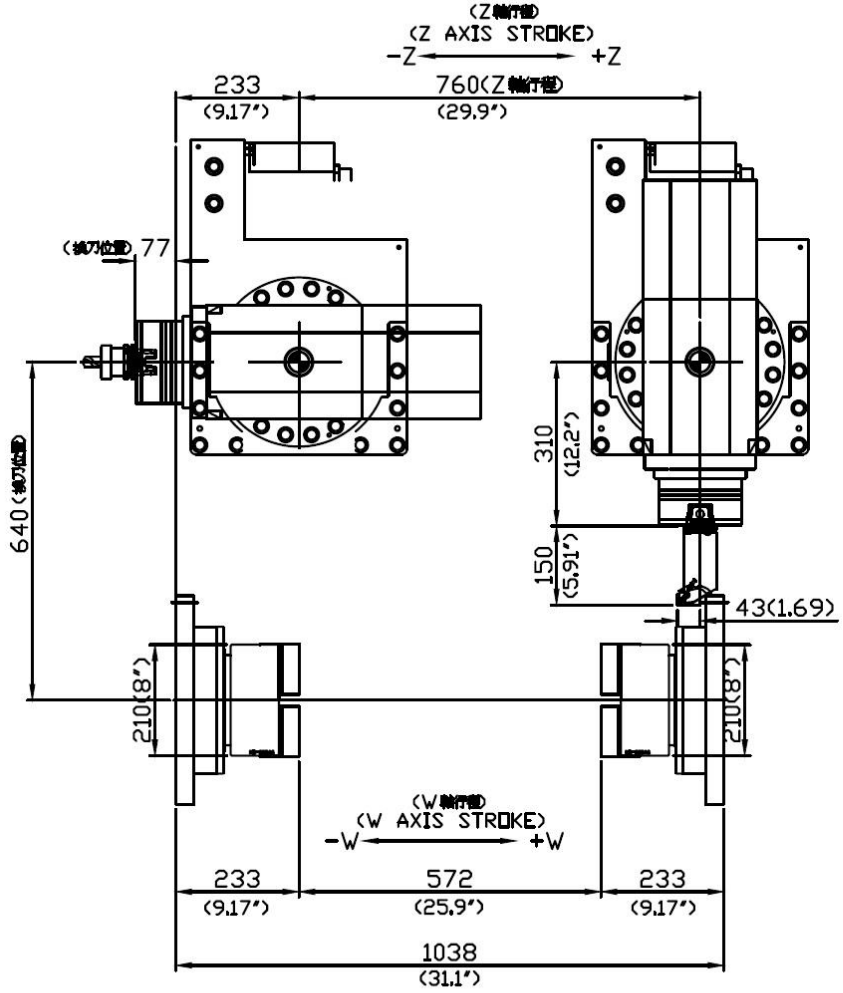


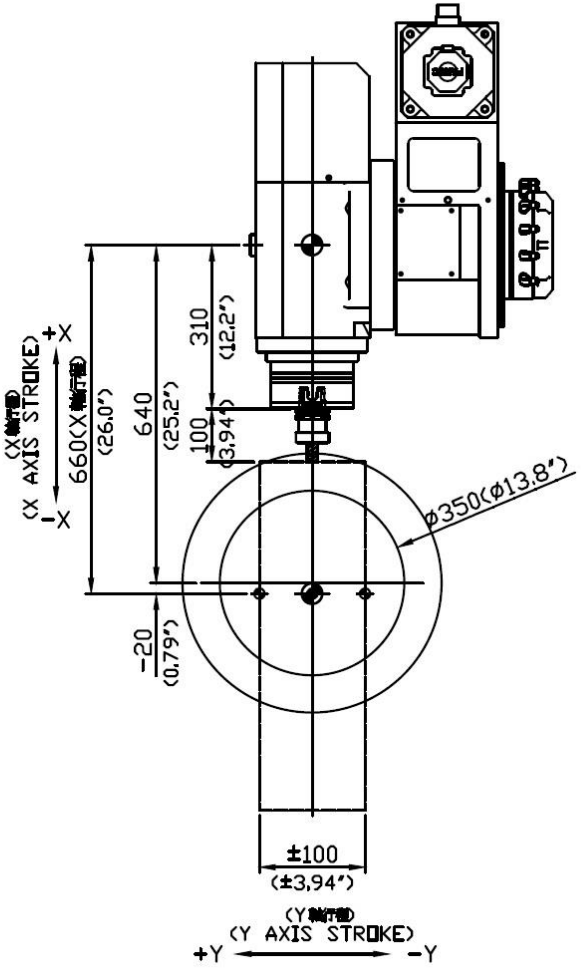




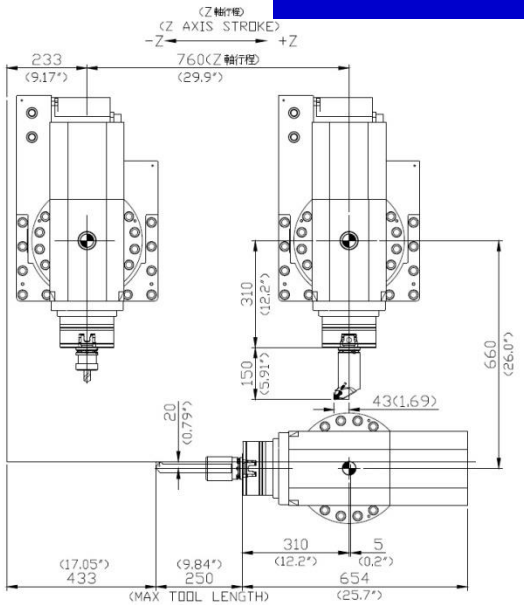
Tool Interference and Work Envelope (Twin rotary table)

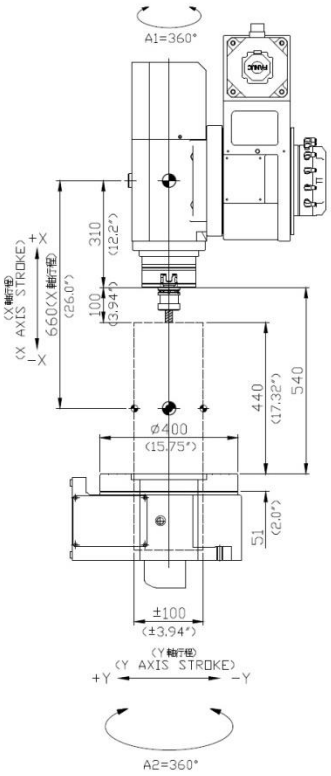


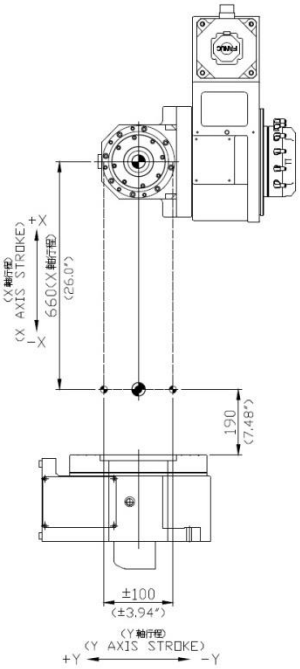


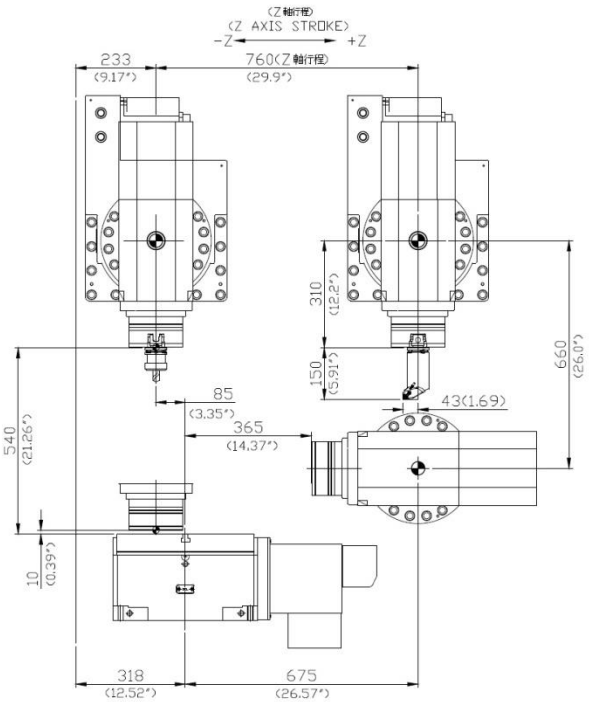


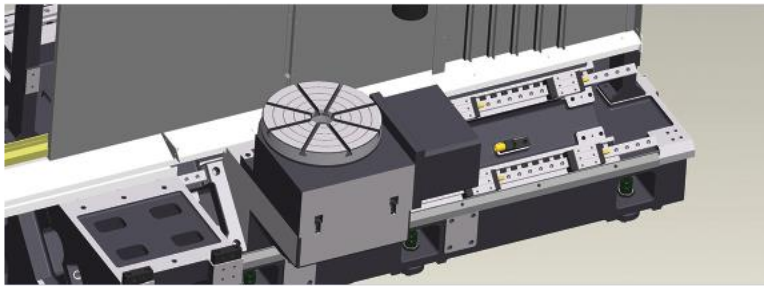
Tool Interference and Work Envelope (Single rotary table)



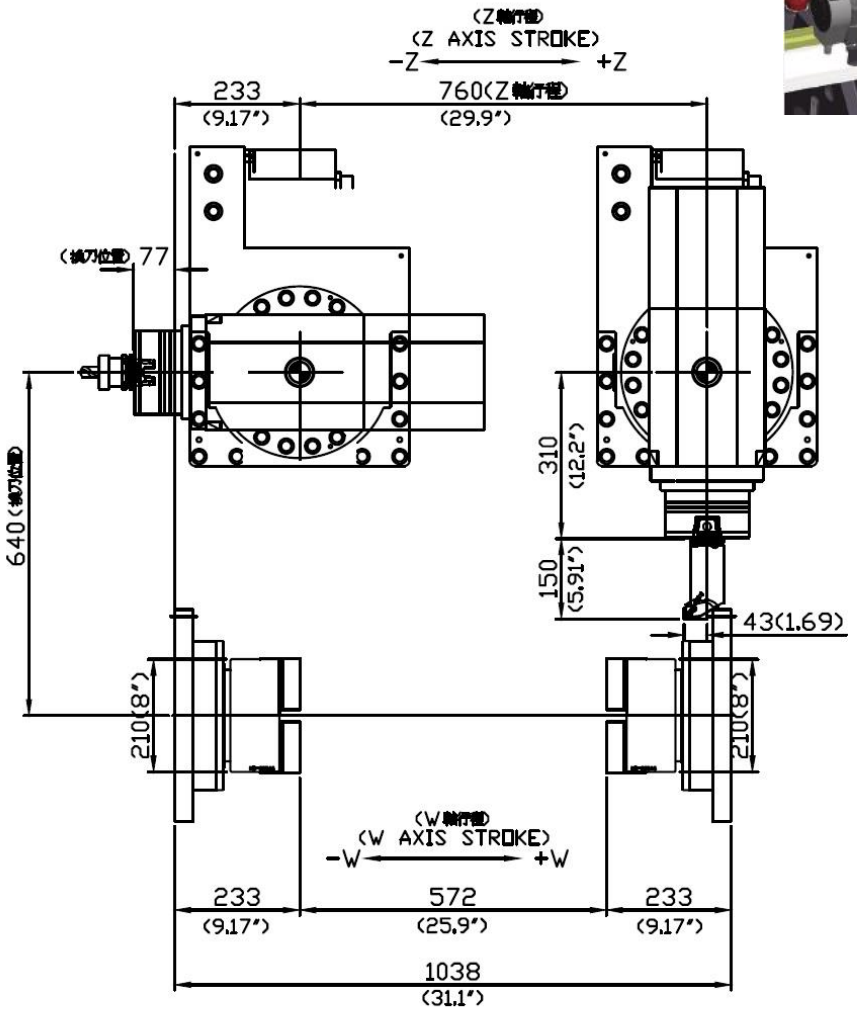


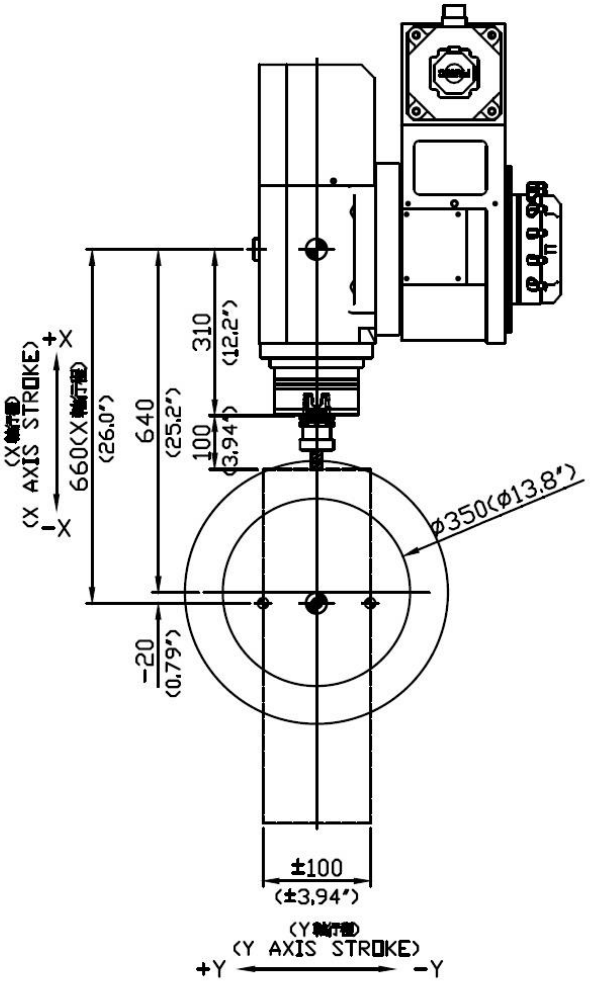






Tool Interference and Work Envelope (Twin Spindle)

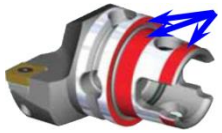




Tool magazine with KM tooling

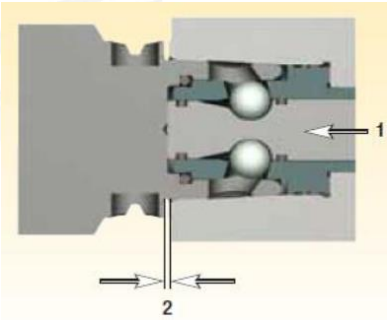
- Arm tool changer + Tool magazine 36-Tool (OPT: 72-Tool)
- KM Tooling system KENNAMETAL
- KM Tooling comes with three surface contact designed as is qualified to work for high torque performance and best than HSK tooling, that is fit for heavy cutting and high speed tooling work.
- Tool change time (T-T) 5 sec. (Weight: 5kgs)

KM: Three Surface contact



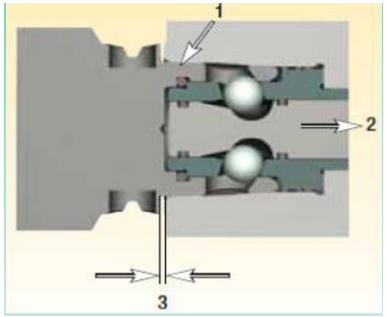
HSK : Two Surface contact

Capto: Two Surface contact



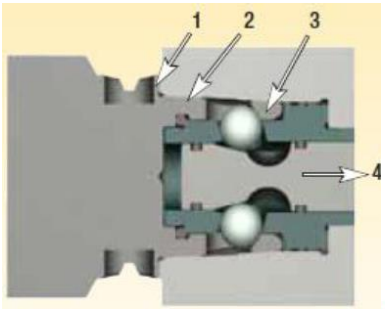
Beginning position before tool clamping/unclamping

1. Force of pull the tool
2. Gap



Beginning position before tool clamping

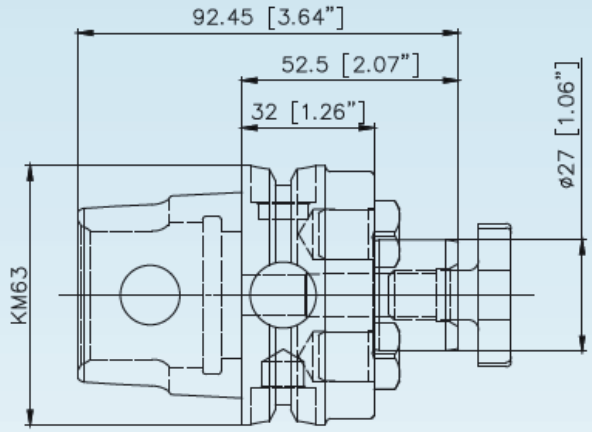
1. Force contact
2. Force of tool clamping
3. Gap

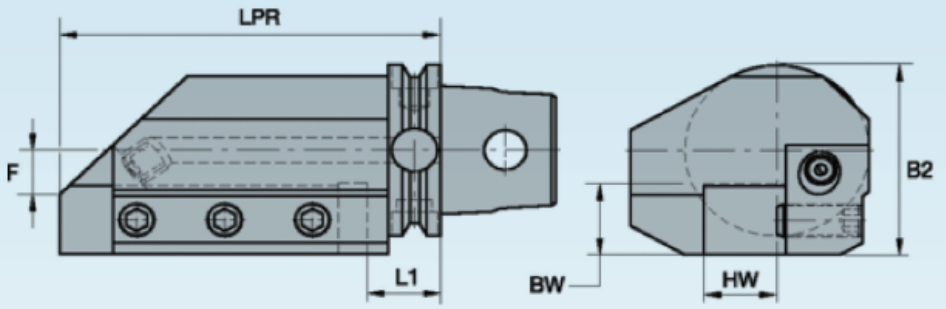


Position when clamping

1. Force contact engages fully.
2. Base side
3. Rear contact engages fully.
4. Force of pull the tool.

Tool Dimension





單位：mm

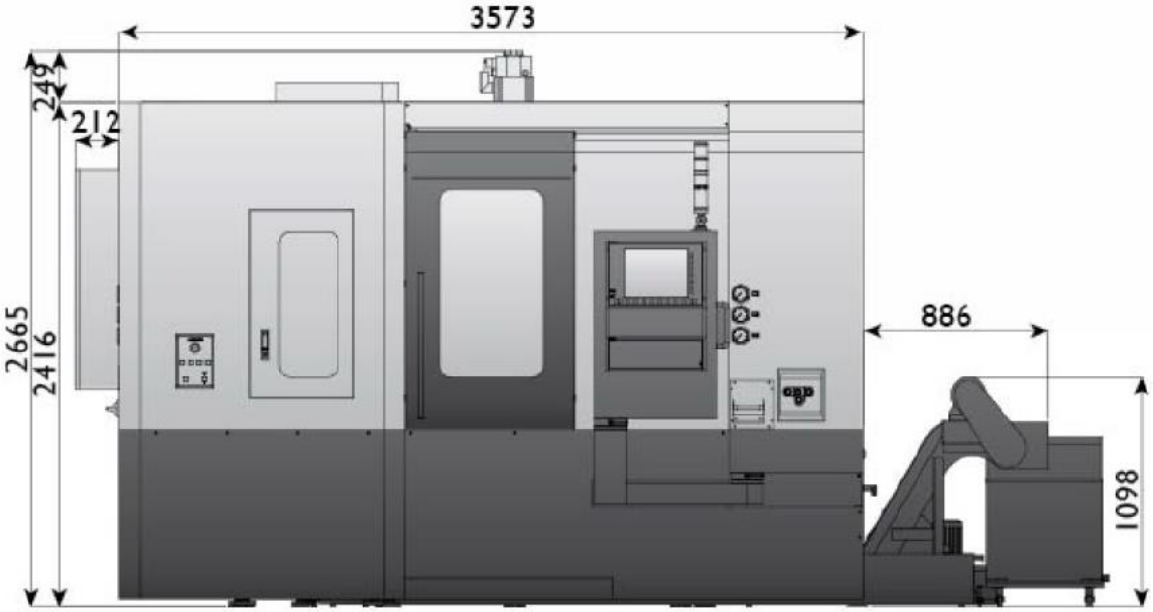
Metric

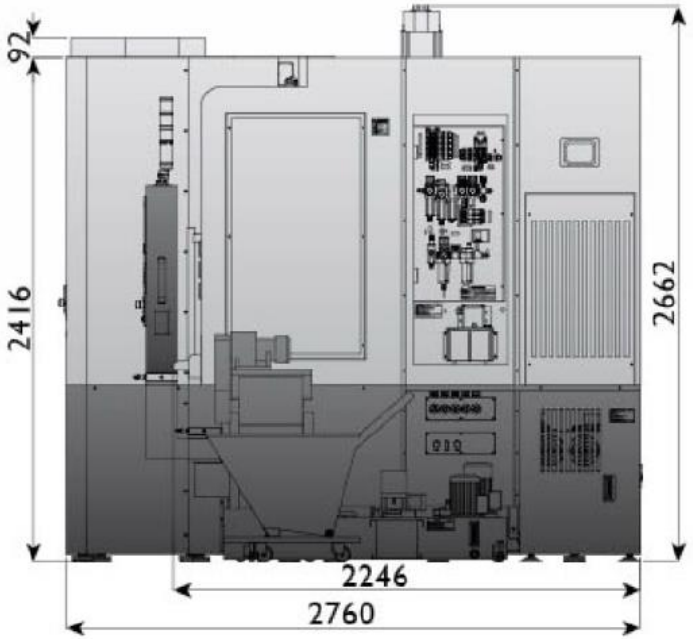
ORDER NUMBER	CATALOG NUMBER RIGHT HAND	L1	LPR	F	HW	BW	B2	NM	KG
2255545	KM63TSSTAR2525M	25	130	11	25	25	68	57	3,83
	LEFT HAND								
2255544	KM63TSSTAL2525M	25	130	11	25	25	68	57	3,83

Inch

ORDER NUMBER	CATALOG NUMBER RIGHT HAND	L1	LPR	F	HW	BW	B2	FT.LBS	LBS.
2384740	KM63TSSTAR16	.906	5.118	.443	1.00	1.00	2.70	42	8.46
	LEFT HAND								
2384741	KM63TSSTAL16	.906	5.118	.443	1.00	1.00	2.70	40	8.46

Dimension of the machine





Container loading: 1x 40'HQ	
Packing dimension:	
Main machine	411x230x257cm
Accessories	488x230x178cm

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Specification-1

Item		Unit	Numerical Value
Capacity	Max. swing over	mm	Ø540
	Max. machining dia.	mm	Ø350
	Max. Machining length	mm	700
	Max. workpiece dia.	mm	Ø350
	Slant angle of bed	°	0°
Turning spindle	Hydraulic chuck	inch	8”
	Spindle bore dia.	mm	Ø62
	Spindle nose	Type	A2-6
	Spindle bearing dia.	mm	Ø120
	Spindle speed	r.p.m	4900
Milling spindle	Tool shank		KM 63UT
	Power	kw	29.3kW(CONT)32.8kW(S2)35Kw(S6)
	Torque	Nm	160Nm
	Spindle speed	RPM	12000
	Spindle motor		INDRAMAT 1MBS162D
	Max. mllling tool	mm	Ø120x250L
	A-axis min. indexing	°	15°
	I ndexing time (90°)	sec	0.5
B-axis	Rotation angle	°	-110° ~ +110°
	Torque	Nm	1920
	B-axis min. indexing		0.001°
	Max. speed	RPM	16.7
	Repeatability accuracy	Sec	±3
	Servo motor		IFK7083(SIEMENS)

Specification-2

Item		Unit	Numerical Value
X-axis	Travel	mm	660
	Rapid feedrate	m/min	36
	Servo motor		IFK7101-5(SIEMENS)
Y-axis	Travel		±100
	Rapid feedrate	m/min	36
	Servo motor		IFK7101-5(SIEMENS)
Z-axis	Travel	mm	760
	Rapid feedrate	m/min	36
	Servo motor		IFK7101-5(SIEMENS)
W-axis	Travel	mm	745
	Rapid feedrate	m/min	30
	Servo motor		IFK7083-5(SIEMENS)
C-axis	Rotation angle	°	360°
	Max. speed	RPM	120
	Built-in motor	kw	ATE AC300/240/8
	C-axis min indexing		0.001°
	Power	kw	15kW(S1)/22kW(S3,40%)
	Torque	Nm	396.4
ATC	Tool no.	pcs	36, Opt: 72
	Max. tool dia.	Ø	80
	Max. tool length	mm	200
	Max. tool weight	Kg	5
	Tool change time (T-T)	s	5
Hydraulic system	Pressure	Kg	60
Controller	Model	Type	840D(SIEMENS)

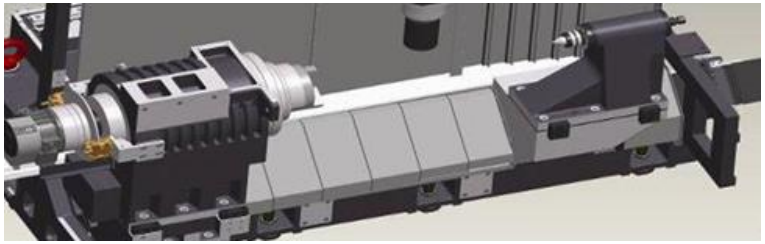
Standard

Specification

Standard specification

- Siemens 840D controller
- Milling spindle
Neo built-in spindle 12,000rpm (KM63)
Spindle motor: 15/22kw
- 36-tool ATC
- Coolant system
- Air conditioner on electrical cabinet
- Automatick lubrication sytem
- Full enclosure spalsh guard
- Chain type chip conveyor and chip cart
- Work lamp + end of program indicator (3-color)
- Leveling bolts and pades
- Tool kits
- Transformer (75KVA)
- Controller manuals
- Yida manuals
- Linear guide way

▼ Turn Mill + fixed type tailstock (Standard)

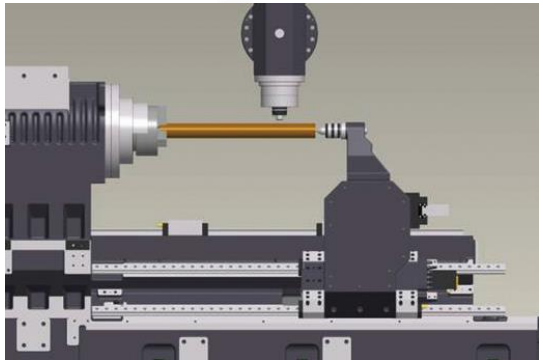


- Tuning spindle
A2-6 built-in spindle 4900rpm
Spindle motor (29/35kw)
AUTOGRIP 8" chuck , darw bar Φ65mm
1set Soft jaws and 1set Hard jaws
C-axis Heidenhain AK ERM 2480 angle encoder
- Programmable tailstock with MT4 Quill
- Foot pedal for chuck
- Taper sleeve (MT no. 2,3,4) x Φ40

OPTIONAL

Specification

▼ Turning/milling spindle + Multi-function tailstock



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- Taper sleeve (MT no. 2,3,4) x Φ40

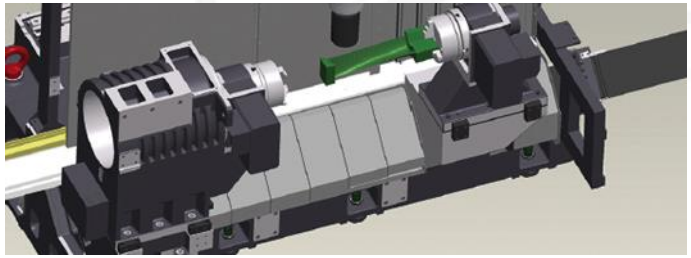
▼ Twin turning spindle / milling spindle

- Tuning spindle
A2-6 built-in spindle 4900rpm x 2 sets
Spindle motor (29/35kw) x 2 sets
AUTOGRIP 8" chuck , darw bar Φ65mm x 2 sets
2sets Soft jaws and 2sets Hard jaws
C-axis Heidenhain AK ERM 2480 angle encoder x 2 sets

OPTIONAL

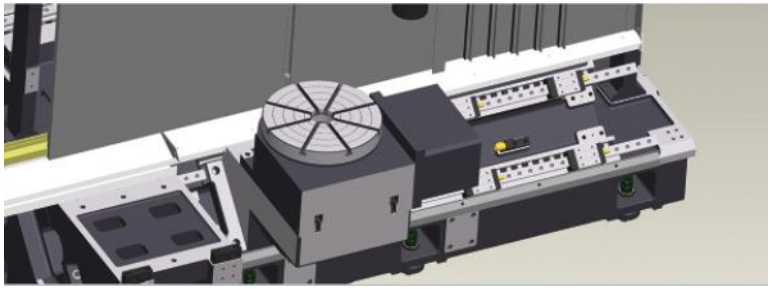
Specification

▼ Milling spindle + Twin rotary tables



- GSA CNC-200R rotary table
- GSA CNC-200L rotary table

▼ Milling spindle + single rotary tables



- GSA CNC-400R rotary table

ITEM / MODEL	CNC-200R/L	CNC-400R
Table Dia (mm/inch)	200 / 7.87	400 / 15.75
Center Height in Vertical (mm / inch)	160 / 6.3	250 / 9.84
Table Height in Horizontal (mm / inch)	165 / 6.5	250 / 9.84
Over all Height in Vertical Without Motor Cover (mm / inch)	265 / 10.63	460 / 18.11

OPTION

Optional Accessories

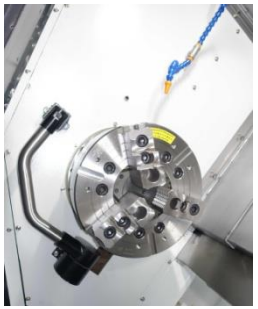
- Fanuc controller (4+1)
- Coolant through spindle
- Tool setter
- Workpiece measuring device
- Steady rest
- Oil skimmer
- Oil & Mist collector
- Collet chuck
- Air blow for workpiece
- Coolant gun
- Foot pedal for tailstock
- Bar feeder
- Bar feeder interface
- Parts catcher

Fanuc controller

CTS with Centrifugal Separator

CTS with filter tank

Oil skimmer



[Renishaw] HPPA or HPMA tool setter

Foot pedal for tailstock

[LNS] bar feeder

[Autoblok] hydraulic steady rest

Oil & Mist collector

Coolant gun

www.yidacnc.com YDPM

Positioning and Repeatability Accuracy

	Positioning accuracy	Repeatability accuracy
A-axis	8"	3"
C-axis	15"	15"
X-axis	0.006mm (with linear scale)	0.005mm (with linear scale)
Y-axis	0.006mm (with linear scale)	0.005mm (with linear scale)
Z-axis	0.006mm (with linear scale)	0.005mm (with linear scale)