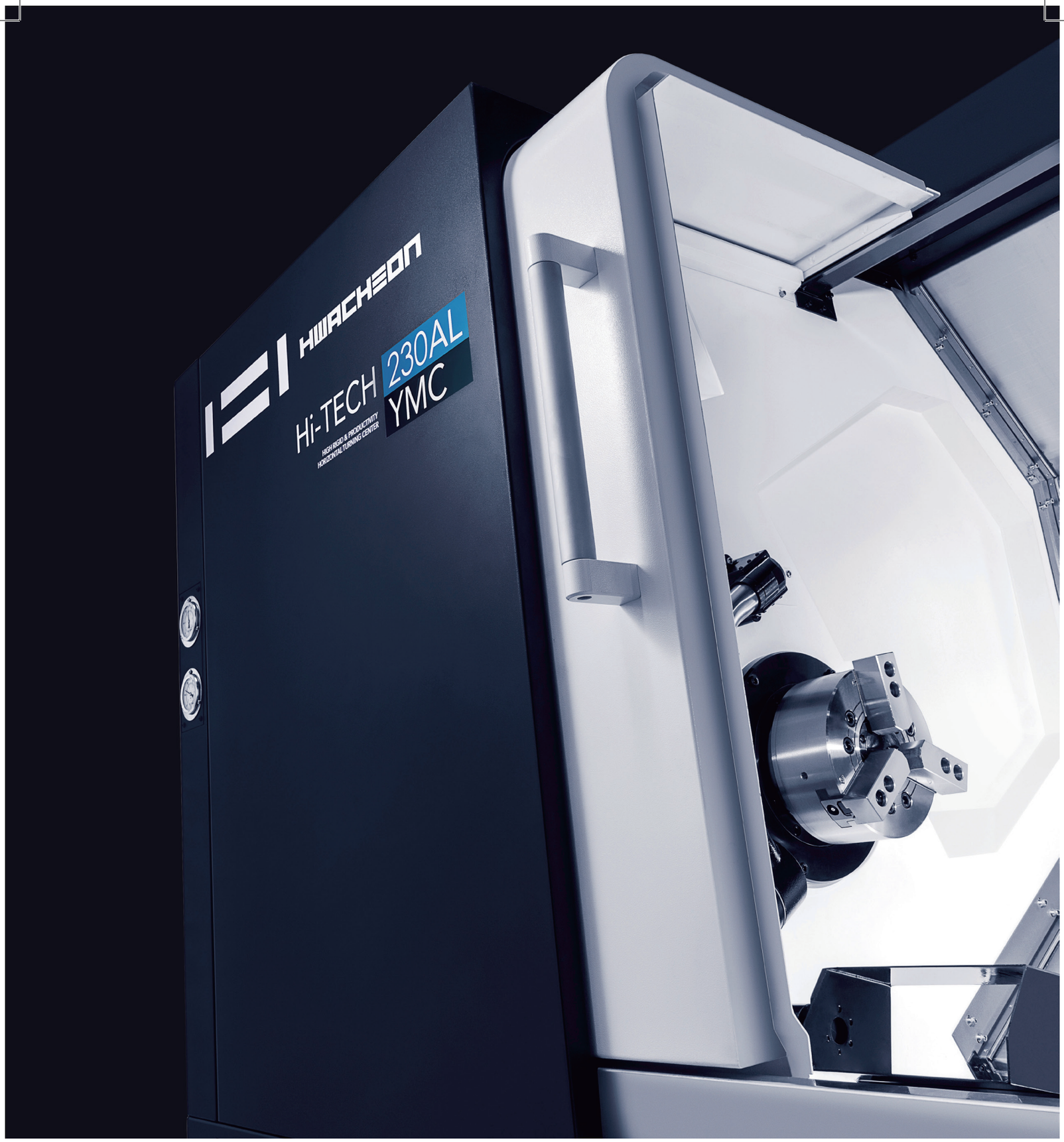
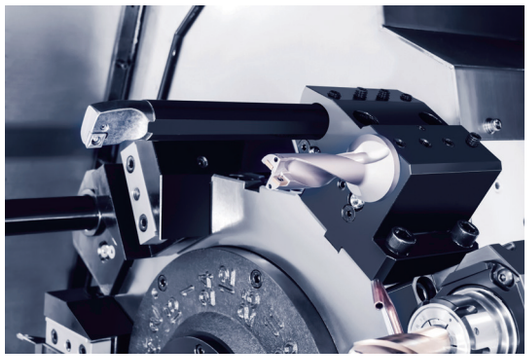


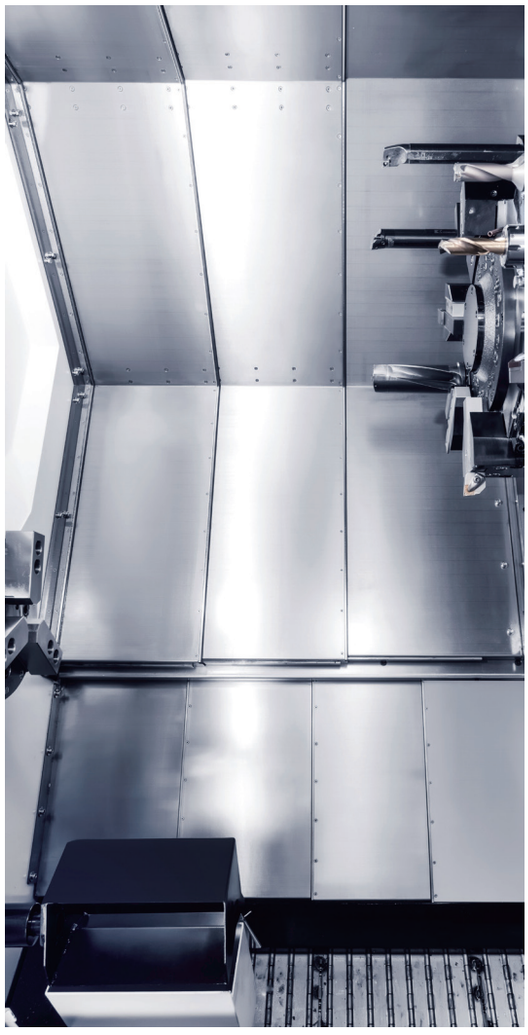
Hi-TECH 230

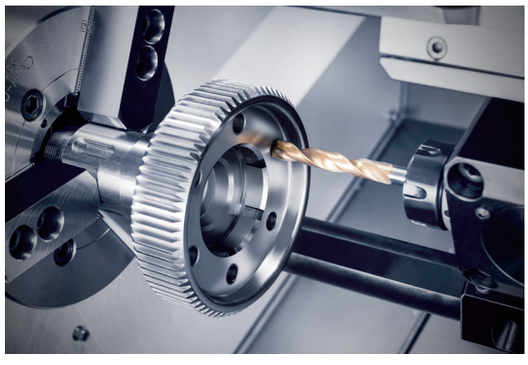
8-10" Chucker Box Way Type
Horizontal Turning Center

HWACHEON

Contents







New Standard for 8-10”
Lathe Faithful to the Basics

Hi-TECH 230 provides more reliable machining performance based on excellent machine rigidity and upgraded specifications compared to the existing 8-10” lathes with box-way structure, and provides greatly enhanced user convenience and maintainability. The Y-axis model has Y-axis stroke of up to ±60 mm (±2.36 inch), the largest in class.

Upgrades for Enhanced Machining Performance

1. Enhanced feed system rigidity for X and Y axes
2. Enhanced machine structure rigidity
3. Upgraded main spindle motor
4. The highest turnmill motor power in class
5. Extended max bar diameter
6. Possible to apply the 24 positions index turret

Enhanced User Convenience

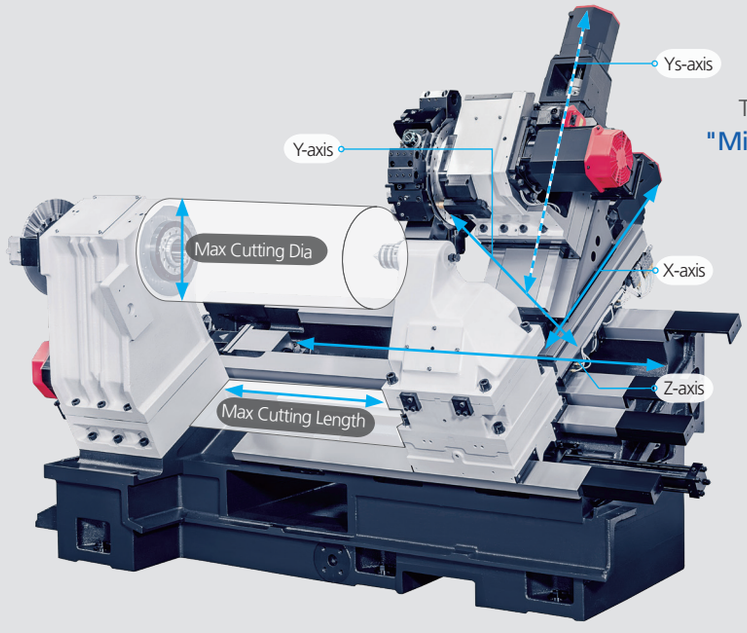
1. Lighter door to ease the operator's tiredness
2. Structure to prevent chip accumulation in the door bottom
3. 90˚ rotating operator panel
4. Optional software for user convenience (Operating and machining)

Easy Maintenance

1. Coolant tank placed at the front and easy to remove
2. Coolant level sensor applied as standard
3. Use of external coolant block prevents the leakage of turret inside

Basic Information

Basic Structure



"Increased Structural Rigidity of the Machine"
via FEM Analysis

The cutting area and the feed zone are separated to
"Minimize Thermal Displacement of the Frame"
caused by hot chips and coolant

"Slanted Bed Structure"
for easy chip disposal

"The Largest Cutting Area in its Class"

Max Cutting Dia Ø425 mm (Ø16.73 inch)

Max Cutting Length 1,143 mm (45 inch)

* Based on Hi-TECH 230AXL STD

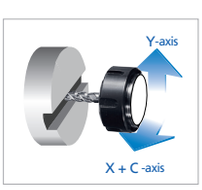
Type	Chuck Size inch	Max Stroke mm (inch)			Rapid Speed m/min (ipm)		
		X-axis	Z-axis	Y-axis	X-axis	Z-axis	Y-axis
Hi-TECH 230A/AL/AXL	8	240 (9.45)	460 (18.11) L:700 (27.56) XL:1,200 (47.24)	±60 (±2.36)	30 (1,181)	30 (1,181)	10 (394)
Hi-TECH 230B/BL/BXL	10						
Hi-TECH 230C/CL/CXL							

* L : Long Bed , XL : Extra Long Bed.

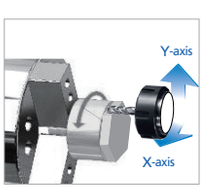
* Y-axis is YMC / YSMC Type Only.

Y-axis Machining

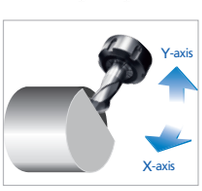
The largest Y-axis stroke in its class
"Maximized Y-axis Machining Performance"



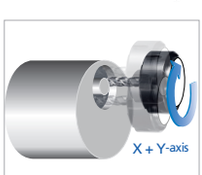
Finishing using Y-axis



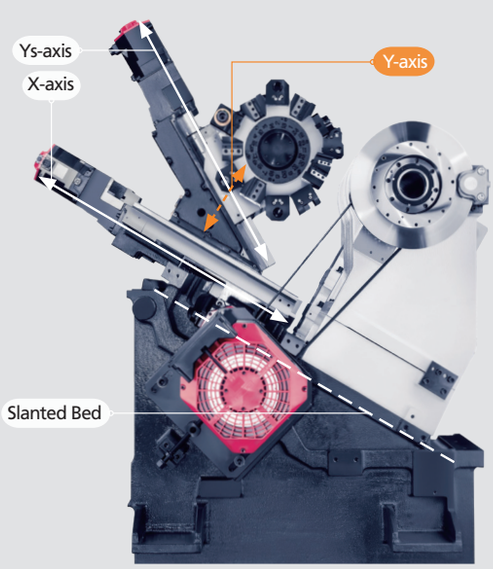
Multi-face machining



Milling at the position deviated from the center

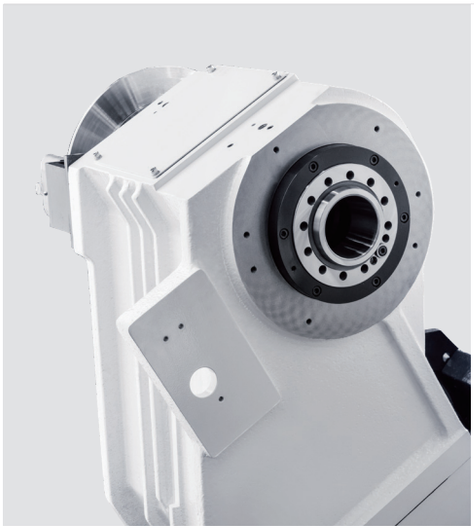


Circular interpolation for X and Y axes



Type	Y-axis Stroke mm (inch)	Y-axis Rapid Speed m/min (ipm)	Inclination Angle (deg)		
			Slanted Bed	X-axis	X-Ys axis
Hi-TECH 230 SERIES Y(S)MC	±60 (±2.36)	10 (394)	30		

Main Spindle



Enhanced high-power motor
compared to existing 8-10″ lathes
"Enhanced Cutting Performance and Productivity"

Max Spindle Speed **4,500** rpm

Spindle Motor **18.5** kW

* Based on Hi-TECH 230A

Minimized equipment installation space and placed the main spindle motor in a way to ensure easy application of the bar feeder

Type	Max Spindle Speed rpm	Spindle Motor kW (HP)	Spindle Torque Nm	Max Bar Size mm (inch)	Type of Spindle Nose ASA
Hi-TECH 230A/AL/AXL	4,500	18.5 / 15 (25 / 20)	330	Ø65 (Ø2.56)	A2-6
Hi-TECH 230B/BL/BXL	3,500		410	Ø81 (Ø3.19)	A2-8
Hi-TECH 230C/CL/CXL		22 / 18.5 (29 / 25)	703.5		

Tailstock

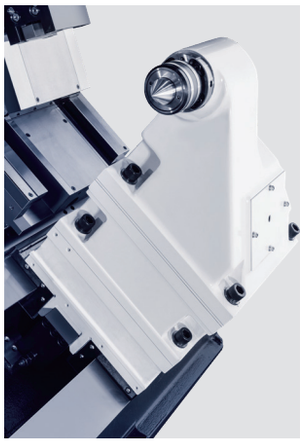
Short Type / Long Type

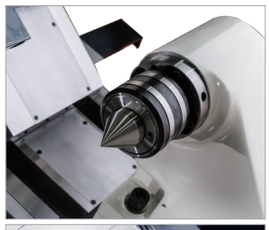
Its digital tailstock (hydraulic) makes setting materials convenient and implements fast cycle time as its setting time is shorter than that of a conventional equipment

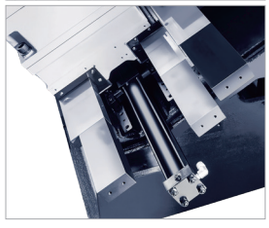
"Setting Time Reduced by 70% or More"

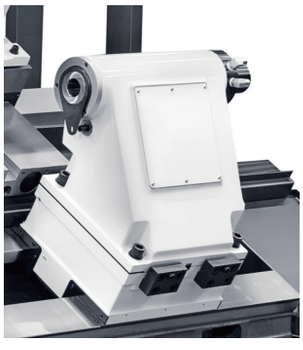
* Comparison of tailstock setting times when the 200 mm (7.87 inch) material is used

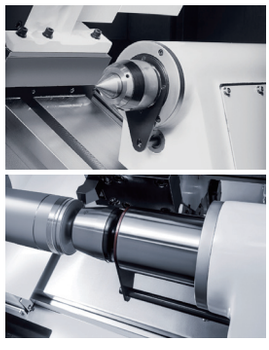
Type	Max Stroke mm (inch)	Cylinder Dia mm (inch)	Center Taper MT
Hi-TECH 230A/AL	460 (18.11) / L:700 (27.56)	Ø65 (Ø2.56)	#5
Hi-TECH 230B/BL			
Hi-TECH 230C/CL			











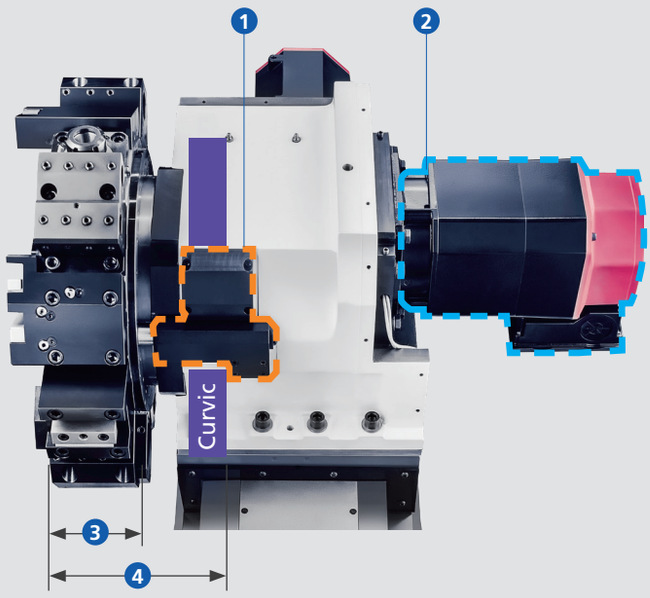
Extra Long Type

The Quill is activated by foot pedal or program.
Tailstock body of standard machine can be positioned by operator.

Type	Max Stroke mm (inch)	Quill Stroke mm (inch)	Cylinder Dia mm (inch)	Center Taper MT
Hi-TECH 230AXL	1,080 (42.52)	120 (4.72)	Ø100 (Ø3.94)	#5
Hi-TECH 230BXL				
Hi-TECH 230CXL				

Basic Information

Turret



1. Its external coolant block prevents leakage (cause of failure) of turret inside from the source.
2. The largest turnmill motor in class : 5.5 / 3.7 kW
3. Extended turret disk width
   - Standard model: The disk width extended by 25% compared to the existing model
   - MC model: BMT65 applied
4. Enhanced turret rigidity : The reduced distance between the disk and the curvic coupling decreases the moment imposed on the curvic by 24%.
5. Possible to apply 24 positions index turret

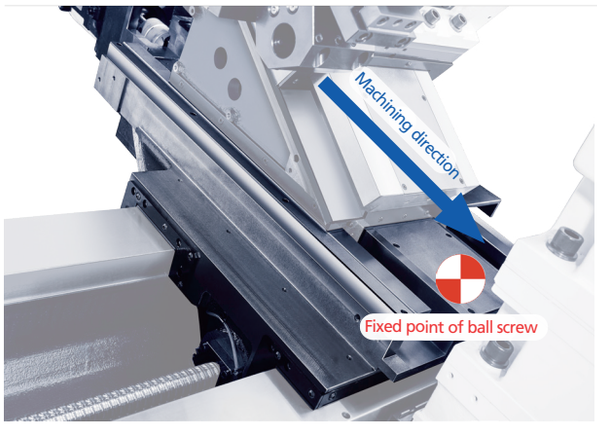
·Double O.D Holder

·Double I.D Holder

Type	Number of Tool Stations	Tool Size mm (inch)	Turret Indexing Time sec/step	Max Speed of Rotating Tool rpm	Disk Width mm (inch)
STD	12	O.D:□25 (□1) I.D:Ø40 (Ø1.5)	0.344	-	100 (3.94)
MC / YMC SMC / YSMC	12 (24 Positions Index)			5,000	

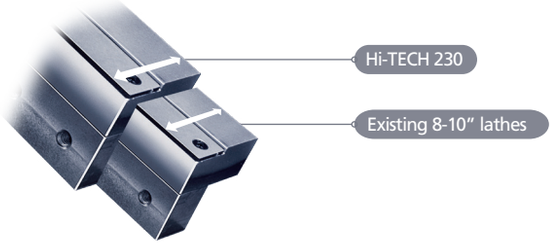
*The turret indexing time is the individual time based on 12 stations.

Feed System



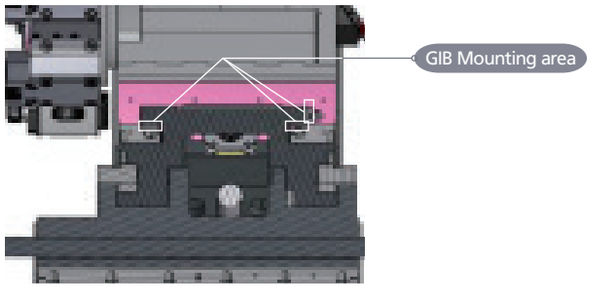
Changed fixed point of X-axis ball screw to minimize the machining error.

"Minimized Machining Error Caused by Thermal Displacement"



The guide way contact area is increased by 40%.

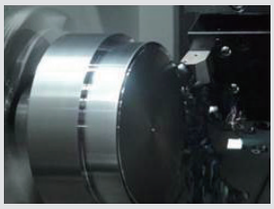
"Reinforced Feed System Rigidity"



"Easy Precision Control Using GIB"

Cutting Performance : Hi-TECH 230A

Material : Carbon Steel (SM45C)

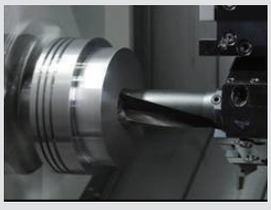


O.D Cutting

Material Dia mm (inch)	Cutting Speed m/min (ipm)	Feed mm/rev	Spindle Speed rpm	Cutting Depth mm (inch)	Material Removal Rate cm^3/min
182 (7.17)	220 (8,661)	0.27	421	6 (0.24)	356.4

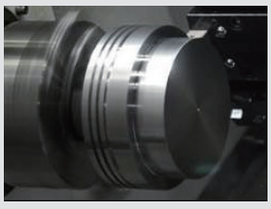
I.D Cutting

Process	Material Dia mm (inch)	Cutting Speed m/min (ipm)	Feed mm/rev	Spindle Speed rpm	Cutting Depth mm (inch)
Finishing	70.1 (2.76)	150 (5,906)	0.1	680	0.1 (0.004)
Roughing	72.5 (2.85)	100 (3,937)	0.34	428	1 (0.04)



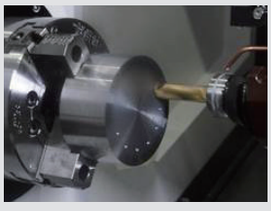
U-Drill

Tool Dia mm (inch)	Cutting Speed m/min (ipm)	Feed mm/rev	Spindle Speed rpm	Cutting Depth mm (inch)	Material Removal Rate cm^3/min
55 (2.17)	120 (4,724)	0.18	694	50 (1.97)	297



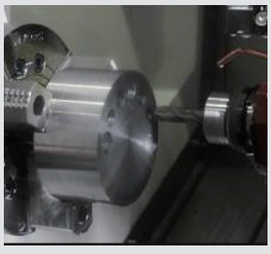
Groove

Cutting Speed m/min (ipm)	Insert Width mm (inch)	Feed mm/rev	Material Removal Rate cm^3/min
150 (5,906)	5 (0.2)	0.25	187.5



Turnmill Drill

Tool Dia mm (inch)	Cutting Speed m/min (ipm)	Feed mm/rev	Spindle Speed rpm	Cutting Depth mm (inch)	Material Removal Rate cm^3/min
20 (0.79)	30 (1,181)	0.1	478	30 (1.18)	15



Turnmill Tap

Process	Tap Size	Cutting Speed m/min (ipm)	Feed mm/rev	Spindle Speed rpm	Tapping Depth mm (inch)
Axial (Z-axis)	M16	30 (1,181)	2.0	597	25 (0.98)

Face Cutter

Tool Dia mm (inch)	Cutting Speed m/min (ipm)	Feed mm/min	Spindle Speed rpm	Cutting Depth mm (inch)	Material Removal Rate cm^3/min
63 (2.48)	198 (7,795)	300	1,000	4 (0.16)	75.6

* The machining results above are examples based on the factory test standards, and are subjected to the changes in conditions.

Detailed Information

Standard / Optional Accessories Status

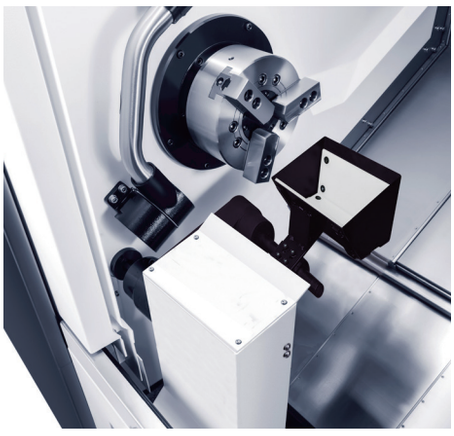
S : Standard O : Option X : Not available

NO.	Item	Description	Hi-TECH 230A			Hi-TECH 230AL					Hi-TECH 230AXL				
			STD	MC	YMC	STD	MC	YMC	SMC	YSMC	STD	MC	YMC	SMC	YSMC
1	Main Chuck	8 inch	S	S	S	S	S	S	S	S	S	S	S	S	S
2		10 inch	X	X	X	X	X	X	X	X	X	X	X	X	X
3		No Chuck	O	O	O	O	O	O	O	O	O	O	O	O	O
4	Sub Chuck	6 inch	X	X	X	X	X	X	S	S	X	X	X	S	S
5		No Chuck	X	X	X	X	X	X	O	O	X	X	X	O	O
6	Jaw	Soft Jaw	S	S	S	S	S	S	S	S	S	S	S	S	S
7		Hard Jaw	O	O	O	O	O	O	O	O	O	O	O	O	O
8	Chucking	Chucking Pressure Check Switch	O	O	O	O	O	O	O	O	O	O	O	O	O
9		Dual Pressure (C-axis brake)	X	O	O	X	O	O	O	O	X	O	O	O	O
10		Dual Pressure (Chuck)	O	O	O	O	O	O	O	O	O	O	O	O	O
11		Chuck Pressure Compensation	O	O	O	O	O	O	O	O	O	O	O	O	O
12		Chuck Clamp / Unclamp Switch	O	O	O	O	O	O	O	O	O	O	O	O	O
13	Turret	Standard (12 Station turret with Turning Tool only)	S	X	X	S	X	X	X	X	S	X	X	X	X
14		BMT65 Turnmill (12 Station turret with Turnmill)	X	S	S	X	S	S	S	S	X	S	S	S	S
15		24 Positions (12 Station turret with Turnmill)	X	S	S	X	S	S	S	S	X	S	S	S	S
16		Axial Driven Holder (BMT65)	X	O	O	X	O	O	O	O	X	O	O	O	O
17		Radial Driven Holder (BMT65)	X	O	O	X	O	O	O	O	X	O	O	O	O
18		U-Drill Holder Cap	S	S	S	S	S	S	S	S	S	S	S	S	S
19		Double O.D Holder (for 24 Positions, 20X20) (Main / Sub)	X	O	O	X	O	O	O	O	X	O	O	O	O
20		Double O.D Holder (for 24 Positions, 25X25) (Main & Sub)	X	X	X	X	X	X	S	S	X	X	X	S	S
21		Double I.D Holder (for 24 Positions, Ø25)	X	O	O	X	O	O	O	O	X	O	O	O	O
22		Double I.D Holder (for 24 Positions, Ø32)	X	X	X	X	X	X	S	S	X	X	X	S	S
23		VDI 40 (12 Station turret with 12 positions and Turning Tool only)	O	X	X	O	X	X	X	X	O	X	X	X	X
24		VDI 40 Turnmil (12 Station turret with 12 positions)	X	O	O	X	O	O	O	O	X	O	O	O	O
25		VDI 40 O.D Holder	O	O	O	O	O	O	O	O	O	O	O	O	O
26		VDI 40 I.D Holder	O	O	O	O	O	O	O	O	O	O	O	O	O
27		VDI 40 Face Holder	O	O	O	O	O	O	O	O	O	O	O	O	O
28		Axial Driven Holder (for VDI 40 Turnmill)	X	O	O	X	O	O	O	O	X	O	O	O	O
29		Radial Driven Holder (for VDI 40 Turnmill)	X	O	O	X	O	O	O	O	X	O	O	O	O
30		U-Drill Holder (for VDI 40)	O	O	O	O	O	O	O	O	O	O	O	O	O
31	Tailstock	Digital Tailstock (use Hydraulic Cylinder)	S	S	S	S	S	S	X	X	X	X	X	X	X
32		Servo Tailstock (use Servo Motor & Ball Screw)	O	O	O	O	O	O	X	X	O	O	O	X	X
33		Body & Quill Programmable Tailstock	X	X	X	X	X	X	X	X	S	S	S	X	X
34	Steady Rest	Base for Steady Rest *Selecting both the Steady rest base and part catcher to be installed is not possible.	X	X	X	X	X	X	X	X	O	O	O	X	X
35	Coolant Pump	0.05 MPa	S	S	S	S	S	S	S	S	S	S	S	S	S
36		0.6 / 1.5 / 3 / 7 MPa *For 7 MPa, only water soluble coolants are available	O	O	O	O	O	O	O	O	O	O	O	O	O
37	Coolant Options	Coolant Gun	O	O	O	O	O	O	O	O	O	O	O	O	O
38		Coolant Blow	O	O	O	O	O	O	O	O	O	O	O	O	O
39		Coolant Level Sensor	S	S	S	S	S	S	S	S	S	S	S	S	S
40		Coolant Chiller	O	O	O	O	O	O	O	O	O	O	O	O	O
41		Oil Skimmer	O	O	O	O	O	O	O	O	O	O	O	O	O
42		Large Capacity Coolant Tank	O	O	O	O	O	O	O	O	O	O	O	O	O
43	Chip Disposal	Air Blower	O	O	O	O	O	O	S	S	O	O	O	S	S
44		Side / Back Type Chip Conveyor (Hinge / Scraper Type) *Back type can be used only in short type	O	O	O	O	O	O	O	O	O	O	O	O	O
45		Mist Collector (Interface)	O	O	O	O	O	O	O	O	O	O	O	O	O
46	Automation	Tool Presetter (Manual / Automation)	O	O	O	O	O	O	O	O	O	O	O	O	O
47		Parts Catcher (Main)	O	O	O	O	O	O	O	O	O	O	O	O	O
48		Parts Catcher (Sub) *Selecting both sub spindle part catcher and main spindle part catcher to be installed is not possible.	X	X	X	X	X	X	X	O	X	X	X	X	X
49		Workpiece Air Ejector & Through Coolant (for Sub Spindle)	X	X	X	X	X	X	O	O	X	X	X	O	O
50		Barfeeder Interface	O	O	O	O	O	O	O	O	O	O	O	O	O
51		Auto Door	O	O	O	O	O	O	O	O	O	O	O	O	O
52		Part Conveyor	O	O	O	O	O	O	O	O	O	O	O	O	O
53		Robot Interface	O	O	O	O	O	O	O	O	O	O	O	O	O
54		Tool & Work Counter (Internal / External)	O	O	O	O	O	O	O	O	O	O	O	O	O
55	Software	Tool Load Detect (L-HTLD)	S	S	S	S	S	S	S	S	S	S	S	S	S
56		Arbitrary Speed Threading	O	O	O	O	O	O	O	O	O	O	O	O	O
57		Tool Life Management	S	S	S	S	S	S	S	S	S	S	S	S	S
58		Automatic Tool Offset (Tool Presetter option is required)	S	S	S	S	S	S	S	S	S	S	S	S	S
59		Lathe Calculator Function (L-CAL)	S	S	S	S	S	S	S	S	S	S	S	S	S
60		Work / Tool Management (L-COUNT)	S	S	S	S	S	S	S	S	S	S	S	S	S
61		Workpiece Clamp of Chuck (L-WCMP)	O	O	O	O	O	O	O	O	O	O	O	O	O
62		Monitoring Solution of Real-time Operational Status (M-VISION Pro)	O	O	O	O	O	O	O	O	O	O	O	O	O
63		Hwacheon Lathe Vibration Control System (HLVC)	S	S	S	S	S	S	S	S	S	S	S	S	S
64		M-Code & G-Code List Help	S	S	S	S	S	S	S	S	S	S	S	S	S
65	ETC	Linear Scale (X / Z)	O	O	O	O	O	O	O	O	O	O	O	O	O
66		NC Cooler	O	O	O	O	O	O	O	O	O	O	O	O	O
67		Signal Lamp with 3 Color (R / G / Y)	S	S	S	S	S	S	S	S	S	S	S	S	S
68		Transformer	O	O	O	O	O	O	O	O	O	O	O	O	O
69		Manual Guide i	S	S	S	S	S	S	S	S	S	S	S	S	S
70		15" Non touch display	S	S	S	S	S	S	S	S	S	S	S	S	S
71		15" Touch type display	O	O	O	O	O	O	O	O	O	O	O	O	O

S : Standard O : Option X : Not available

NO.	Item	Description	Hi-TECH 230B/C			Hi-TECH 230BL/CL					Hi-TECH 230BXL/CXL				
			STD	MC	YMC	STD	MC	YMC	SMC	YSMC	STD	MC	YMC	SMC	YSMC
1	Main Chuck	8 inch	X	X	X	X	X	X	X	X	X	X	X	X	X
2		10 inch	S	S	S	S	S	S	S	S	S	S	S	S	S
3		No Chuck	O	O	O	O	O	O	O	O	O	O	O	O	O
4	Sub Chuck	6 inch	X	X	X	X	X	X	S	S	X	X	X	S	S
5		No Chuck	X	X	X	X	X	X	O	O	X	X	X	O	O
6	Jaw	Soft Jaw	S	S	S	S	S	S	S	S	S	S	S	S	S
7		Hard Jaw	O	O	O	O	O	O	O	O	O	O	O	O	O
8	Chucking	Chucking Pressure Check Switch	O	O	O	O	O	O	O	O	O	O	O	O	O
9		Dual Pressure (C-axis brake)	X	O	O	X	O	O	O	O	X	O	O	O	O
10		Dual Pressure (Chuck)	O	O	O	O	O	O	O	O	O	O	O	O	O
11		Chuck Pressure Compensation	O	O	O	O	O	O	O	O	O	O	O	O	O
12		Chuck Clamp / Unclamp Switch	O	O	O	O	O	O	O	O	O	O	O	O	O
13	Turret	Standard (12 Station turret with Turning Tool only)	S	X	X	S	X	X	X	X	S	X	X	X	X
14		BMT65 Turnmill (12 Station turret with Turnmill)	X	S	S	X	S	S	S	S	X	S	S	S	S
15		24 Positions (12 Station turret with Turnmill)	X	S	S	X	S	S	S	S	X	S	S	S	S
16		Axial Driven Holder (BMT65)	X	S	S	X	S	S	S	S	X	S	S	S	S
17		Radial Driven Holder (BMT65)	X	S	S	X	S	S	S	S	X	S	S	S	S
18		U-Drill Holder Cap	S	S	S	S	S	S	S	S	S	S	S	S	S
19		Double O.D Holder (for 24 Positions, 20X20) (Main / Sub)	X	O	O	X	O	O	O	O	X	O	O	O	O
20		Double O.D Holder (for 24 Positions, 25X25) (Main & Sub)	X	X	X	X	X	X	S	S	X	X	X	S	S
21		Double I.D Holder (for 24 Positions, Ø25)	X	O	O	X	O	O	O	O	X	O	O	O	O
22		Double I.D Holder (for 24 Positions, Ø32)	X	X	X	X	X	X	S	S	X	X	X	S	S
23		VDI 40 (12 Station turret with 12 positions and Turning Tool only)	O	X	X	O	X	X	X	X	O	X	X	X	X
24		VDI 40 Turnmil (12 Station turret with 12 positions)	X	O	O	X	O	O	O	O	X	O	O	O	O
25		VDI 40 O.D Holder	O	O	O	O	O	O	O	O	O	O	O	O	O
26		VDI 40 I.D Holder	O	O	O	O	O	O	O	O	O	O	O	O	O
27		VDI 40 Face Holder	O	O	O	O	O	O	O	O	O	O	O	O	O
28		Axial Driven Holder (for VDI 40 Turnmill)	X	O	O	X	O	O	O	O	X	O	O	O	O
29		Radial Driven Holder (for VDI 40 Turnmill)	X	O	O	X	O	O	O	O	X	O	O	O	O
30		U-Drill Holder (for VDI 40)	O	O	O	O	O	O	O	O	O	O	O	O	O
31	Tailstock	Digital Tailstock (use Hydraulic Cylinder)	S	S	S	S	S	S	X	X	X	X	X	X	X
32		Servo Tailstock (use Servo Motor & Ball Screw)	O	O	O	O	O	O	X	X	O	O	O	X	X
33		Body & Quill Programmable Tailstock	X	X	X	X	X	X	X	X	S	S	S	X	X
34	Steady Rest	Base for Steady Rest *Selecting both the Steady rest base and part catcher to be installed is not possible.	X	X	X	X	X	X	X	X	O	O	O	X	X
35	Coolant Pump	0.05 MPa	S	S	S	S	S	S	S	S	S	S	S	S	S
36		0.6 / 1.5 / 3 / 7 MPa *For 7 MPa, only water soluble coolants are available	O	O	O	O	O	O	O	O	O	O	O	O	O
37	Coolant Options	Coolant Gun	O	O	O	O	O	O	O	O	O	O	O	O	O
38		Coolant Blow	O	O	O	O	O	O	O	O	O	O	O	O	O
39		Coolant Level Sensor	S	S	S	S	S	S	S	S	S	S	S	S	S
40		Coolant Chiller	O	O	O	O	O	O	O	O	O	O	O	O	O
41		Oil Skimmer	O	O	O	O	O	O	O	O	O	O	O	O	O
42		Large Capacity Coolant Tank	O	O	O	O	O	O	O	O	O	O	O	O	O
43	Chip Disposal	Air Blower	O	O	O	O	O	O	S	S	O	O	O	S	S
44		Side / Back Type Chip Conveyor (Hinge / Scraper Type) *Back type can be used only in short type	O	O	O	O	O	O	O	O	O	O	O	O	O
45		Mist Collector (Interface)	O	O	O	O	O	O	O	O	O	O	O	O	O
46	Automation	Tool Presetter (Manual / Automation)	O	O	O	O	O	O	O	O	O	O	O	O	O
47		Parts Catcher (Main)	O	O	O	O	O	O	O	O	O	O	O	O	O
48		Parts Catcher (Sub) *Selecting both sub spindle part catcher and main spindle part catcher to be installed is not possible.	X	X	X	X	X	X	X	O	X	X	X	X	X
49		Workpiece Air Ejector & Through Coolant (for Sub Spindle)	X	X	X	X	X	X	O	O	X	X	X	O	O
50		Barfeeder Interface	O	O	O	O	O	O	O	O	O	O	O	O	O
51		Auto Door	O	O	O	O	O	O	O	O	O	O	O	O	O
52		Part Conveyor	O	O	O	O	O	O	O	O	O	O	O	O	O
53		Robot Interface	O	O	O	O	O	O	O	O	O	O	O	O	O
54		Tool & Work Counter (Internal / External)	O	O	O	O	O	O	O	O	O	O	O	O	O
55	Software	Tool Load Detect (L-HTLD)	S	S	S	S	S	S	S	S	S	S	S	S	S
56		Arbitrary Speed Threading	O	O	O	O	O	O	O	O	O	O	O	O	O
57		Tool Life Management	S	S	S	S	S	S	S	S	S	S	S	S	S
58		Automatic Tool Offset (Tool Presetter option is required)	S	S	S	S	S	S	S	S	S	S	S	S	S
59		Lathe Calculator Function (L-CAL)	S	S	S	S	S	S	S	S	S	S	S	S	S
60		Work / Tool Management (L-COUNT)	S	S	S	S	S	S	S	S	S	S	S	S	S
61		Workpiece Clamp of Chuck (L-WCMP)	O	O	O	O	O	O	O	O	O	O	O	O	O
62		Monitoring Solution of Real-time Operational Status (M-VISION Pro)	O	O	O	O	O	O	O	O	O	O	O	O	O
63		Hwacheon Lathe Vibration Control System (HLVC)	S	S	S	S	S	S	S	S	S	S	S	S	S
64		M-Code & G-Code List Help	S	S	S	S	S	S	S	S	S	S	S	S	S
65	ETC	Linear Scale (X / Z)	O	O	O	O	O	O	O	O	O	O	O	O	O
66		NC Cooler	O	O	O	O	O	O	O	O	O	O	O	O	O
67		Signal Lamp with 3 Color (R / G / Y)	S	S	S	S	S	S	S	S	S	S	S	S	S
68		Transformer	O	O	O	O	O	O	O	O	O	O	O	O	O
69		Manual Guide i	S	S	S	S	S	S	S	S	S	S	S	S	S
70		15" Non touch display	S	S	S	S	S	S	S	S	S	S	S	S	S
71		15" Touch type display	O	O	O	O	O	O	O	O	O	O	O	O	O

Detailed Information



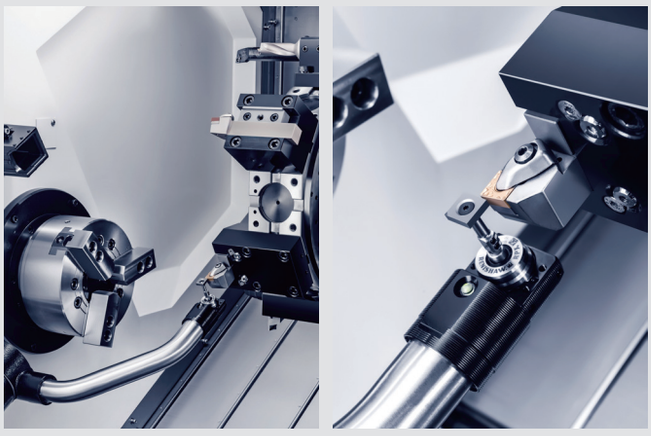
Parts Catcher - Main / Sub (OPT)

The bucket type is designed with connected linkage applicable to a variety of part shapes. The bucket catches and carries parts into the collection box.

– Max machinable workpiece size

→ Ø81 x 160 mm (Ø3.19 x 6.3 inch)

* Selecting both sub spindle part catcher and main spindle part catcher to be installed is not possible.
* Sub Spindle Part catcher can be used only in LYSMC
* Selecting both the Steady rest base and part catcher to be installed is not possible.



Tool Presetter (OPT)

Available functions with automatic tool presetter

- With a simple touch on the sensor, it perfectly sets the coordinate system (within 15 seconds per tool).
- The tool shape error value is automatically calculated and entered.
- The automatic coordinate system is promptly configured according to the material geometry.

Automatic Coolant System (STD)

External Coolant Tank

A coolant tank is placed at the front of the machine for easy coolant exchange as well as easy tank cleaning and pump maintenance. Particularly, it is possible to separate the tank only without removing the chip conveyor for easy tank cleaning.

Mesh Chip Filter

A 3-layered mesh chip filter, which is able to sort from long chips to micro chips, extends the service life of the coolant pump.

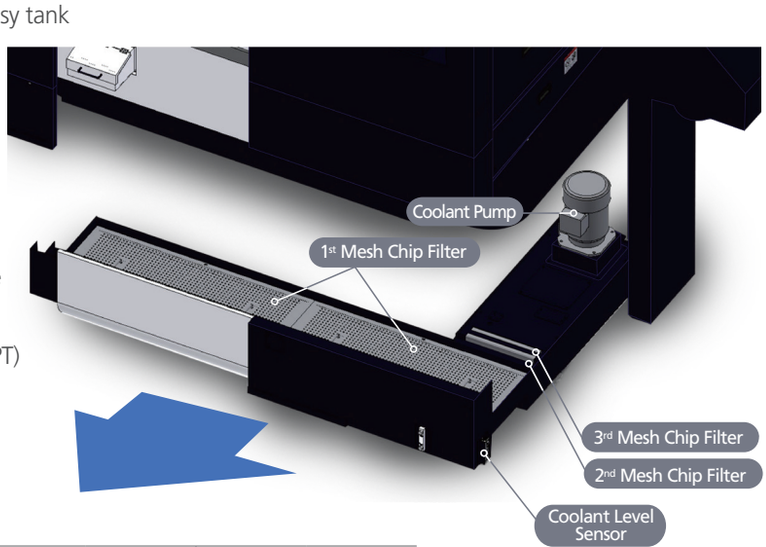
Various Options

- Standard Coolant Pump : 0.05 MPa
- Optional Coolant Pump

→ 0.6 / 1.5 / 3 / 7 MPa

*For 7 MPa, only water soluble coolants are available

- Oil Skimmer (OPT)
- Lift-up Chip Conveyor : Hinge / Scraper Type (OPT)



Power

0.4 kW (for Turret)

Tank Capacity

	Unit	Short Type		Long Type		XL Type	
		STD / MC	YMC	STD / (S)MC	Y(S)MC	STD / (S)MC	Y(S)MC
STD	ℓ (gal)	115 (30.38)	125 (33.02)	125 (33.02)	140 (36.98)	150 (39.63)	165 (43.59)
Large (OPT)	ℓ (gal)	200 (52.83)	210 (55.48)	210 (55.48)	225 (59.44)	235 (62.08)	250 (66.04)

Convenient Operator Panel

90˚ Rotating Operator Panel (STD)

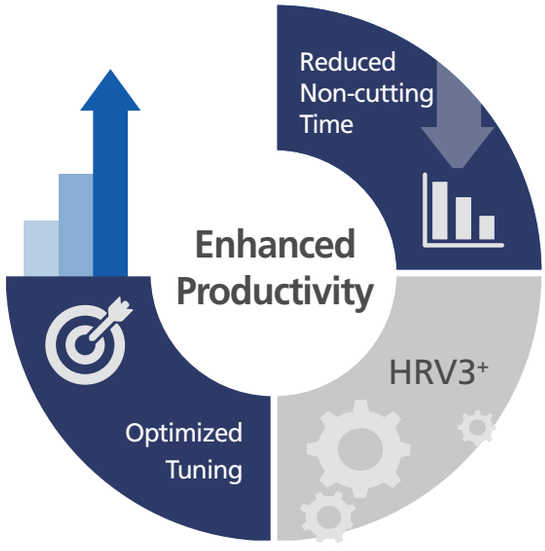
The operator panel is newly designed from the operator's viewpoint and thus enhances the operator's convenience

"User Friendly Design"

- 15" display as standard (Non-touch Type Display)
- QWERTY Key MDI
- Part Program Storage Length : 2MB
- Number of Register Able Programs : Max 1,000ea
- Enhanced operability by optimizing the layout and improving the touch feeling of control buttons.
- Long time continuous DNC operation with the CF card even without the data server.

Machine Optimization (STD)

- The cycle machining as well as the operating time and the acceleration / deceleration speed of feed system are optimized.
- Dramatically reduced non-cutting time during machining ensures optimal productivity.
- High precision, speed and smoothness are realized using the cutting-edge machining technology.
- Machining surface quality enhanced by HRV3^{+} control. (HRV3^{+}: effectively prevents machine oscillation by controlling the servo current to enhance the machining surface quality.)



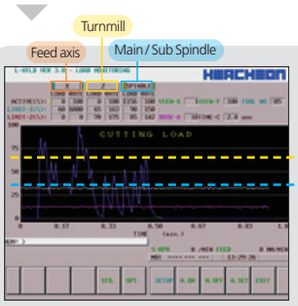
"Enhanced Productivity"

Detailed Information

Hwacheon Software

L-HTLD Lathe Hwacheon Tool Load Detect system

Lathe Hwacheon Tool Load Detect System (STD)



It monitors the load factors of spindles and each axis during lathe (turnmill) machining and provides the following benefits to customers.

1. Tool life management

Generates an alarm for excessive insert wear (overload)

2. Optimized process

Able to control individual machining conditions per insert wear

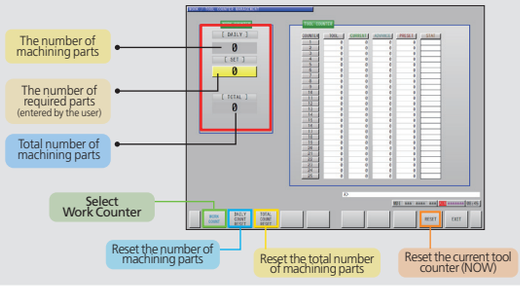
3. Able to quickly respond to wear and damage of tools

Generates a replacement alarm in the event of an insert damage

L-COUNT Lathe Work / Tool Counter Management

Lathe Work / Tool Counter Management (STD)

You can monitor the daily / total production quantity and tool usages.



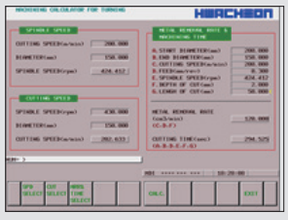
Tool Count Management : 25 tools

- Counter number display (COUNTER)
- Select tool number (TOOL)
- Display current tool counter (CURRENT)
- TOOL replacement forecast through message (ADVANCE)
- Tool replacement notification through alarm (PRESET)
- Display current tool counter status (STAT)

L-CAL Lathe Calculator Function

Lathe Calculator Function (STD)

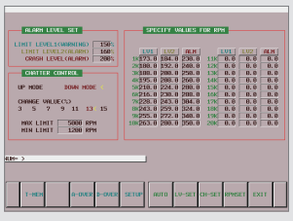
You can enter values required for machining directly from the display operator panel for an easy calculation without a calculator.



- The number of optimal main spindle speed
- The cutting speed
- Material removal rate (MRR)
- The cutting time

Lathe Vibration Control System (STD)

It is possible to monitor the vibrations, and to remove chattering during the machining process in real-time.



- Real-time vibration monitoring
- Check for Chatter Occurrence
- Alarm on Chatter Found
- Automatic reduction control in chatter

Monitoring Solution of Real-time Operational Status Plus/Pro (OPT)

Real-time operational status monitoring system for the User's factory machine management.

M-VISION Plus

- Monitoring of real-time operational status
- Mobile app supported
- Machining history saving, retrieving and statistics
- Statistics on operational efficiency and history by equipment

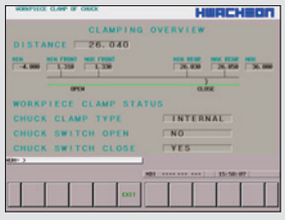
M-VISION Pro

- Real-time machine operation status monitoring
- Mobile app supported
- Saving machining/alarm history, retrieving and statistics
- Statistics on operational efficiency and history by equipment/by equipment in total , operator, and arbitrary set period
- Machining Management

L-WCMP Lathe Workpiece Clamp of Chuck

Lathe Workpiece Clamp of Chuck (OPT)

To complement the drawback of the proximity switch of which the position should be adjusted according to the material diameter, the analog sensor (0-10V) is used to set the distances of the open and close zones from the operating screen for enhanced user convenience.
(However, it is necessary to discuss with factory in advance whether it is possible to mount the analog sensor.)

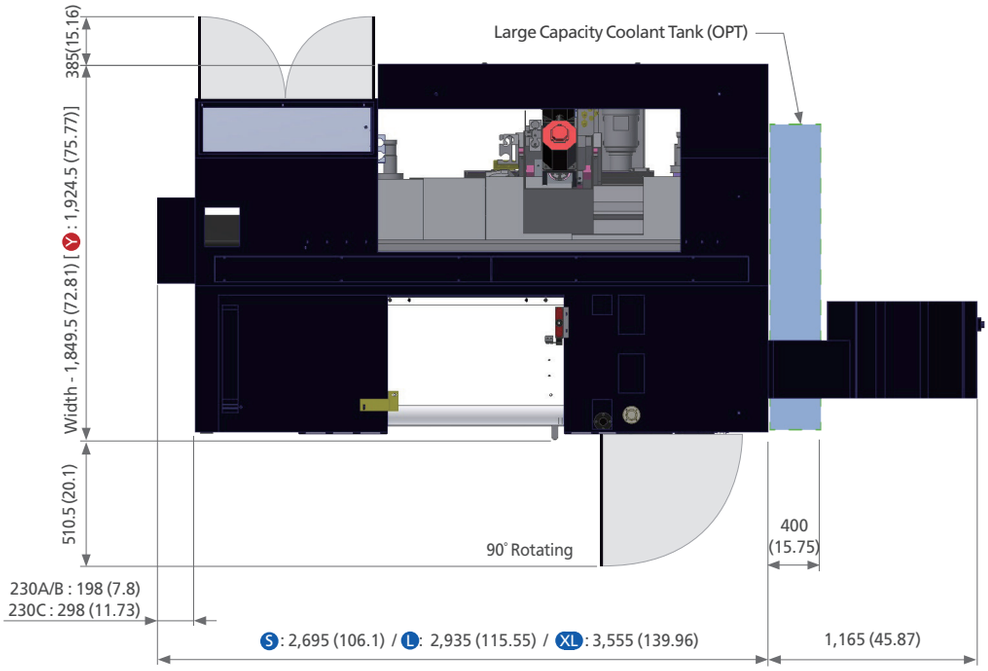


- View the chuck open / close state
- Change the driving condition according to the chuck type (inner and outer diameters)
- Set the chuck open / close zone
- An alarm is generated if the chuck function fails

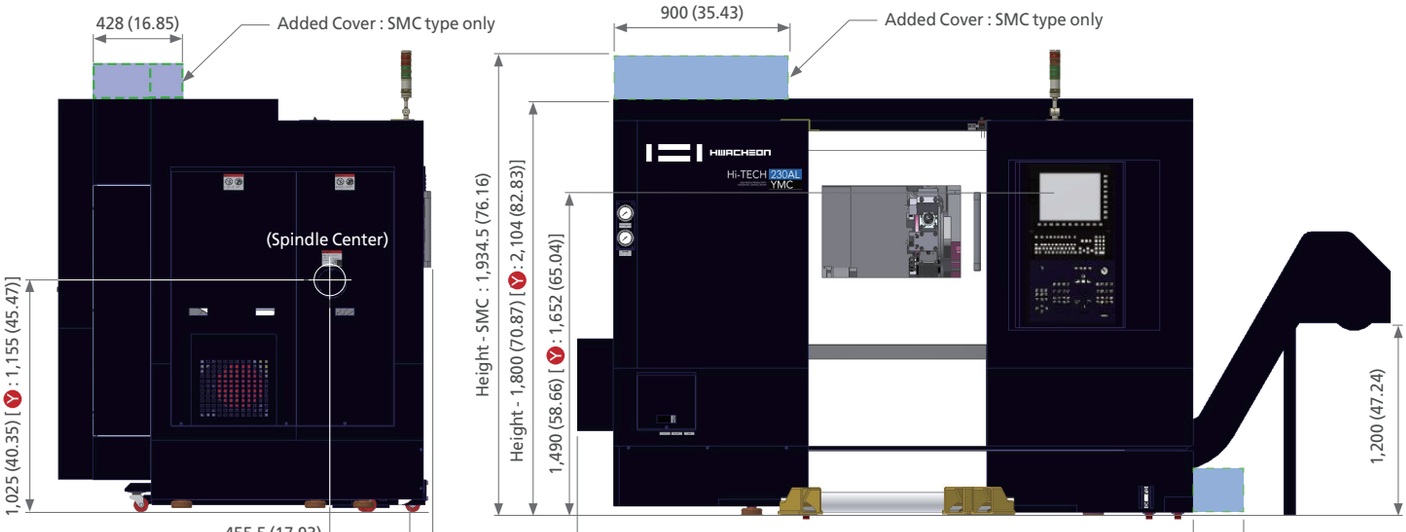
Machine Size

(S) Short Type (L) Long Type (XL) Extra Long Type (Y) Y-axis

* Unit : mm (inch)



Top



Side

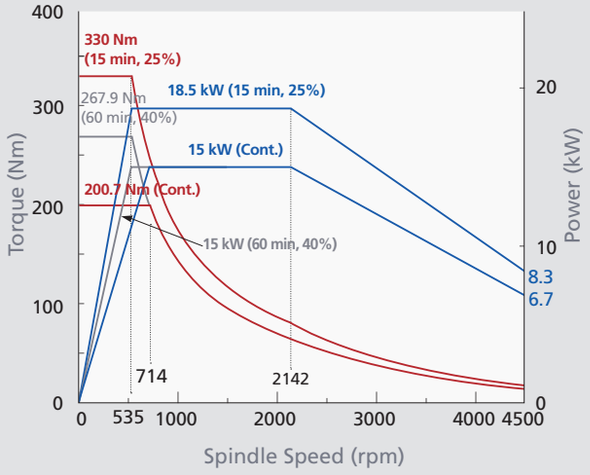
Front

Detailed Information

Spindle Power – Torque Diagram

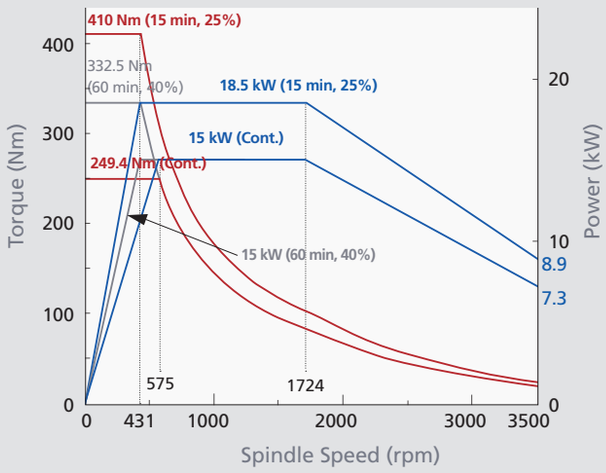
4,500 rpm (Hi-TECH 230A)

Max Power : 18.5 kW (25 HP) / Max Torque : 330 Nm



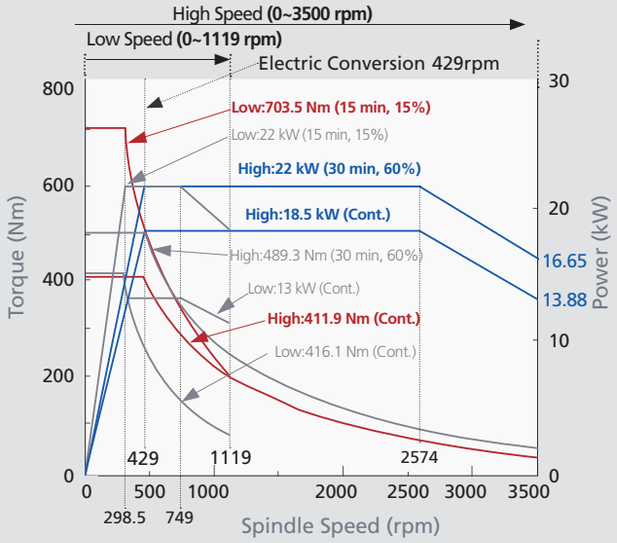
3,500 rpm (Hi-TECH 230B)

Max Power : 18.5 kW (25 HP) / Max Torque : 410 Nm



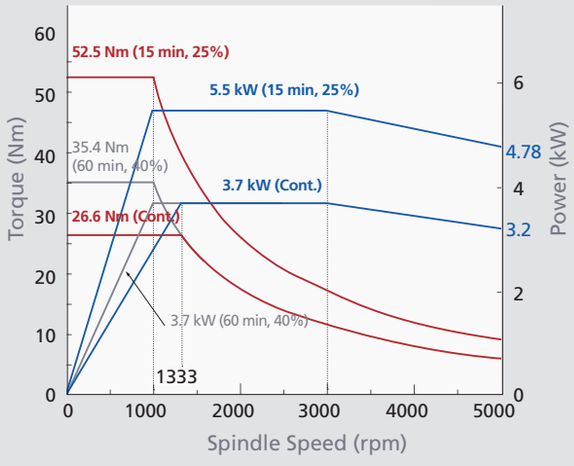
3,500 rpm (Hi-TECH 230C)

Max Power : 22 kW (29 HP) / Max Torque : 703.5 Nm



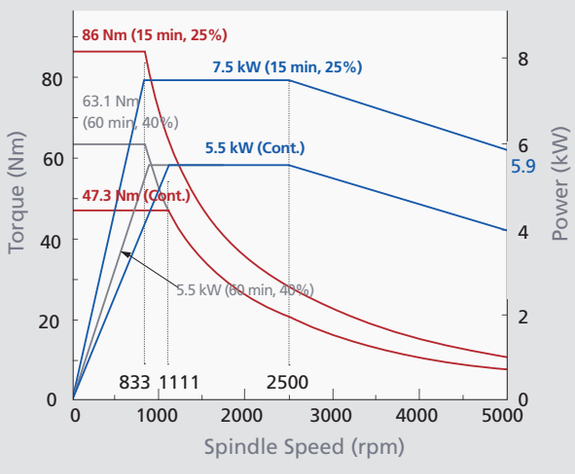
5,000 rpm (Turnmill)

Max Power : 5.5 kW (7.4 HP) / Max Torque : 52.5 Nm



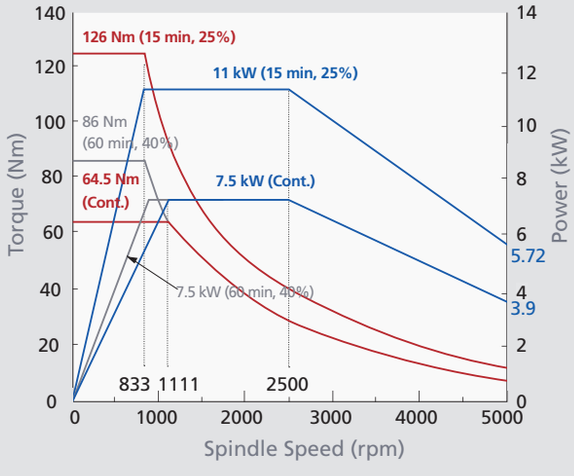
5,000 rpm (Sub Spindle)

Max Power : 7.5kW (10 HP) / Max Torque : 86 Nm



5,000 rpm (Sub Spindle) (OPT)

Max Power : 11kW (15 HP) / Max Torque : 126 Nm

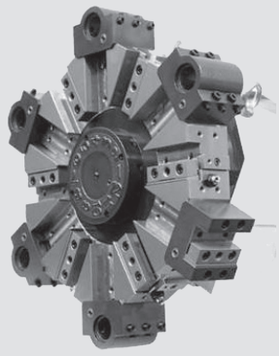


Tooling Diagram

Hi-TECH 230 STD

* Unit : ea

Tool	Part name	Q'ty	Shape
	Block	230A, B : 6 Set 230C : 5 Set	
□25 mm (□1 inch)	Extended O.D Cutting Holder	230A, B : 0 230C : 1	
	Face Holder	1	
Ø40 mm (Ø1.5 inch)	I.D Holder	4	
	Sleeve (Ø12, 1/2”), (Ø16, 5/8”), (Ø20, 3/4”), (Ø25, 1”), (Ø32, 1 1/4”)	1 Set	
	U-Drill Holder	1	
	U-Drill Sleeve (Ø20, 3/4”), (Ø25, 1”), (Ø32, 1 1/4”)	Each OPT	
	Socket (MT#1), (MT#2), (MT#3)	1 Set	



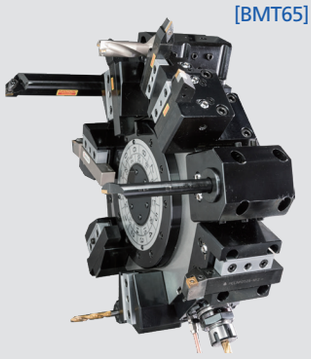
Hi-TECH 230 (Y)MC / (Y)SMC

■ Common ■ (Y)MC ■ (Y)SMC

* Unit : ea

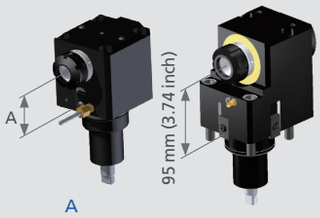
Tool	Part name	Q'ty	Shape
	O.D Cutting Holder	4 2	
	Sub O.D Cutting Holder	1	
	Face Holder	1	
□25 mm (□1 inch)	Extended O.D Cutting Holder	230A, B : 0 230C : 1	
	Double O.D Cutting Holder	1	
□20 mm (□0.75 inch)	Double O.D Cutting Holder	OPT (Main / Sub)	
	I.D Holder	2 1	
Ø40 mm (Ø1.5 inch)	Sleeve (Ø12, 1/2”), (Ø16, 5/8”), (Ø20, 3/4”), (Ø25, 1”), (Ø32, 1 1/4”)	1 Set	
	Double I.D Holder	1	
Ø32 mm (Ø1.3 inch)	Sleeve (Ø6, 1/4”), (Ø8, 5/16”),(Ø10, 3/8”), (Ø12, 1/2”), (Ø16, 5/8”), (Ø20, 3/4”), (Ø25, 1”)	Each OPT	
	Double I.D Holder	OPT	
Ø25 mm (Ø1 inch)	Sleeve (Ø6, 1/4”), (Ø8, 5/16”),(Ø10, 3/8”), (Ø12, 1/2”), (Ø16, 5/8”), (Ø20, 3/4”)	Each OPT	
	U-Drill Holder	1	
	U-Drill Sleeve (Ø20, 3/4”), (Ø25, 1”), (Ø32, 1 1/4”)	Each OPT	
	Socket (MT#1), (MT#2), (MT#3)	1 Set	
	ER 32 : Ø3,4,5,6,7,8,9,10,11,12, 13, 14,15, 16, 17, 18, 19, 20 ER 32I : Ø1/8”,Ø3/16”, Ø1/4”, Ø5/16”,Ø3/8”,Ø7/16”, Ø1/2",Ø11/16”	1 Set	
	Cap	12	

[BMT65]



Axial Turnmill Holder (OPT)

Radial Turnmill Holder (OPT)



A
[72 mm (2.83 inch)]
[YSMC : 72 mm (2.83 inch)
& 95 mm (3.74inch)]

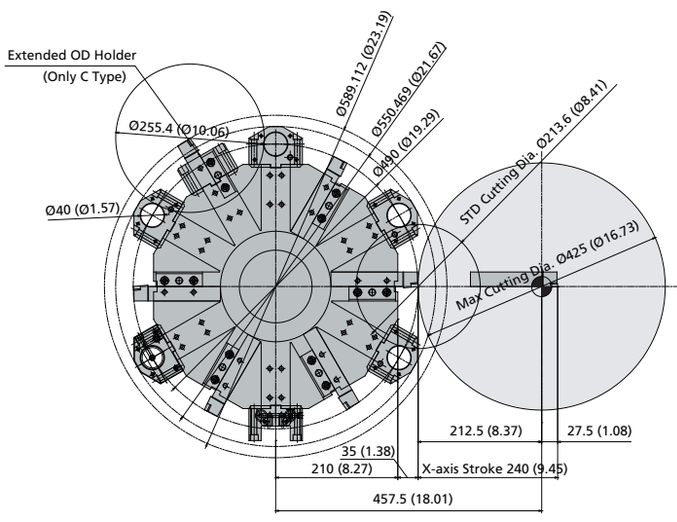
(Offset)

Detailed Information

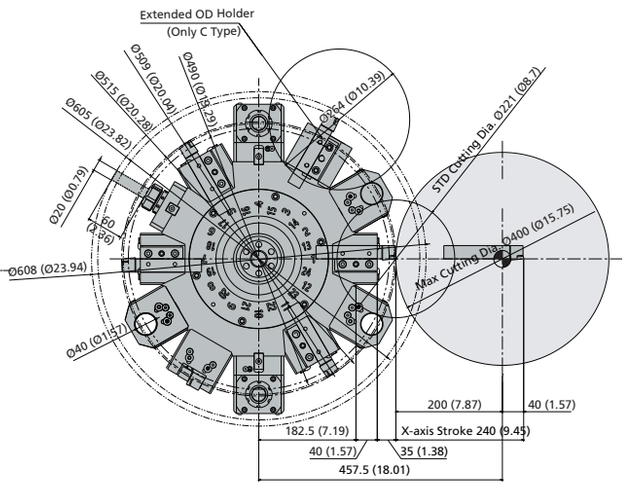
Turret Interference Diagram

* Unit : mm (inch)

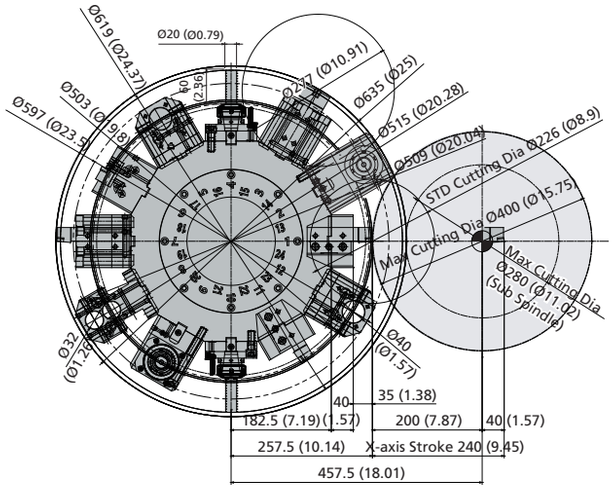
Hi-TECH 230A / B / C STD



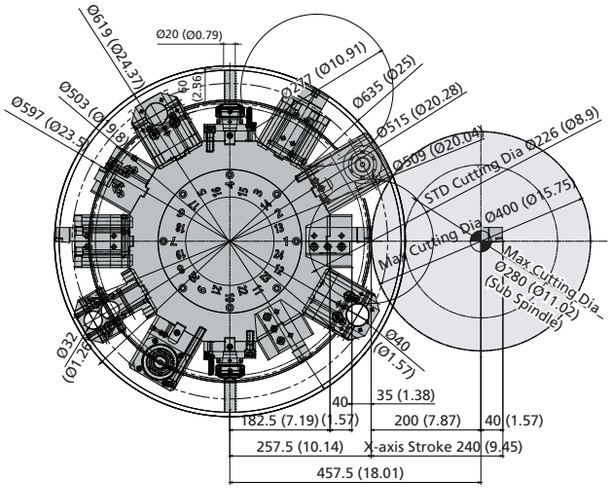
Hi-TECH 230A / B / C (Y)MC



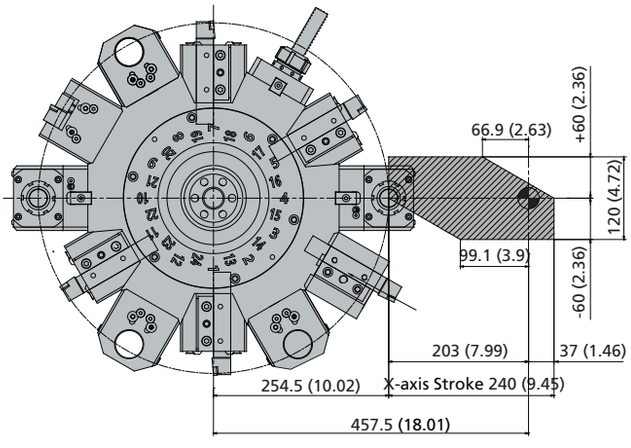
Hi-TECH 230A / B / C SMC



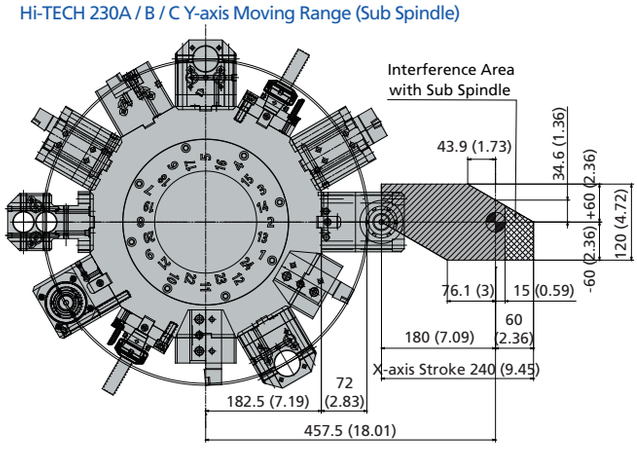
Hi-TECH 230A / B / C YSMC



Hi-TECH 230A / B / C Y-axis Moving Range



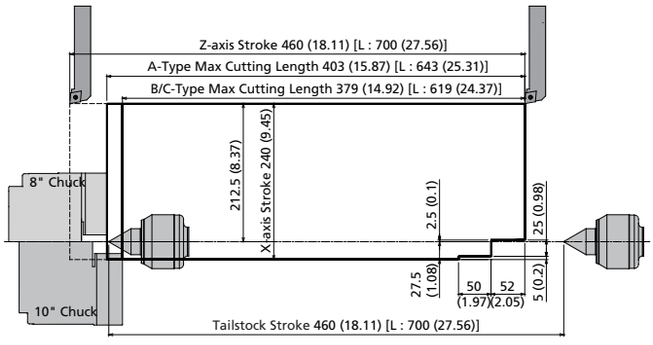
Hi-TECH 230A / B / C Y-axis Moving Range (Sub Spindle)



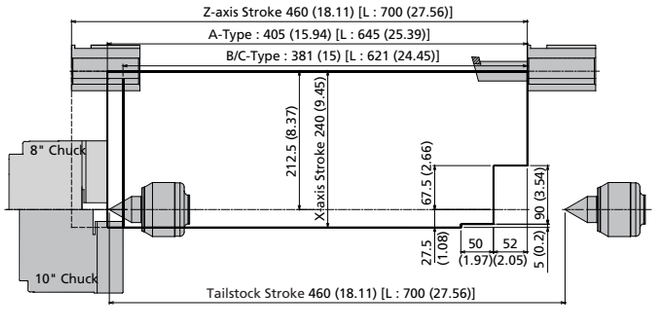
Moving Range

* Unit : mm (inch)

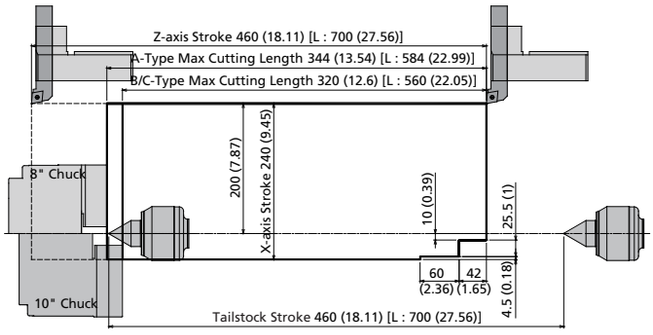
Hi-TECH 230A(L) / B(L) / C(L) STD O.D



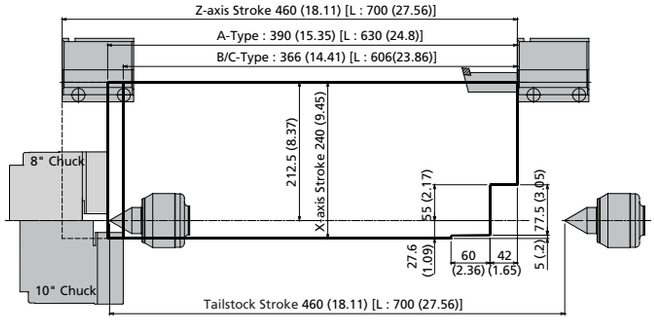
Hi-TECH 230A(L) / B(L) / C(L) STD I.D



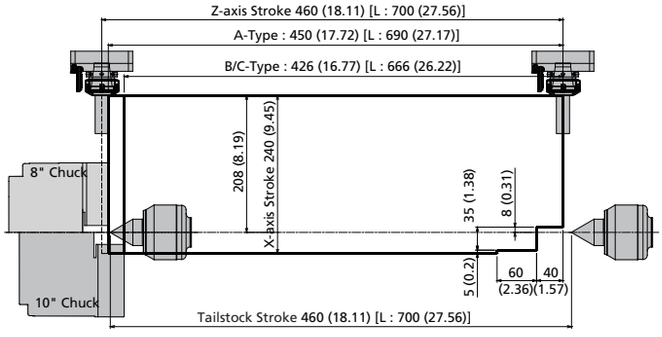
Hi-TECH 230A(L) / B(L) / C(L) MC O.D



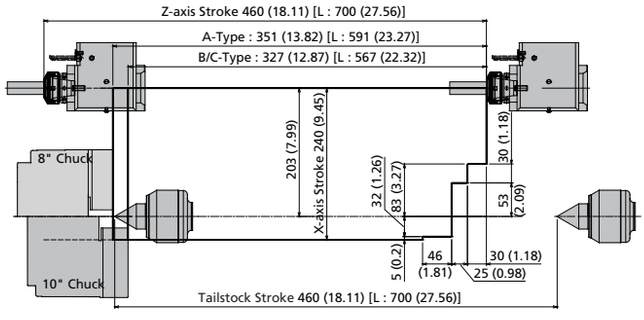
Hi-TECH 230A(L) / B(L) / C(L) MC I.D



Hi-TECH 230A(L) / B(L) / C(L) MC Axial



Hi-TECH 230A(L) / B(L) / C(L) MC Radial

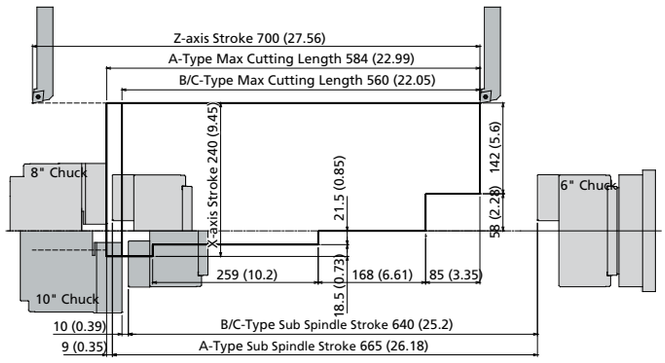


Detailed Information

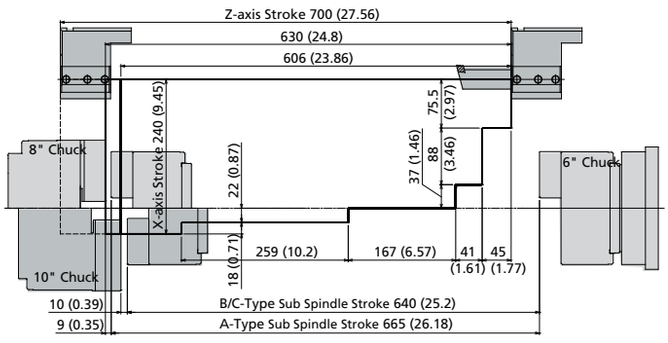
Moving Range

* Unit : mm (inch)

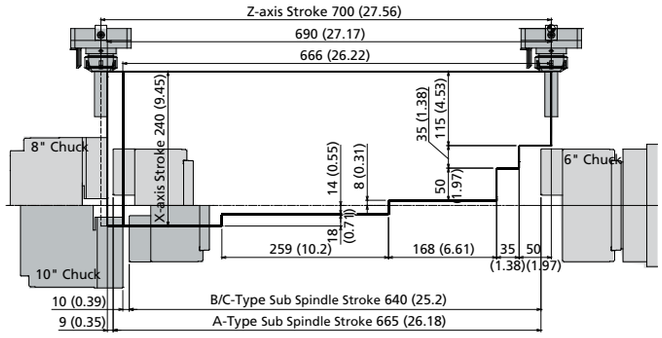
Hi-TECH 230AL / BL / CL SMC O.D



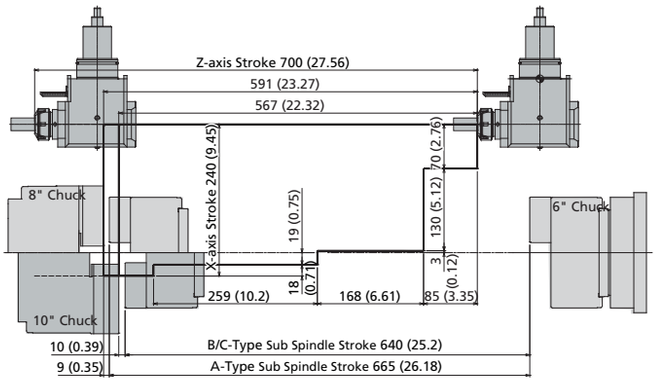
Hi-TECH 230AL / BL / CL SMC I.D



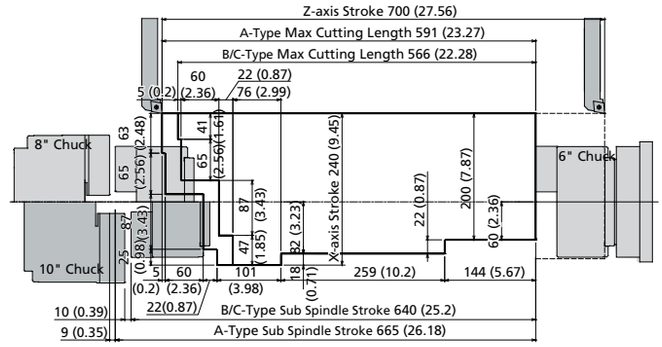
Hi-TECH 230AL / BL / CL SMC Axial



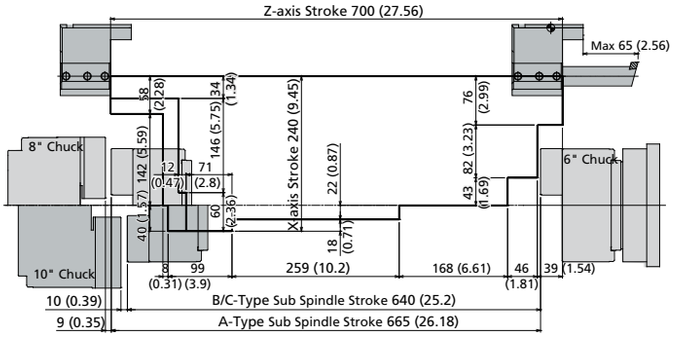
Hi-TECH 230AL / BL / CL SMC Radial



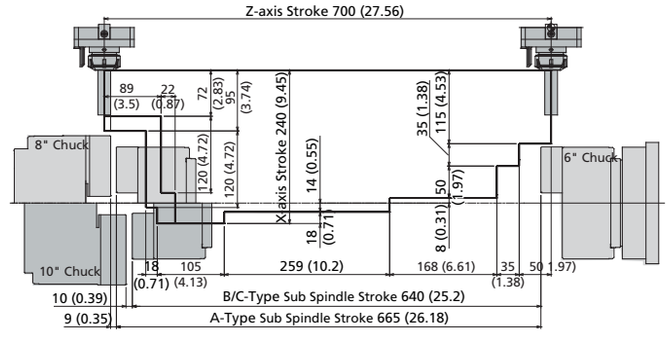
Hi-TECH 230AL / BL / CL SMC O.D (Sub)



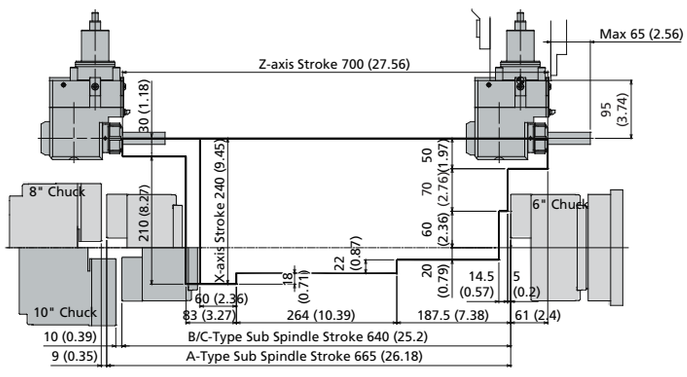
Hi-TECH 230AL / BL / CL SMC I.D (Sub)



Hi-TECH 230AL / BL / CL SMC Axial (Sub)



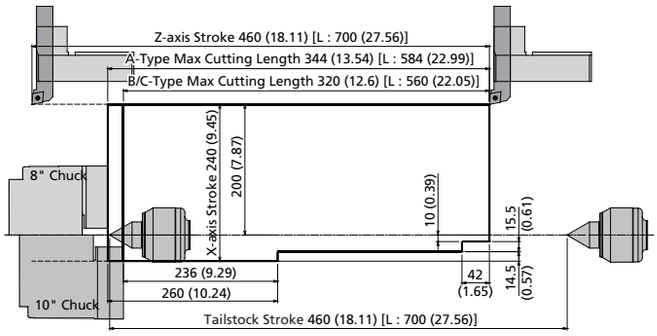
Hi-TECH 230AL / BL / CL SMC Radial (Sub) - Offset



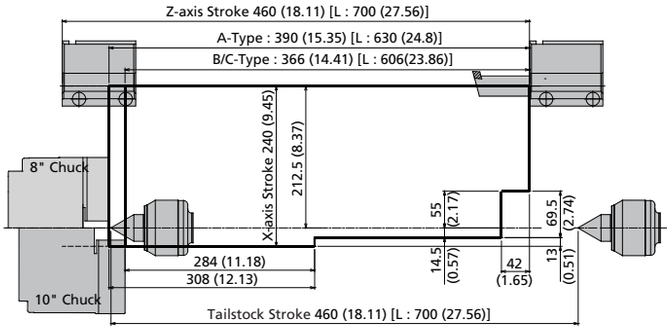
Moving Range

* Unit : mm (inch)

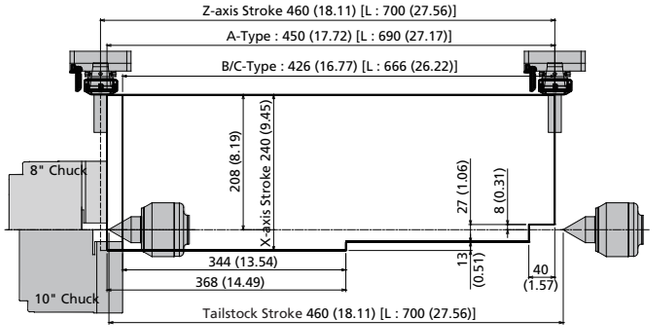
Hi-TECH 230A(L) / B(L) / C(L) YMC O.D



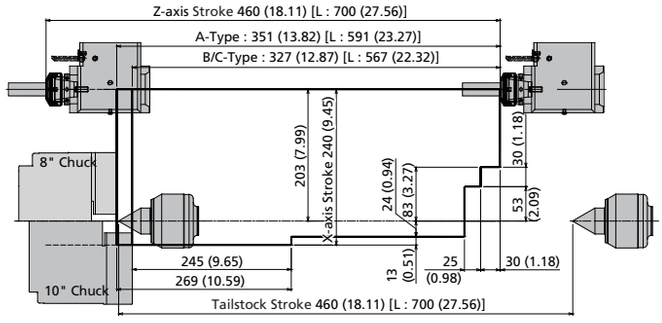
Hi-TECH 230A(L) / B(L) / C(L) YMC I.D



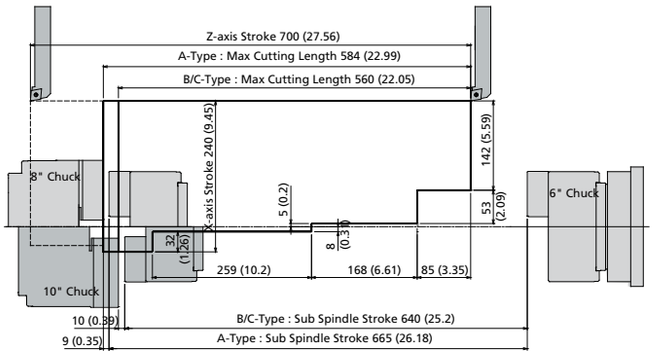
Hi-TECH 230A(L) / B(L) / C(L) YMC Axial



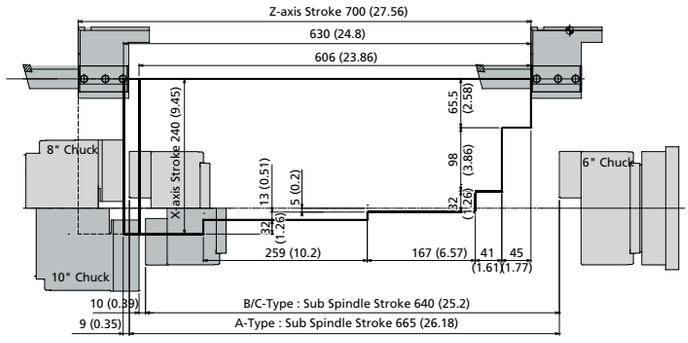
Hi-TECH 230A(L) / B(L) / C(L) YMC Radial



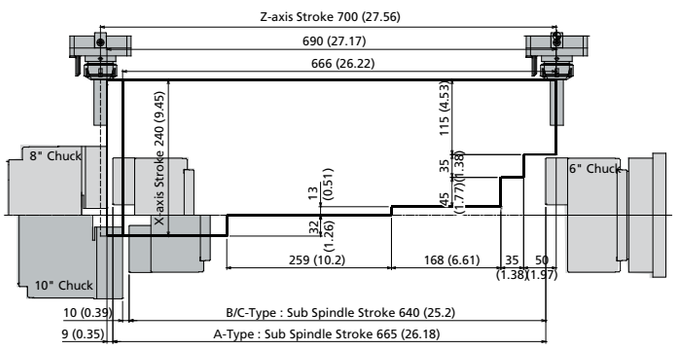
Hi-TECH 230AL / BL / CL YSMC O.D



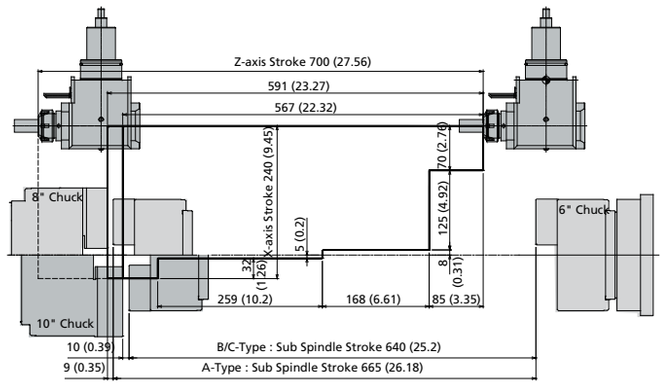
Hi-TECH 230AL / BL / CL YSMC I.D



Hi-TECH 230AL / BL / CL YSMC Axial



Hi-TECH 230AL / BL / CL YSMC Radial

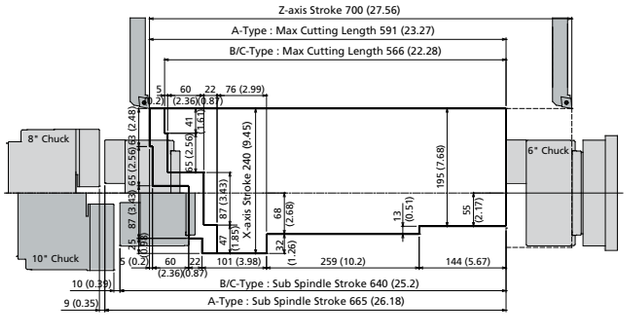


Detailed Information

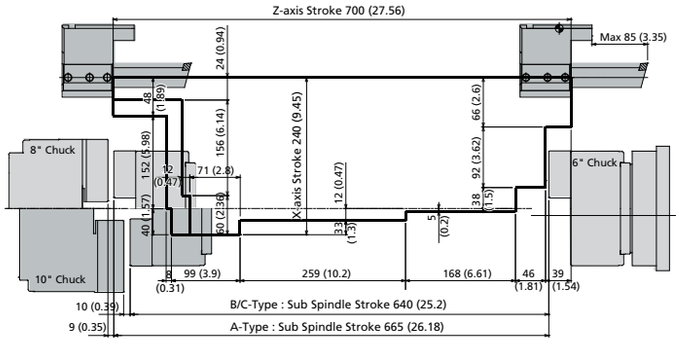
Moving Range

* Unit : mm (inch)

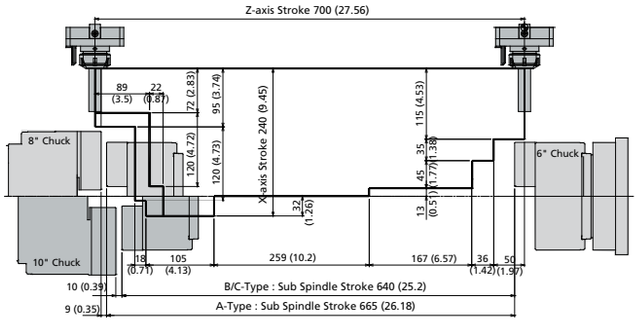
Hi-TECH 230AL / BL / CL YSMC O.D (Sub)



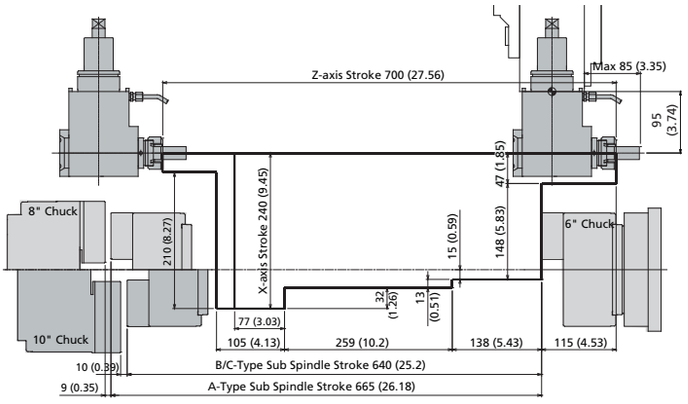
Hi-TECH 230AL / BL / CL YSMC I.D (Sub)



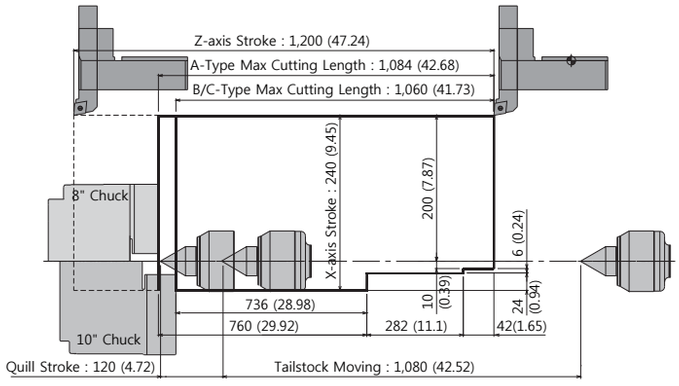
Hi-TECH 230AL / BL / CL YSMC Axial (Sub)



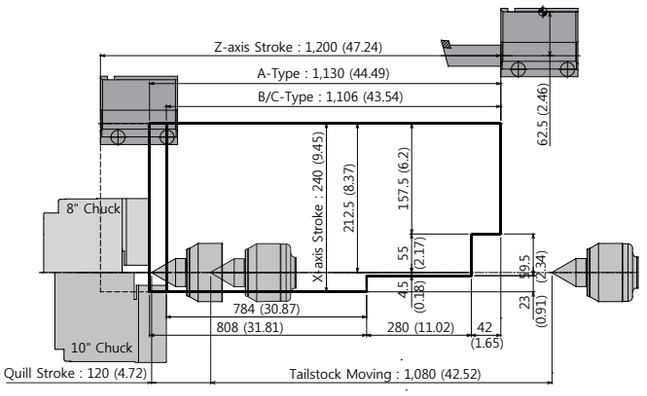
Hi-TECH 230AL / BL / CL YSMC Radial (Sub) - Offset



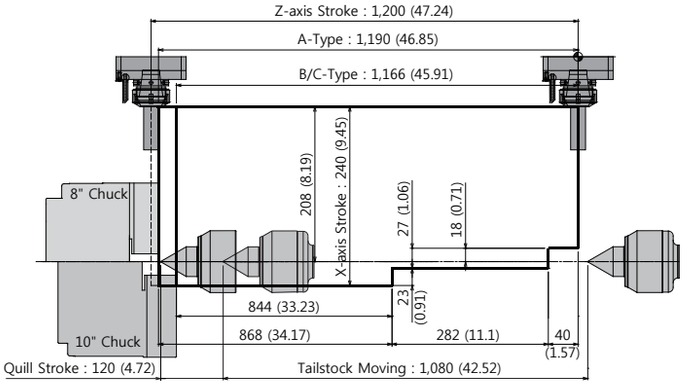
Hi-TECH 230AXL / BXL / CXL YMC O.D



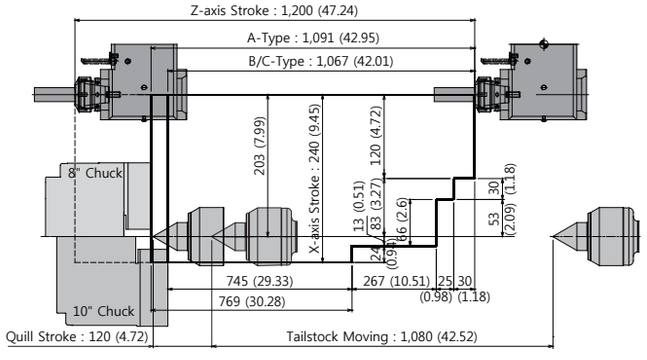
Hi-TECH 230AXL / BXL / CXL YMC I.D



Hi-TECH 230AXL / BXL / CXL YMC Axial

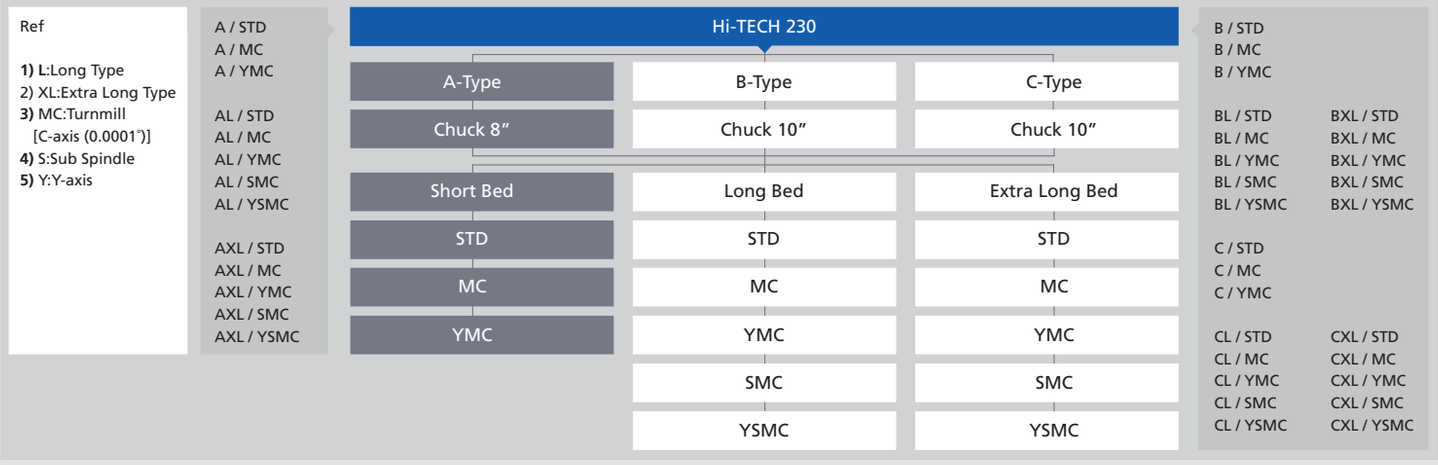


Hi-TECH 230AXL / BXL / CXL YMC Radial



Product Configuration

Each product can be configured to fit your application.



Machine Specifications

Item			Hi-TECH 230A / AL / AXL			Hi-TECH 230AL / AXL	
			STD	MC	YMC	SMC	YSMC
Capacity							
Swing over Bed		mm (inch)	Ø690 (Ø27.17)		Ø750 (Ø29.53)	Ø690 (Ø27.17)	Ø750 (Ø29.53)
Swing over Saddle		mm (inch)	Ø529 (Ø20.83)		Ø540 (Ø21.26)	Ø529 (Ø20.83)	Ø540 (Ø21.26)
Max Cutting Dia		mm (inch)	Ø425 (Ø16.73)	Ø400 (Ø15.75)		Ø400 (Ø15.75)	
Standard Cutting Dia		mm (inch)	Ø213.6 (Ø8.41)	Ø221 (Ø8.7)		Ø277 (Ø10.91)	
Max Cutting Length		mm (inch)	403 (15.87) / L:643 (25.31) / XL:1,143 (45)	344 (13.54) / L:584 (22.99) / XL:1,084 (42.68)		L:584 (22.99) / XL: 1,084 (42.68)	
Chuck Size		inch	8			8 (Sub:6)	
Spindle							
Type of Spindle Nose		ASA	A2-6			A2-6 (Sub:A2-5)	
Max Spindle Speed		rpm	4,500			4,500 (Sub:5,000)	
Through Spindle Hole Dia		mm (inch)	Ø76 (Ø2.99)			Ø76 (2.99) [Sub:Ø62 (2.44)]	
Max Bar Size		mm (inch)	Ø65 (Ø2.56)			Ø65 (Ø2.56) [Sub:Ø51 (Ø2.01)]	
Spindle Bearing Inner Dia		mm (inch)	Ø110 (Ø4.33)			Ø110 (Ø4.33) [Sub:Ø90 (Ø3.54)]	
Spindle Motor	Main	kW (HP)	18.5 / 15 (25 / 20)			18.5 / 15 (25 / 20)	
	Sub	kW (HP)	-			7.5 / 5.5 (10 / 7.4) [OPT : 11 / 7.5 (15 / 10)]	
Turret							
Number of Tool Stations		ea	12	12 (24 Positions Index)		12 (24 Positions Index)	
Tool Size		mm (inch)	O.D:□25 (□1), I.D:Ø40 (Ø1.5)			O.D:□25 (□1), I.D:Ø40 (Ø1.5)	
Turret Indexing Time		sec/step	0.344			0.344	
Axes							
Rapid Traverse (X / Z / Y / B)		m/min (ipm)	30 / 30 / 10 / - (1,181 / 1,181 / 394 / -)			30 / 30 / 10 / 24 (1,181 / 1,181 / 394 / 945)	
Max Stroke (X / Z / Y / B)		mm (inch)	240 / 460 / 120 / - (9.45 / 18.11 / 4.72 / -) / L:240 / 700 / 120 / - (9.45 / 27.56 / 4.72 / -) / XL:240 / 1,200 / 120 / - (9.45 / 47.24 / 4.72 / -)			L:240 / 700 / 120 / 665 (9.45 / 27.56 / 4.72 / 26.18) / XL:240 / 1,200 / 120 / 1,165 (9.45 / 47.24 / 4.72 / 45.87)	
Feed Motor (X / Z / Y / B)		kW (HP)	3.0 / 3.0 / 3.0 / - (4 / 4 / 4 / -)			3.0 / 3.0 / 3.0 / 1.8 (4 / 4 / 4 / 2.4)	
Tailstock							
Max Stroke		mm (inch)	460 (18.11) / L:700 (27.56) / XL:1,080 (42.52)			-	
Cylinder Diameter		mm (inch)	Ø65 (Ø2.56) / L:Ø65 (Ø2.56) / XL:Ø100 (Ø3.94)			-	
Quill Stroke		mm (inch)	XL:120 (4.72)			-	
Center Taper		MT	# 5			-	
Turnmill							
Spindle Motor		kW (HP)	-	5.5 / 3.7 (7.4 / 5)		5.5 / 3.7 (7.4 / 5)	
Max Spindle Speed		rpm	-	5,000		5,000	
Max Drill / Tap Size		mm (inch)	-	Ø20 (Ø0.75) / M16		Ø20 (Ø0.75) / M16	
Min Index Angle		deg	-	0.0001		0.0001 (Sub:0.0001)	
Tank							
Lubrication / Hydraulic		ℓ (gal)	12 (3.17) / 11 (2.91)				
Coolant		ℓ (gal)	115 (30.38) / L:125 (33.02) / XL:150 (39.63)		125 (33.02) / L:140 (36.98) / XL:165 (43.59)	L:125 (33.02) / XL:150 (39.63)	L:140 (36.98) / XL:165 (43.59)
Large Capacity Coolant (OPT)		ℓ (gal)	200 (52.83) / L:210 (55.48) / XL:235 (62.08)		210 (55.48) / L:225 (59.44) / XL:250 (66.04)	L:210 (55.48) / XL:235 (62.08)	L:225 (59.44) / XL:250 (66.04)
Power Sources							
Electrical Power Supply		kVA	35		40	40	
Dimension							
Height		mm (inch)	1,800 (70.87)		2,104 (82.83)	1,934.5 (76.16)	2,104 (82.83)
Floor Space (L×W)		mm (inch)	2,893 x 1,849.5 (113.9 x 72.81) / L:3,133 x 1,849.5 (123.35 x 72.81) / XL:3,753 x 1,849.5 (147.76 x 72.81)		2,893 x 1,924.5 (113.9 x 75.77) /L:3,133 x 1,924.5 (123.35 x 75.77) / XL:3,753 x 1,924.5 (147.76 x 75.77)	L:3,133 x 1,849.5 (123.35 x 72.81) / XL:3,753 x 1,849.5 (147.76 x 72.81)	L:3,133 x 1,924.5 (123.35 x 75.77) / XL:3,753 x 1,924.5 (147.76 x 75.77)
Weight		kg_f (lb_f)	5,900 (13,007) / L:6,500 (14,330) / XL:8,050 (17,747)		6,050 (13,338) / L:6,600 (14,551) / XL:8,200 (18,078)	L:6,650 (14,661) / XL:8,200 (18,078)	L:6,800 (14,991) / XL:8,350 (18,409)
NC Controller			Fanuc 0i-TF Plus				

Detailed Information

Product Configuration

Item			Hi-TECH 230B/BL/BXL			Hi-TECH 230BL/BXL		Hi-TECH 230C/CL/CXL			Hi-TECH 230CL/CXL	
			STD	MC	YMC	SMC	YSMC	STD	MC	YMC	SMC	YSMC
Capacity												
Swing over Bed		mm (inch)	Ø690 (Ø27.17)		Ø750 (Ø29.53)	Ø690 (Ø27.17)	Ø750 (Ø29.53)	Ø690 (Ø27.17)		Ø750 (Ø29.53)	Ø690 (Ø27.17)	Ø750 (Ø29.53)
Swing over Saddle		mm (inch)	Ø529 (Ø20.83)		Ø540 (Ø21.26)	Ø529 (Ø20.83)	Ø540 (Ø21.26)	Ø529 (Ø20.83)		Ø540 (Ø21.26)	Ø529 (Ø20.83)	Ø540 (Ø21.26)
Max Cutting Dia		mm (inch)	Ø425 (Ø16.73)	Ø400 (Ø15.75)		Ø400 (Ø15.75)		Ø425 (Ø16.73)	Ø400 (Ø15.75)		Ø400 (Ø15.75)	
Standard Cutting Dia		mm (inch)	Ø213.6 (Ø8.41)	Ø221 (Ø8.7)		Ø277 (Ø10.91)		Ø255 (Ø10.04)	Ø264 (Ø10.39)		Ø277 (Ø10.91)	
Max Cutting Length		mm (inch)	379 (14.92) / L:619 (24.37) / XL:1,119 (44.06)	320 (12.6) / L:560 (22.05) / XL:1,060 (41.73)		L:560 (22.05) / XL:1,060 (41.73)		379 (14.92) / L:619 (24.37) / XL:1,119 (44.06)	320 (12.6) / L:560 (22.05) / XL:1,060 (41.73)		L:560 (22.05) / XL:1,060 (41.73)	
Chuck Size		inch	10			10 (Sub:6)		10			10 (Sub:6)	
Spindle												
Type of Spindle Nose		ASA	A2-8			A2-8 (Sub:A2-5)		A2-8			A2-8 (Sub:A2-5)	
Max Spindle Speed		rpm	3,500			3,500 (Sub:5,000)		3,500			3,500 (Sub:5,000)	
Through Spindle Hole Dia		mm (inch)	Ø91 (Ø3.58)			Ø91 (3.58) [Sub:Ø62 (2.44)]		Ø91 (Ø3.58)			Ø91 (3.58) [Sub:Ø62 (2.44)]	
Max Bar Size		mm (inch)	Ø81 (Ø3.19)			Ø81 (Ø3.19) [Sub:Ø51 (Ø2.01)]		Ø81 (Ø3.19)			Ø81 (Ø3.19) [Sub:Ø51 (Ø2.01)]	
Spindle Bearing Inner Dia		mm (inch)	Ø140 (Ø5.51)			Ø140 (Ø5.51) [Sub:Ø90 (Ø3.54)]		Ø140 (Ø5.51)			Ø140 (Ø5.51) [Sub:Ø90 (Ø3.54)]	
Spindle Motor	Main	kW (HP)	18.5 / 15 (25 / 20)			18.5 / 15 (25 / 20)		22 / 18.5 (29 / 25)			22 / 18.5 (29 / 25)	
	Sub	kW (HP)	-			7.5 / 5.5 (10 / 7.4) [OPT : 11 / 7.5 (15 / 10)]		-			7.5 / 5.5 (10 / 7.4) [OPT : 11 / 7.5 (15 / 10)]	
Turret												
Number of Tool Stations		ea	12	12 (24 Positions Index)		12 (24 Positions Index)		12	12 (24 Positions Index)		12 (24 Positions Index)	
Tool Size		mm (inch)	O.D:□25 (□1), I.D:Ø40 (Ø1.5)			O.D:□25 (□1), I.D:Ø40 (Ø1.5)		O.D:□25 (□1), I.D:Ø40 (Ø1.5)			O.D:□25 (□1), I.D:Ø40 (Ø1.5)	
Turret Indexing Time		sec/step	0.344			0.344		0.344			0.344	
Axes												
Rapid Speed (X / Z / Y / B)		m/min (ipm)	30 / 30 / 10 / - (1,181 / 1,181 / 394 / -)			30 / 30 / 10 / 24 (1,181 / 1,181 / 394 / 945)		30 / 30 / 10 / - (1,181 / 1,181 / 394 / -)			30 / 30 / 10 / 24 (1,181 / 1,181 / 394 / 945)	
Max Stroke (X / Z / Y / B)		mm (inch)	240 / 460 / 120 / - (9.45 / 18.11 / 4.72 / -) / L:240 / 700 / 120 / - (9.45 / 27.56 / 4.72 / -) / XL:240 / 1,200 / 120 / - (9.45 / 47.24 / 4.72 / -)			L:240 / 700 / 120 / 665 (9.45 / 27.56 / 4.72 / 26.18) / XL:240 / 1,200 / 120 / 1,140 (9.45 / 47.24 / 4.72 / 44.88)		240 / 460 / 120 / - (9.45 / 18.11 / 4.72 / -) / L:240 / 700 / 120 / - (9.45 / 27.56 / 4.72 / -) / XL:240 / 1,200 / 120 / - (9.45 / 47.24 / 4.72 / -)			L:240 / 700 / 120 / 665 (9.45 / 27.56 / 4.72 / 26.18) / XL:240 / 1,200 / 120 / 1,140 (9.45 / 47.24 / 4.72 / 44.88)	
Feed Motor (X / Z / Y / B)		kW (HP)	3.0 / 3.0 / 3.0 / - (4 / 4 / 4 / -)			3.0 / 3.0 / 3.0 / 1.8 (4 / 4 / 4 / 2.4)		3.0 / 3.0 / 3.0 / - (4 / 4 / 4 / -)			3.0 / 3.0 / 3.0 / 1.8 (4 / 4 / 4 / 2.4)	
Tailstock												
Max Stroke		mm (inch)	460 (18.11) / L:700 (27.56) / XL:1,080 (42.52)			-		460 (18.11) / L:700 (27.56) / XL:1,080 (42.52)			-	
Cylinder Diameter		mm (inch)	Ø65 (Ø2.56) / L:Ø65 (Ø2.56) / XL:Ø100 (Ø3.94)			-		Ø65 (Ø2.56) / L:Ø65 (Ø2.56) / XL:Ø100 (Ø3.94)			-	
Quill Stroke		mm (inch)	XL:120 (4.72)			-		XL:120 (4.72)			-	
Center Taper		MT	# 5			-		# 5			-	
Turnmill												
Spindle Motor		kW (HP)	-	5.5 / 3.7 (7.4 / 5)		5.5 / 3.7 (7.4 / 5)		-	5.5 / 3.7 (7.4 / 5)		5.5 / 3.7 (7.4 / 5)	
Max Spindle Speed		rpm	-	5,000		5,000		-	5,000		5,000	
Max Drill / Tap Size		mm (inch)	-	Ø20 (Ø0.75) / M16		Ø20 (Ø0.75) / M16		-	Ø20 (Ø0.75) / M16		Ø20 (Ø0.75) / M16	
Min Index Angle		deg	-	0.0001		0.0001 (Sub:0.0001)		-	0.0001		0.0001 (Sub:0.0001)	
Tank												
Lubrication		ℓ (gal)	12 (3.17)			12 (3.17)		12 (3.17)			12 (3.17)	
Hydraulic		ℓ (gal)	11 (2.91)			11 (2.91)		11 (2.91)			11 (2.91)	
Coolant		ℓ (gal)	115 (30.38) / L:125 (33.02) / XL:150 (39.63)		125 (33.02) / L:140 (36.98) / XL:165 (43.59)	L:125 (33.02) / XL:150 (39.63)	L:140 (36.98) / XL:165 (43.59)	115 (30.38) / L:125 (33.02) / XL:150 (39.63)		125 (33.02) / L:140 (36.98) / XL:165 (43.59)	L:125 (33.02) / XL:150 (39.63)	L:140 (36.98) / XL:165 (43.59)
Large Capacity Coolant (OPT)		ℓ (gal)	200 (52.83) / L:210 (55.48) / XL:235 (62.08)		210 (55.48) / L:225 (59.44) / XL:250 (66.04)	L:210 (55.48) / XL:235 (62.08)	L:225 (59.44) / XL:250 (66.04)	200 (52.83) / L:210 (55.48) / XL:235 (62.08)		210 (55.48) / L:225 (59.44) / XL:250 (66.04)	L:210 (55.48) / XL:235 (62.08)	L:225 (59.44) / XL:250 (66.04)
Power Sources												
Electrical Power Supply		kVA	35		40	40		35		40	45	50
Dimension												
Height		mm (inch)	1,800 (70.87)		2,104 (82.83)	1,934.5 (76.16)	2,104 (82.83)	1,800 (70.87)		2,104 (82.83)	1,934.5 (76.16)	2,104 (82.83)
Floor Space (L×W)		mm (inch)	2,893 x 1,849.5 (113.9 x 72.81) / L:3,133 x 1,849.5 (123.35 x 72.81) / XL:3,753 x 1,849.5 (147.76 x 72.81)		2,893 x 1,924.5 (113.9 x 75.77) /L:3,133 x 1,924.5 (123.35 x 75.77) / XL:3,753x1,924.5 (147.76 x 75.77)	L:3,133 x 1,849.5 (123.35 x 72.81) / XL:3,753 x1,849.5 (147.76 x 72.81)	L:3,133 x 1,924.5 (123.35 x 75.77) / XL:3,753 x1,924.5 (147.76 x 75.77)	2,993 x 1,849.5 (117.83 x 72.81) / L:3,233 x 1,849.5 (127.28 x 72.81) / XL:3,853 x 1,849.5 (151.69 x 72.81)		2,993 x 1,924.5 (117.83 x 75.77) / L:3,233x1,924.5 (127.28 x 75.77) / XL:3,853x1,924.5 (151.69 x 75.77)	L:3,233x1,849.5 (127.28 x 72.81) / XL:3,853x1,849.5 (151.69 x 72.81)	L:3,233x1,924.5 (127.28 x 75.77) / XL:3,853x1,924.5 (151.69 x 75.77)
Weight		kg_f (lb_f)	5,900 (13,007) / L:6,500 (14,330) / XL: 8,050 (17,747)		6,050 (13,338) / L:6,650 (14,661) / XL:8,200 (18,078)	L:6,650 (14,661) / XL:8,200 (18,078)	L:6,800 (14,991) / XL:8,350 18,409)	5,900 (13,007) / L:6,600 (14,551) / XL:8,150 (17,968)		6,050 (13,338) / L:6,750 (14,881) / XL:8,200 (18,078)	L:6,750 (14,881) / XL:8,300 (18,298)	L:6,900 (15,212) / XL:8,350 (18,409)
NC Controller			Fanuc 0i-TF Plus									

NC Specifications [Fanuc 0i-TF Plus]

※ — : Not available S : Standard O : Option

Item	Specification	STD	MC	SMC	YMC	YSMC
Controlled Axis						
Controlled Axis (Cs Axis)	2 - Axes	2-Axes	3-Axes	5-Axes	4-Axes	6-Axes
Simultaneously Controlled Axes	2 - Axes	2-Axes	3-Axes	4-Axes	4-Axes	4-Axes
Least Input Increment	0.001 mm, 0.0001 deg, 0.0001 inch	S	S	S	S	S
Least Input Increment 1 / 10	0.0001 mm, 0.00001 inch	O	O	O	O	O
Inch / Metric Conversion	G20, G21	S	S	S	S	S
Store Stroke Check 1		S	S	S	S	S
Store Stroke Check 2, 3		S	S	S	S	S
Chamfering on / off		S	S	S	S	S
Backlash Compensation		S	S	S	S	S
Operation						
Automatic & MDI Operation		S	S	S	S	S
Program Number Search		S	S	S	S	S
Sequence Number Search		S	S	S	S	S
Dry Run, Single Block		S	S	S	S	S
Manual Handle Feed	1Unit	S	S	S	S	S
Manual Handle Feed Rate	x1, x10, x100	S	S	S	S	S
Interpolation Function						
Positioning	G00	S	S	S	S	S
Linear Interpolation	G01	S	S	S	S	S
Circular Interpolation	G02,G03	S	S	S	S	S
Dwell (Per Seconds)	G04	S	S	S	S	S
Polar Coordinate Interpolation	G12.1 / G13.1	-	S	S	S	S
Cylindrical Interpolation	G7.1	-	S	S	S	S
Threading	G32	S	S	S	S	S
Multiple Threading		S	S	S	S	S
Continuous Threading		S	S	S	S	S
Threading Retract		S	S	S	S	S
Variable Lead Threading	G34	S	S	S	S	S
Ref Position Return 1st	G28	S	S	S	S	S
Ref Position Return Check	G27	S	S	S	S	S
2 / 3 / 4th Ref Position Return	G30	S	S	S	S	S
Arbitrary Speed Threading		O	O	O	O	O
Feed Function						
Rapid Traverse Override	F0, F25, F50, F100	S	S	S	S	S
Feed Per Minute (mm/min)	G98	S	S	S	S	S
Feed Per Revolution (mm/rev)	G99	S	S	S	S	S
Rapid Traverse Bell-shaped Acceleration / Deceleration		S	S	S	S	S
Feedrate Override	0 ~ 150%	S	S	S	S	S
Jog Feed Override	0 ~ 1,260 mm/min	S	S	S	S	S
Program Input						
Tape Code	EIA / ISO	S	S	S	S	S
Optional Block Skip	9 ea	S	S	S	S	S
Program Number	O4-digits(1–9999)	S	S	S	S	S
Sequence Number	N8 - Digits	S	S	S	S	S
Decimal Point Programming		S	S	S	S	S
Coordinate System Setting	G50	S	S	S	S	S
Coordinate System Shift		S	S	S	S	S
Workpiece Coordinate System (G52 ~ G59)		S	S	S	S	S
Workpiece Coordinate System Preset (G92.1)		S	S	S	S	S
Direct Drawing Dimension Programming		S	S	S	S	S

Item	Specification	STD	MC	SMC	YMC	YSMC
Program Input						
G Code System	A	S	S	S	S	S
Programmable Data Input	G10	S	S	S	S	S
Sub Program Call	10 folds nested	S	S	S	S	S
Custom Macro B		S	S	S	S	S
Addition of Custom Macro -common Variables	#100 ~ #199, #500 ~ #999	S	S	S	S	S
Canned Cycles		S	S	S	S	S
Multiple Repetitive Cycle		S	S	S	S	S
Multiple Repetitive Cycle II		S	S	S	S	S
Canned Cycles for Drilling		S	S	S	S	S
Manual Guide i		S	S	S	S	S
Spindle Speed Function						
Constant Surface Speed Control	G96 / G97	S	S	S	S	S
Spindle Override	0 ~ 150%	S	S	S	S	S
Spindle Orientation		S	S	S	S	S
Rigid Tapping		S	S	S	S	S
Spindle Synchronous Control		-	-	S	-	S
Tool Function / Compensation						
Tool Function	T4-digits	S	S	S	S	S
Tool Offset Pairs	128 pairs	S	S	S	S	S
Tool Nose Radius Compensation		S	S	S	S	S
Tool Geometry / Wear Compensation		S	S	S	S	S
Tool Life Management		S	S	S	S	S
Automatic Tool Offset	Tool presetter option is required	S	S	S	S	S
Direct Input Tool Offset Value Measured B		S	S	S	S	S
Editing Operation						
Part Program Storage Length	5,120 m (2MB)	S	S	S	S	S
Number of Register Able Programs	Max.1000 ea	S	S	S	S	S
Background Editing		S	S	S	S	S
Extended Part Program Editing		S	S	S	S	S
Play Back		S	S	S	S	S
Operation / Display						
Clock Function		S	S	S	S	S
Self-diagnosis Function		S	S	S	S	S
Alarm History Display		S	S	S	S	S
Help Function		S	S	S	S	S
Run Hour and Parts Count Display		S	S	S	S	S
Graphic Function		S	S	S	S	S
Multi-language Display Korean, English, German, French, Italian, Chinese, Spanish, Portuguese, Polish, Hungarian, Swedish, Russian		S	S	S	S	S
Data Input / Output						
Ethernet Interface		S	S	S	S	S
Memory Card Interface		S	S	S	S	S
USB Card Interface		S	S	S	S	S
Others						
Display Unit	15” Non touch display	S	S	S	S	S
Fanuc i-HMI	15” Touch type display	O	O	O	O	O
Others						
L-HTLD (Hwacheon Tool Load Detect System)		S	S	S	S	S
L-CAL (Lathe Calculator Function)		S	S	S	S	S
L-COUNT (Work / Tool Counter Management)		S	S	S	S	S
HLVC (Hwacheon Lathe Vibration Control)		S	S	S	S	S
M-VISION Pro		O	O	O	O	O

Hwacheon Global Network

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HWACHEON

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The product design and specifications may change without prior notice.
Read the operation manual carefully and thoroughly before operating the product,
and always follow the safety instructions and warnings labels attached on the surfaces of the machines.

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