

Global Services

COORAY Machine Tool Global Service,
24-hour rapid response to customer needs

COORAY Machine Tool provides systematic services for all pre-sales and after-sales processes, responding quickly to customer needs and resolving issues quickly. From the supply of machine tool equipment and equipment spare parts to product training, troubleshooting, and technical support, we can provide customers with fast services through our service network.



COORAY
—worldwide solutions—

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COORAY
—worldwide solutions—

EFFICIENT MEDIUM AND LARGE
HORIZONTAL TURNING CENTER

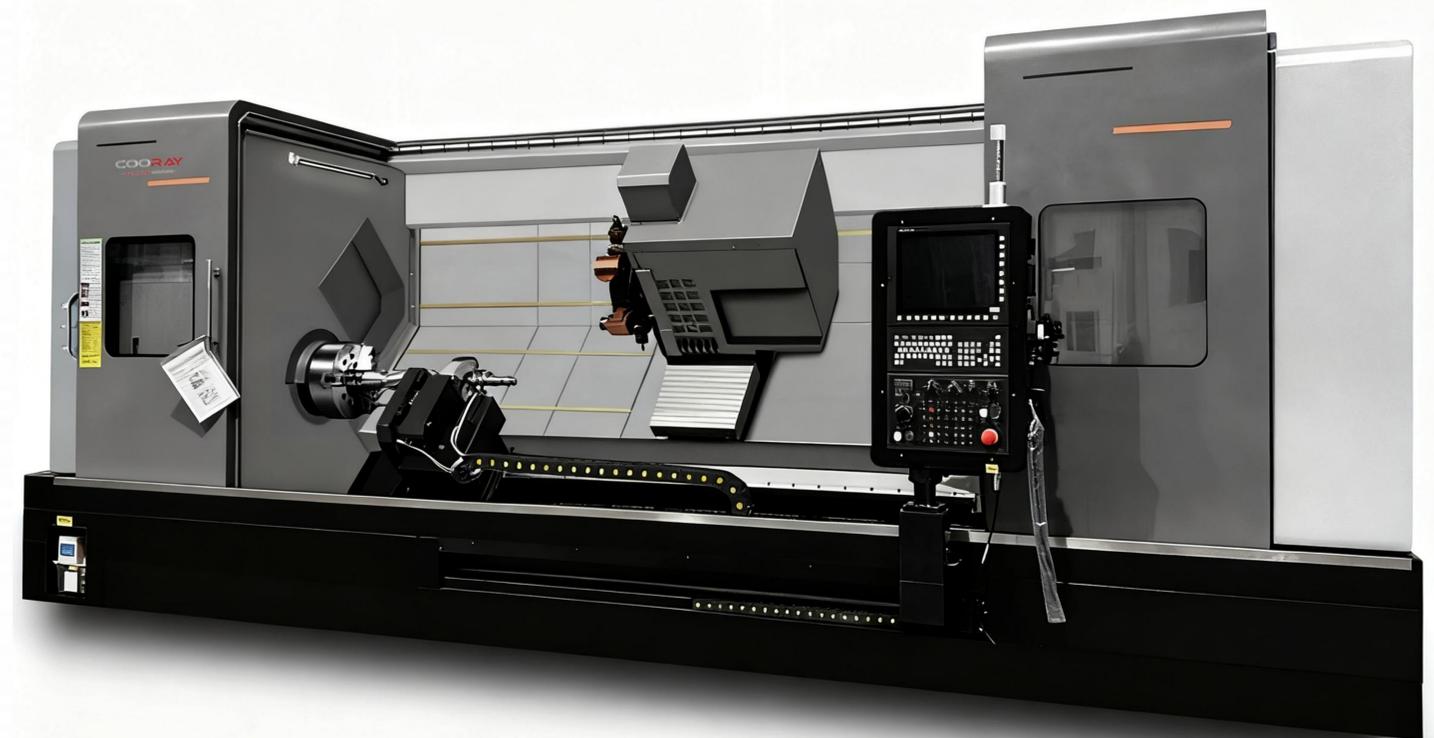
CRL700



Our company reserves the right to change product design and specifications without prior notice. If there are any differences between the product image and the actual product, the actual product shall prevail. If there are any printing errors or omissions, we hope for the understanding of our customers.

CRL700 machines are large horizontal turning centers ideal for machining pipes, valves and flanges used in oil and gas industry, hydraulic parts used in construction equipment, and also complex parts used in the aircraft and ship building industries. Maximum turning, diameters and lengths are $\text{\O}680\text{mm}$ and 5000mm respectively, which are the highest in their class. The slant bed design allows easy chip disposal.

Product Advantages



SINGLE SETUP FOR MACHINING LARGE COMPLEX PARTS

- Maximum productivity can be achieved with the machines' 200mm (7.9inch) ($\pm 100\text{mm}$ (3.9inch)) orthogonal Y-axis structure, which allows users to machine a wide range

THE LARGEST MACHINING AREA AND TOP PERFORMANCE IN ITS CLASS

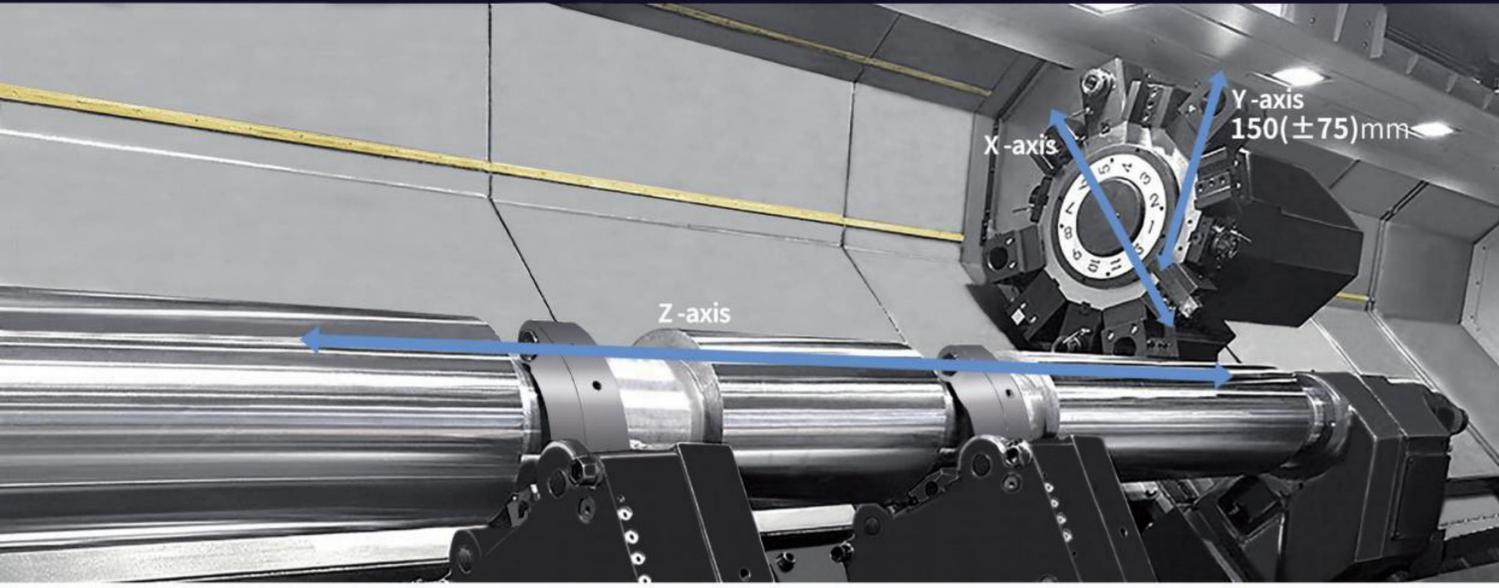
- With 5m maximum turning length, $\text{\O}680\text{mm}$ maximum turning diameter and $2176\text{N}\cdot\text{m}$ of Torque, the machines are ideal for the heavy-duty cutting of large parts

THE SOLUTION FOR MACHINING A WIDE RANGE OF PIPES

- $\text{\O}220\text{mm}$ maximum spindle through hole diameter makes the machines ideal for turning large diameter pipes.
- The machines take the machining of high-accuracy and performance-critical threads in their stride

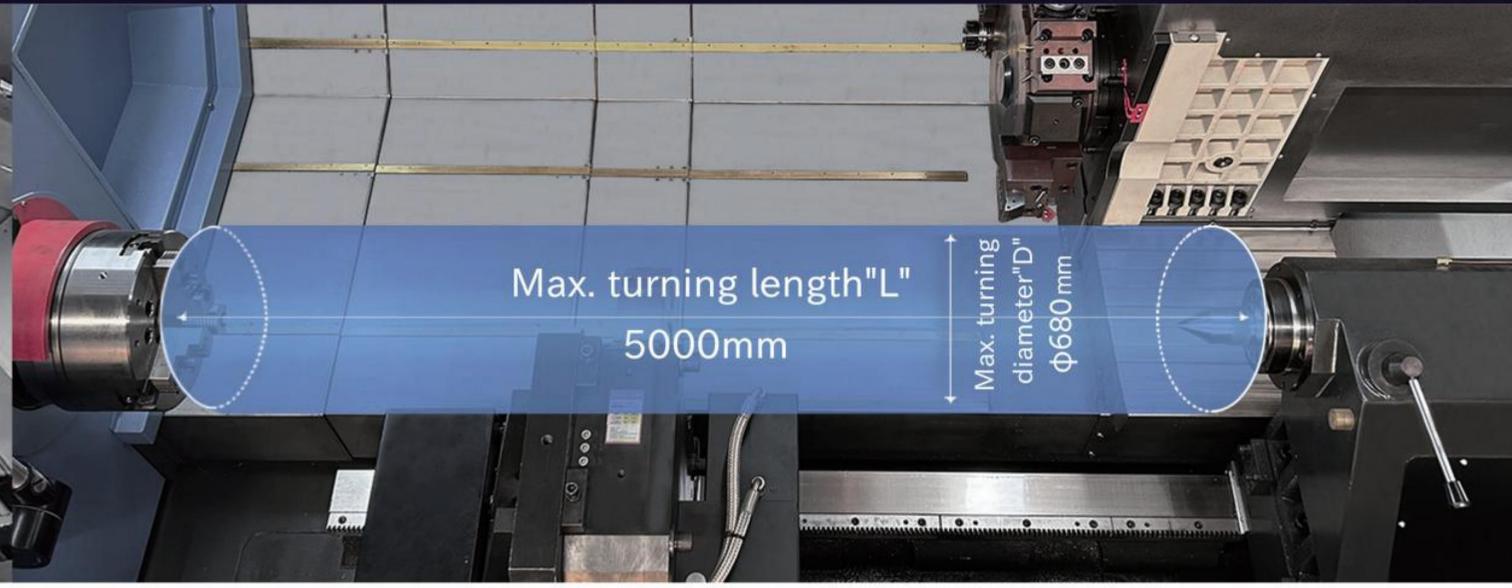
BASIC STRUCTURE

Machine capabilities range from 2-axis to Y-axis, The 45° inclined bed structure, cast in one piece Various options available



MACHINING AREA

The largest work envelope in their class with a maximum turning diameter of $\phi 680$ mm and maximum turning length of 5m.



Centre distance	1100	1600	2100	3100	4100	5100
Chuck Size (inch)	15/18/21/24					
X-axis travel (mm)	350					
Y-axis travel (mm)	150 (± 75)					
Z-axis travel (mm)	1000	1500	2000	3000	4000	5000

*Chucks and rotary cylinders are optional.

Max. turning diameter

$\phi 680$ mm

Max. turning length

5000 mm

Spindle

The gearbox design allows the CRL700/CRL800 spindles to have unparalleled power and torque, which boosts productivity and delivers extreme heavy-duty cutting capability.

Max. spindle speed

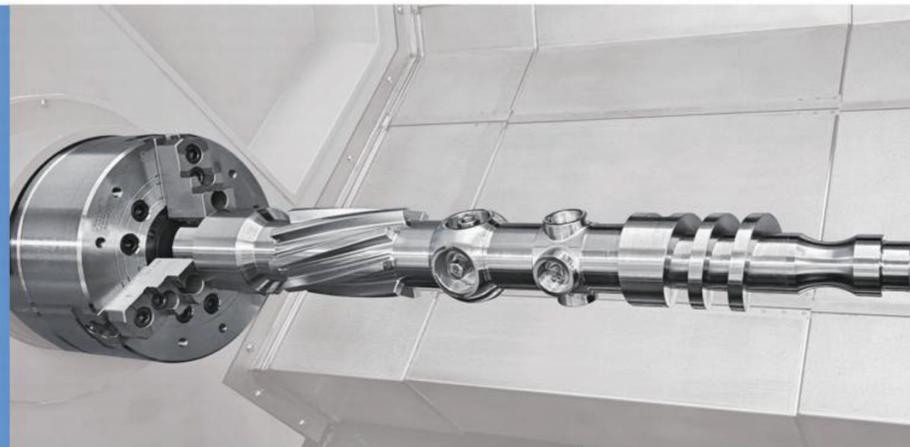
1200–3000 r/min

Max. spindle power

30 kw

Max. spindle torque

2176 N.M



Spindle front taper	Spindle through hole (mm)	Max. Spindle speed (r/min)	Max. Spindle power (KW)	Max. spindle torque (N.M)
A2-8	$\phi 88$	3000	22	708 {1888}
A2-11	$\phi 105$	2000	22	
A2-11	$\phi 132$	1800	30	816 {2176}
A2-15	$\phi 181$	1600	30	
A2-15	$\phi 220$	1200	30	

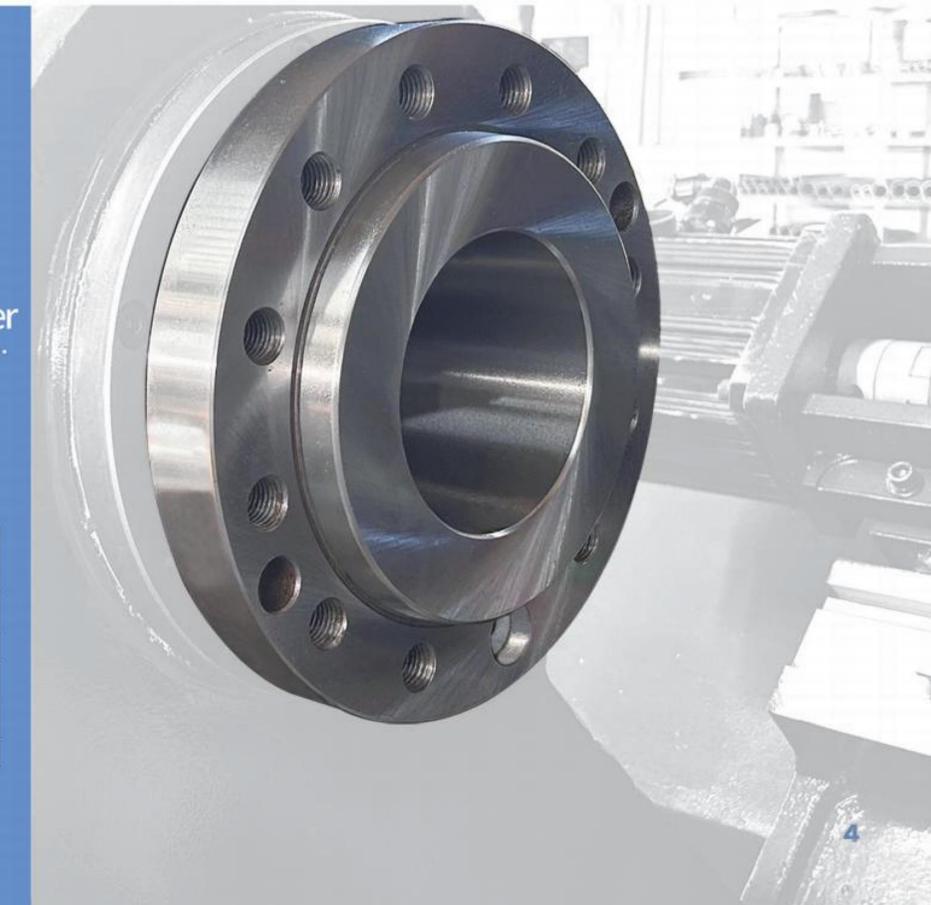
Machines are available with various spindle-through-hole sizes to provide the optimum machining solutions for different sized pipes.

Max. spindle through hole diameter

$\phi 220$ mm

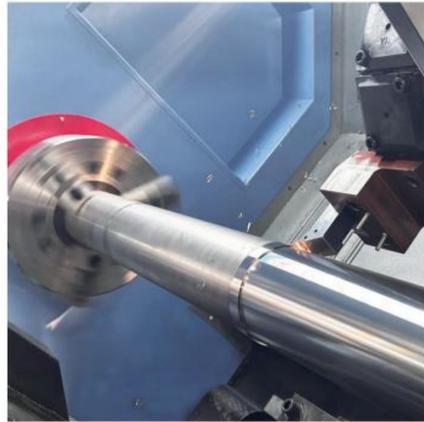
Unit: mm

Spindle front taper	Max. through hole diameter	Bar through diameter
A2-8	$\phi 88$	$\phi 75$
A2-11	$\phi 105$	$\phi 90$
A2-11	$\phi 132$	$\phi 120$
A2-15	$\phi 181$	$\phi 166$
A2-15	$\phi 220$	$\phi 220$

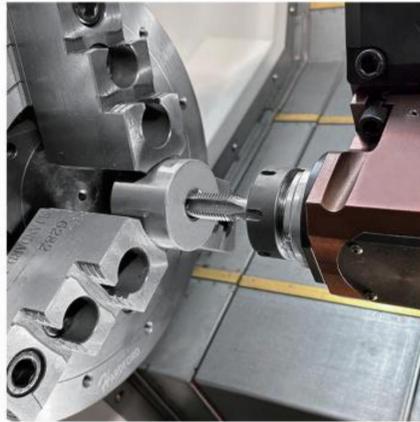


CUTTING PERFORMANCE

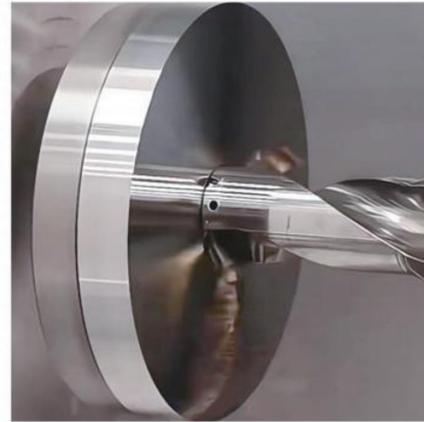
CRL700 machines can perform high-productivity, heavy-duty machining operations such as ID/OD turning, end milling, tapping and U-drilling etc.



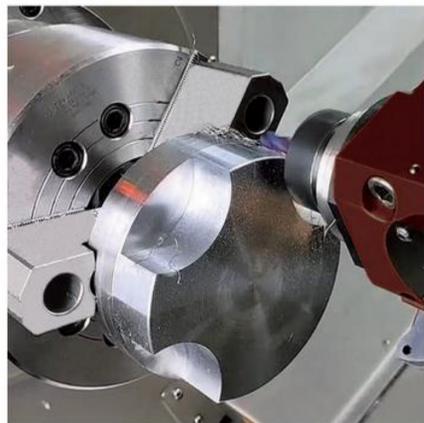
O.D turning(Material diameterφ220mm)	
Speed	400rpm
Feed	0.35mm/rev
Depth of cut	10mm
Chip Removal rate	150cm ³ /min



Tapping	
Cutting Tool	20mm
Feed	2.5mm/rev
Depth of cut	30mm



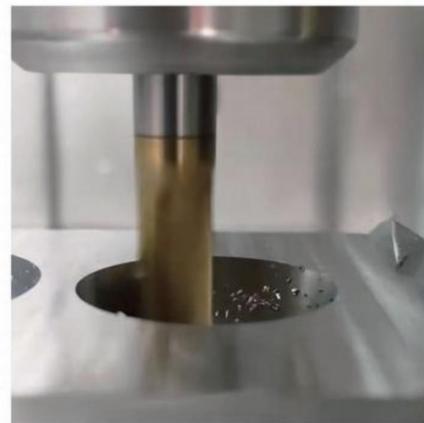
U-Drill	
Cutting Tool	φ30mm
Cutting line speed	2000m/min
Feed	0.15mm/rev
Chip Removal rate	150cm ³ /min



End mill ((Low Speed)	
Cutting Tool	φ32mm
Cutting line speed	30m/min
Feed	90mm/min
Chip Removal rate	105cm ³ /min



End mill (High Speed)	
Cutting Tool	φ25mm
Cutting line speed	220m/min
Feed	1000mm/min
Chip Removal rate	175cm ³ /min



milling	
Cutting Tool	φ25mm
Cutting line speed	240m/min
Feed	800mm/min
Chip Removal rate	100cm ³ /min

STABLE THREADING PERFORMANCE

All **CRL700** series (2-Axis* to Y-Axis) are capable of threading work.

* In order to re-machine threads or perform arbitrary speed threading on a 2-Axis machine, additional optional devices have to be selected.

Threading repair function

This function allows users to repair threads even when the original program is not available. This is a standard Fanuc NC function.

Arbitrary speed threading

Optional

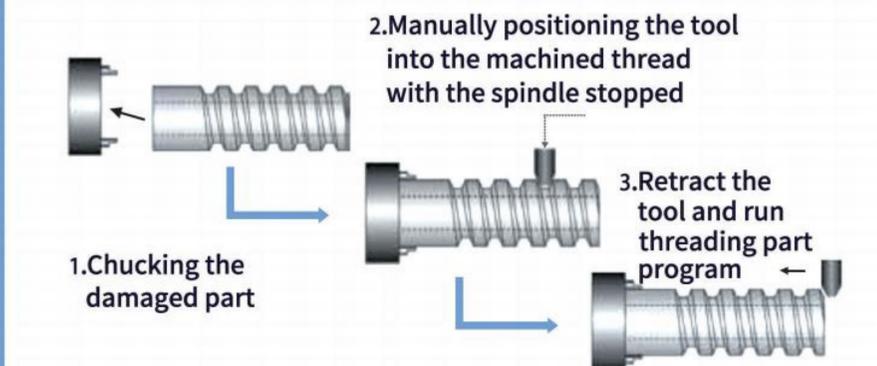
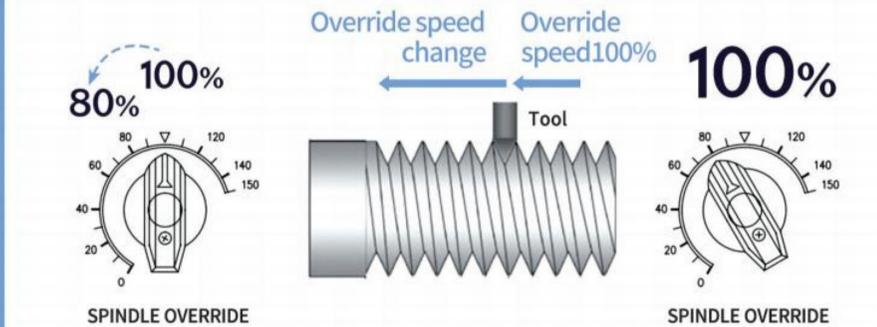
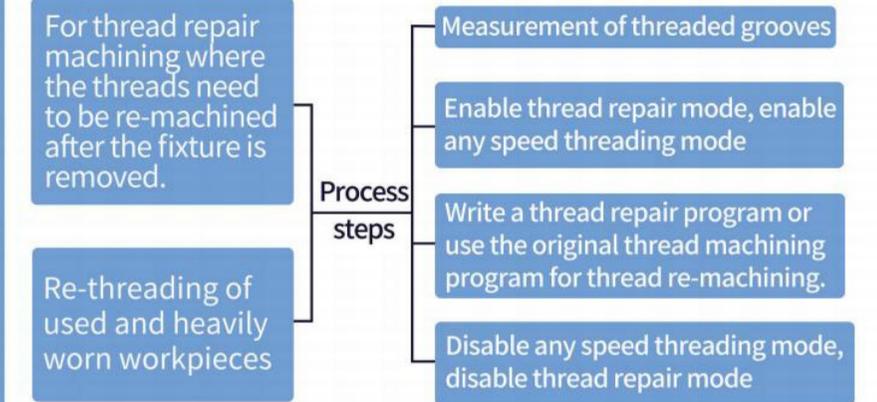
This function allows users to control and override spindle speeds in order to set them to produce/replicate the best thread quality.

Re-machining function

Optional

This function is included in the arbitrary speed threading. It allows users to re-machine damaged threads using the existing program.

Thread cutting and re-machining



STANDARD & OPTIONAL SPECIFICATIONS

Diverse optional features are available for customer-specific work applications.

Description	Features	CRL700 series		CRL800 series				
		A2-11		A2-11		A2-15		
Spindle taper		105	132	105	132	181	220	
Through hole of main spindle								
Chuck	15inch	●	●	●	●	X	X	
	18inch	○	○	○	○	X	X	
	21inch	X	○	X	○	●	X	
	24inch	X	○	X	○	○	●	
Jaw	Soft Jaws	●	●	●	●	●	●	
	Hardened & ground hard jaws	○	○	○	○	○	○	
Chucking option	Single pressure chucking	●	●	●	●	●	●	
	Dual pressure chucking	X	X	X	X	○	○	
	Chuck clamp confirmation	○	○	○	○	○	○	
Steady rest	Hydraulic	HCF3.1 (20~165mm)	○	○	○	○	○	○
		HCF3.2 (50~200mm)	○	○	○	○	○	○
		HCF4 (30~245 mm)	○	○	○	○	○	○
		HCF5 (45~310mm)	○	○	○	○	○	○
		HCF5.1 (85~350mm)	X	X	○	○	○	○
	Type	Single	○	○	○	○	○	○
		Twin	○	○	○	○	○	○
Double		○	○	○	○	○	○	
Tailstock	Hydraulic Programmable type	●	●	●	●	●	●	
	Built-in dead center	●	●	●	●	●	●	
Coolant pump (60/50Hz)	4.5/3.0 Bar	○	○	○	○	○	○	
	7/5,10/7,14.5/10,28/19.5,70/70 Bar	○	○	○	○	○	○	
	Coolant level switch : Sensing level - Low	○	○	○	○	○	○	
Coolant options	Oil skimmer	○	○	○	○	○	○	
	Coolant chiller	○	○	○	○	○	○	
	Coolant pressure switch	○	○	○	○	○	○	
	Coolant gun	●	●	●	●	●	●	
Chip disposal	Chip conveyor (Right side)	●	●	●	●	●	●	
	Chip bucket	●	●	●	●	●	●	
	Air blower for chuck	○	○	○	○	○	○	
	Mist collector interface (Duct only)	○	○	○	○	○	○	
Optionals	Tool setter (automatic)	○	○	○	○	○	○	
	Automatic Door	○	○	○	○	○	○	
	Signal tower	○	○	○	○	○	○	
	Air gun	○	○	○	○	○	○	
	Automatic power of	○	○	○	○	○	○	
	Air unit for air chuck Single	○	○	○	○	○	○	
	Air unit for air chuck Twin	X	X	X	X	○	○	
manual guide	○	○	○	○	○	○		
Standard Accessories	Foundation bolt for anchoring	○	○	○	○	○	○	

Please contact DONGS SOLUTIONS representative for detailed machine information.

● Standard ○ Optional X N/A ◻ Available



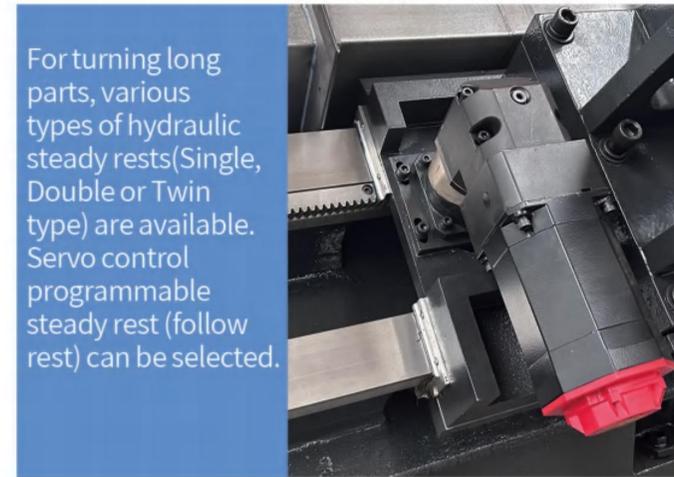
Fire Safety Precautions

There is a high risk of fire when using non-water-soluble cutting fluids, processing flammable materials, neglecting the controlled and careful use of coolants and modifying the machine without the consent of the manufacturer. Always check the SAFETY GUIDELINES carefully before using the machine.

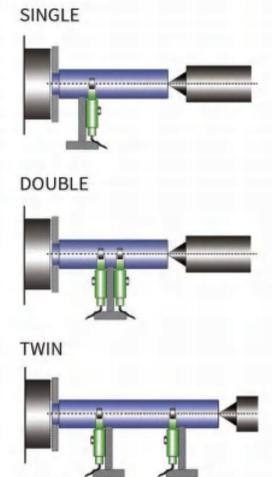
PERIPHERAL EQUIPMENT

Users can choose from a variety of configurations according to different processing needs.

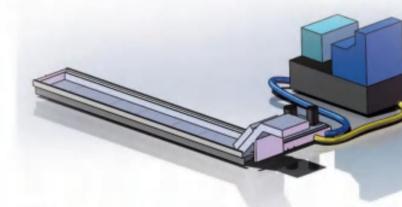
Hydraulic steady rest Optional



For turning long parts, various types of hydraulic steady rests (Single, Double or Twin type) are available. Servo control programmable steady rest (follow rest) can be selected.



Coolant chiller Optional

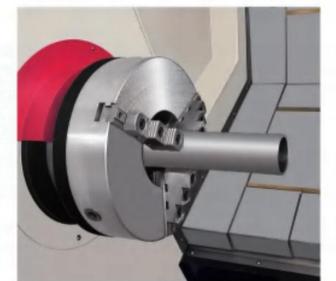


Coolant tank



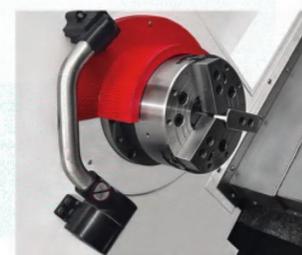
A coolant chiller is recommended to help prevent temperature rises and to reduce thermal deformation when using a water-insoluble coolant or high-pressure coolant system (i.e., power over 1.5KW).

Twin chucking Optional



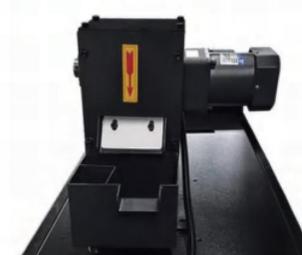
For more stable pipe threading processing, the twin chucking option (manual or pneumatic) is available. Please consult with DONGS Solutions for details.

Automatic tool setter Optional



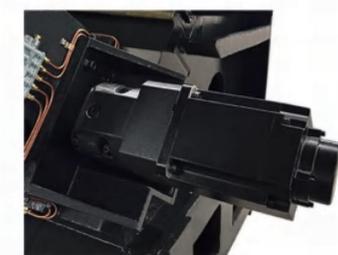
Renishaw tool setter

Oil skimmer Optional



Belt oil skimmer

Servo tailstock Optional



Servo programmable fully automatic tailstock

Oil mist filter Optional



Low noise/high efficiency/stable

CONVENIENT OPERATION

FANUC

Range of applications

Providing various applications related to planning, machining, improvement and utility, for customer convenience.

iHMI touchscreen Optional

iHMI provides an intuitive interface that uses a touchscreen for quick and easy operation.

USB and PCMCIA card QWERTY keyboard

- Manual Guide i optional
- Ergonomic operator panel
- 2MB Memory
- Hot keys



NUMERIC CONTROL SPECIFICATIONS

Division	Item	Specifications	FANUC					
			Fanuc i (FOi-F Plus-5)	Fanuc i (FOi-F Plus-5)	Fanuc i (FOi-F Plus-5)	Fanuc i (FOi-F Plus-1)	Fanuc i (FOi-F Plus-3)	Fanuc i (FOi-F Plus-0)
Controlled axis	Controlled axes		2(X,Z)	3(X,Z,C)	4(X,Z,C,Y)	2(X,Z)	3(X,Z,C)	4(X,Z,C,Y)
	Simultaneously controlled axes		2axes	3axes	4axes	2axes	3axes	4axes
Data input/output	Fast data server		○	○	○	○	○	○
	Memory card input/output		●	●	●	●	●	●
	USB memory input/output		●	●	●	●	●	●
Interface function	Larger capacity memory_2GB	Note *2) Available Option only with 15" Touch LCD (iHMI Only) .	X	X	X	X	X	○
	Embedded Ethernet		●	●	●	●	●	●
Operation	DNC operation	Included in RS232C interface.	●	●	●	●	●	●
	DNC operation with memory card		●	●	●	●	●	●
Program input	Workpiece coordinate system	G52-G59	●	●	●	●	●	●
	AI contour control I	G5.1Q_40 Blocks	○	○	○	○	○	○
Feed function	AI contour control II	G5.1Q_200 Blocks	○	○	○	○	○	○
	Manual Guide i (Conversational Programming Solution)		X	X	X	○	○	○
Operation Guidance Function	iHMI with Machining Cycle	Note *1) Only with 15" Touch LCD standard	X	X	X	X	X	○
	EZ Operation package		●	●	●	●	●	●
Setting and display	CNC screen dual display function		●	●	●	●	●	●
	FANUC MTConnect		☆	☆	☆	☆	☆	☆
Network	FANUCOPCUA		☆	☆	☆	☆	☆	☆
	Display unit	15" color LCD	X	X	X	X	X	●
Others	Threading repair function	15" color LCD with Touch Panel	X	X	X	X	X	○
			X	X	X	X	X	X

Network: FANUC MTConnect and FANUC OPC UA available.

● Standard ○ Optional X N/A ☆ Available

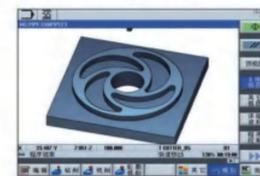
CONVENIENT OPERATION

Siemens S828D

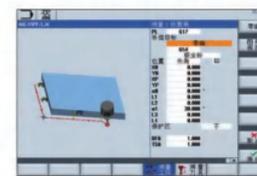
15. inch display

Siemens 828D' operation panel enhances operating convenience by incorporating common-design buttons and layout. It features a Qwerty keyboard for fast and easy data input and operation.

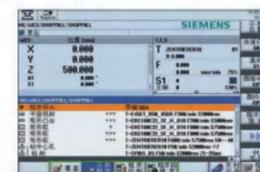
Convenient conversational functionality



3D finished product simulation function
This function observes the finest machining details and provides optimum machining reliability.



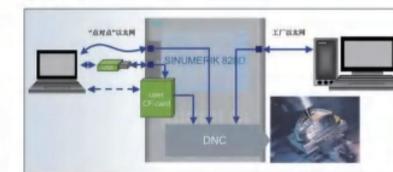
Measuring cycle function
Ensure machining accuracy



Flexible programme execution functions
In MDA mode, you can directly enter the programme manager to select the loaded programme, or save the MDI programme to the specified programme path.



Balance Turning
This function allows you to quickly complete two passes through the easy-to-use programming wizard or the graphical dialogue programming image of the ShopTurn step-by-step program, ensuring the correctness of the machining program and increasing programming efficiency.



RCS Host Remote Diagnostic Function
It establishes the connection and access between the remote diagnostic computer and the CNC system, and realises the functions of file transfer, remote display of the system operation screen, as well as remote operation and diagnosis, so as to better improve the efficiency of online service of machine tools.



NUMERIC CONTROL SPECIFICATIONS

Division	Item	Specifications	SIEMENS					
			2-Axis S828D	D S828D	S S828D	DS S828D	Y S828D	SY S828D
Controlled axis	Controlled axes		X,Z,SP	X,Z,C,R	X,Z,C,C2,B	X,Z,C,R,C2,B	X,Z,C,R,Y	X,Z,C,R,C2,Y,B
	Simultaneously controlled axes		4axes	4axes	4axes	4axes	4axes	4axes
Data input/output	Memory card input/output		X	X	X	X	X	X
	USB memory input/output		●	●	●	●	●	●
Interface function	Ethernet	(X130)	○	○	○	○	○	○
	On network drive	(without EES option, Extcall)	○	○	○	○	○	○
Operation	On USB storage medium, e.g. memory stick	(without EES option, Extcall)	●	●	●	●	●	●
	Workpiece coordinate system	G54 - G59, G507 - G599	●	●	●	●	●	●
Feed function	Advanced surface		X	X	X	X	X	X
	Top surface		X	X	X	X	X	X
Programming & Editing function	Look ahead number of block		1	1	1	1	1	1
	3D simulation, finished part		●	●	●	●	●	●
Operation Guidance Function	Simultaneous recording		●	●	●	●	●	●
	DXF Reader for PC integrated in SINUMERIK Operate		○	○	○	○	○	○
Setting and display	Shopturn		●	●	●	●	●	●
	EZ Operation package		●	●	●	●	●	●
Network	Operation via a VNC viewer		●	●	●	●	●	●
	MTConnect		☆	☆	☆	☆	☆	☆
Others	OPCUA		○	○	○	○	○	○
	Display unit	15.6" color display with touch screen	●	●	●	●	●	●
Part program storage size	CNC user memory 10 MB		●	●	●	●	●	●
	CNC user memory 100MB		○	○	○	○	○	○
	CNC user memory 6MB		X	X	X	X	X	X
	CNC user memory 40GB (with PCU or IPC)		X	X	X	X	X	X
	CNC user memory without limit(Execution from external storage devices)(EES / Using by USB or Network)		○	○	○	○	○	○
	HMI user memory for CNC part program 6GB		X	X	X	X	X	X

● Standard ○ Optional X N/A ☆ Available 12

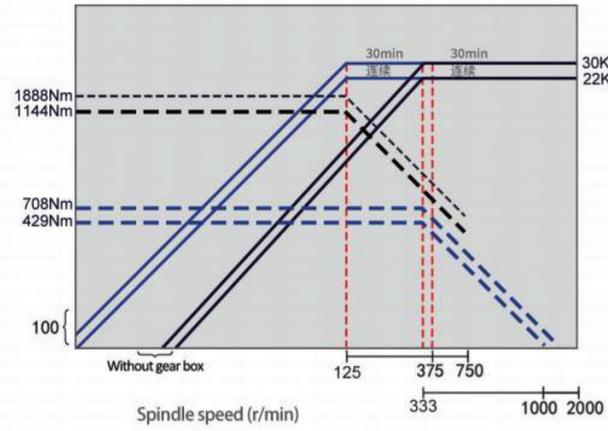
POWER & TORQUE

FANUC

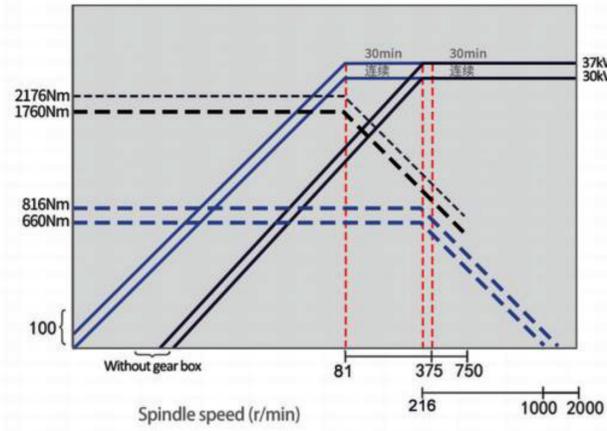
POWER & TORQUE

SIEMENS

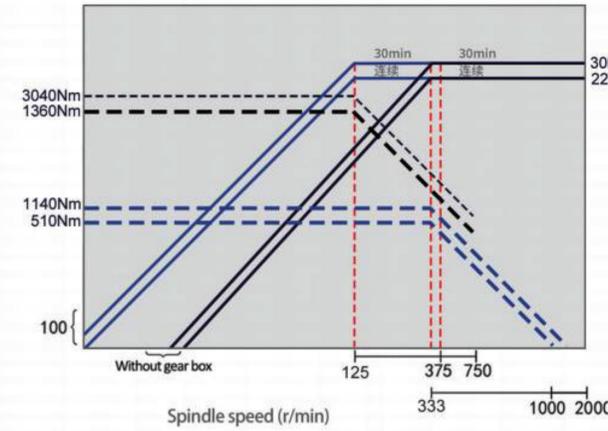
CRL700 series



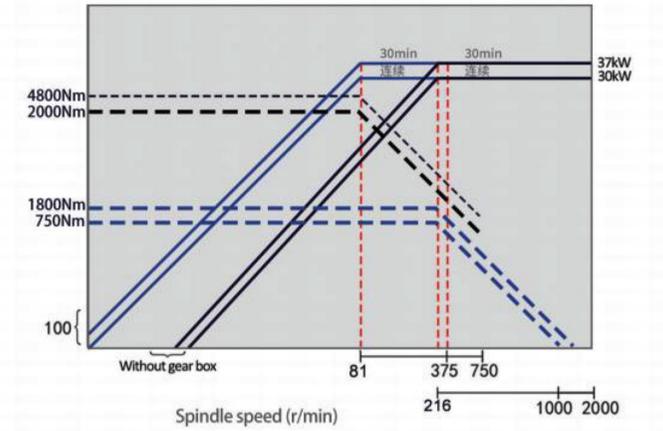
CRL700 series



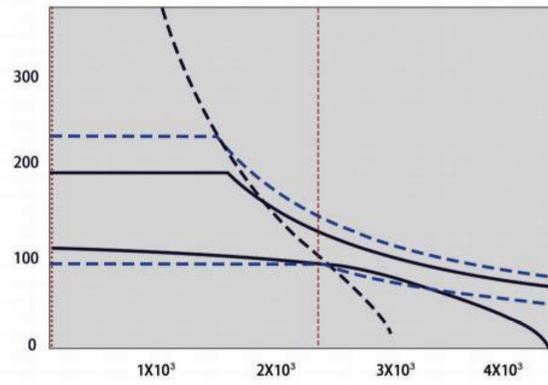
CRL700 series



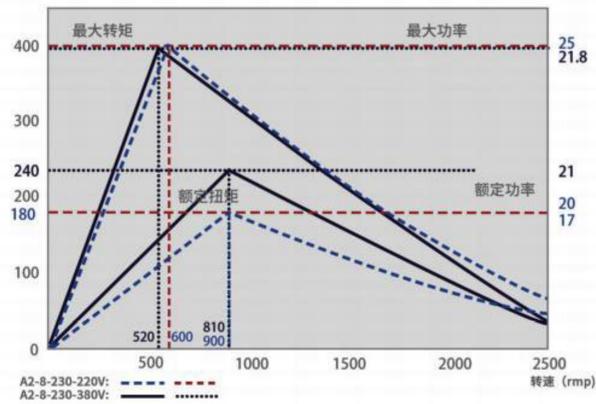
CRL700 series



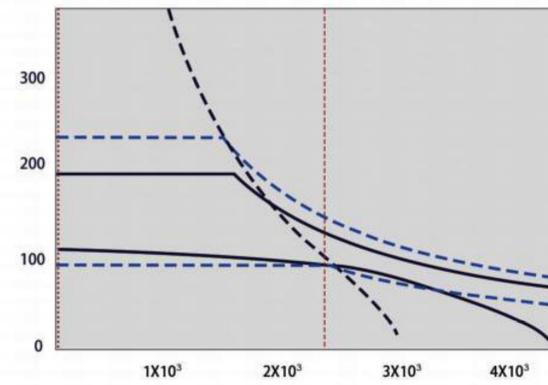
Torque-N [Sub spindle A2-6]



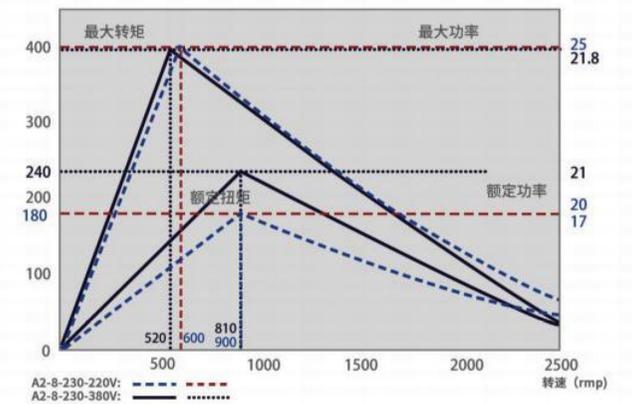
Torque-N [Sub spindle A2-8]



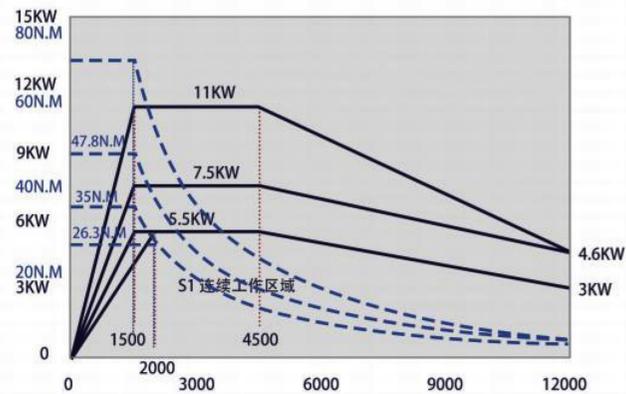
Torque-N [Sub spindle A2-6]



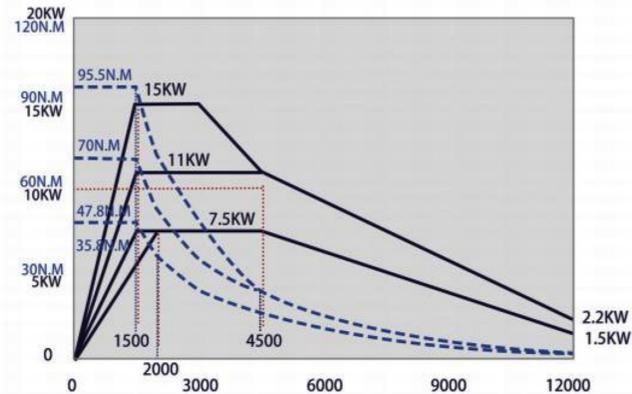
Torque-N [Sub spindle A2-8]



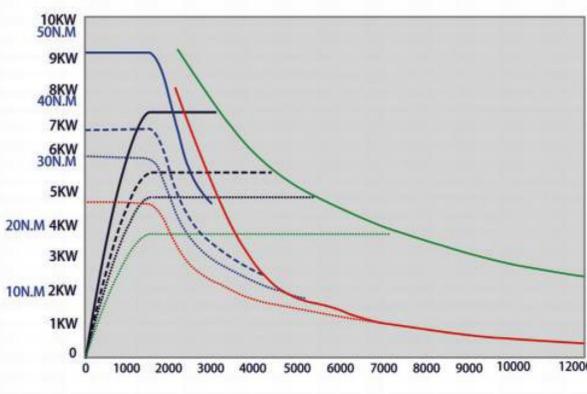
Rotary tool 5.5KW



Rotary tool 7.5KW Optional



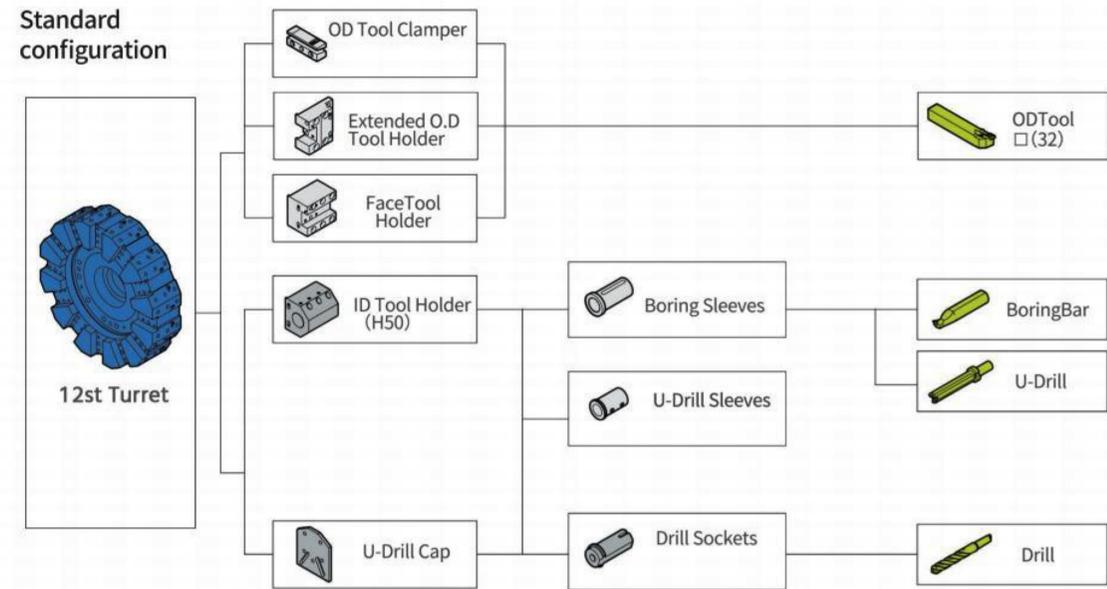
Rotary tool 5.5KW



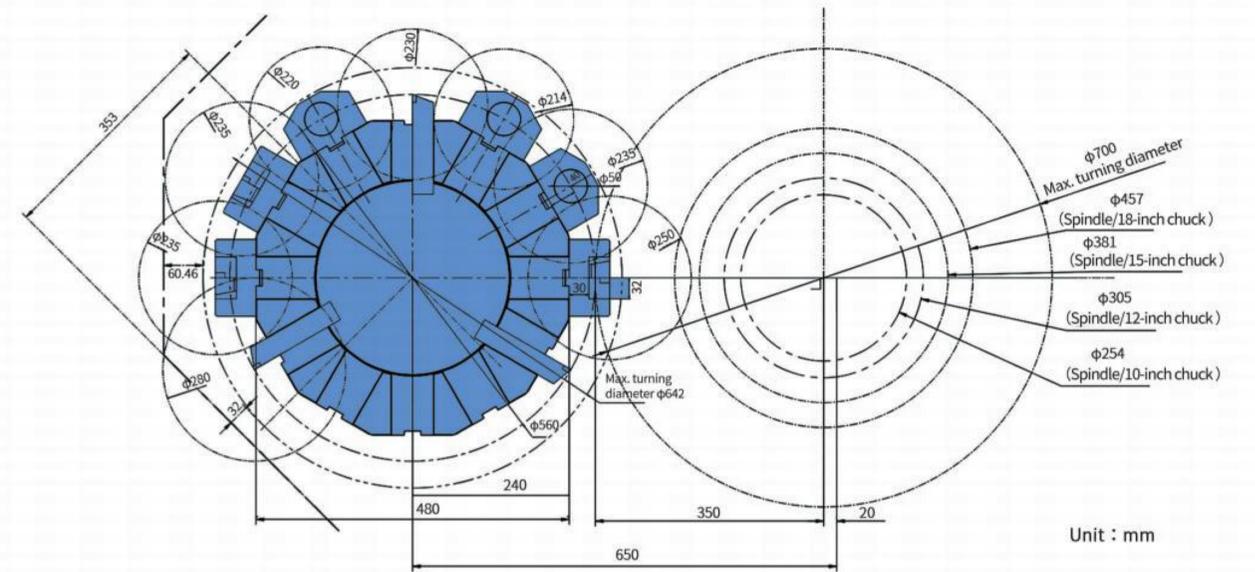
TOOLING SYSTEM

TOOL INTERFERENCE PATTERN

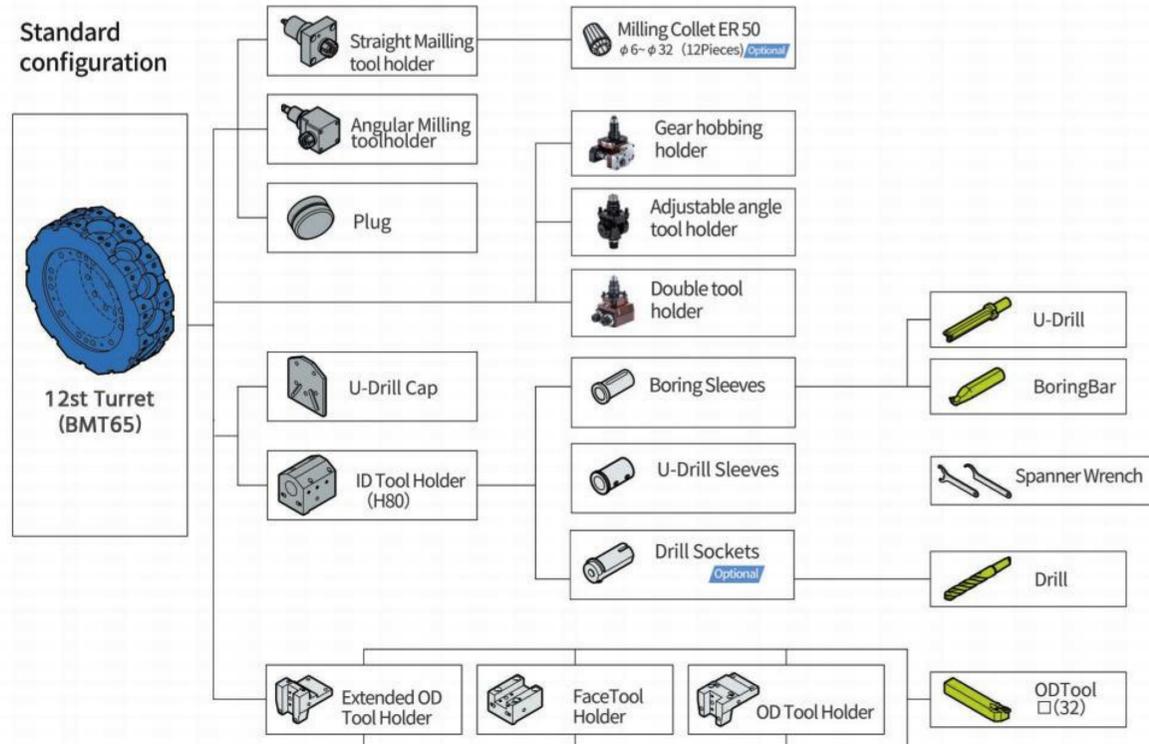
Turning turret



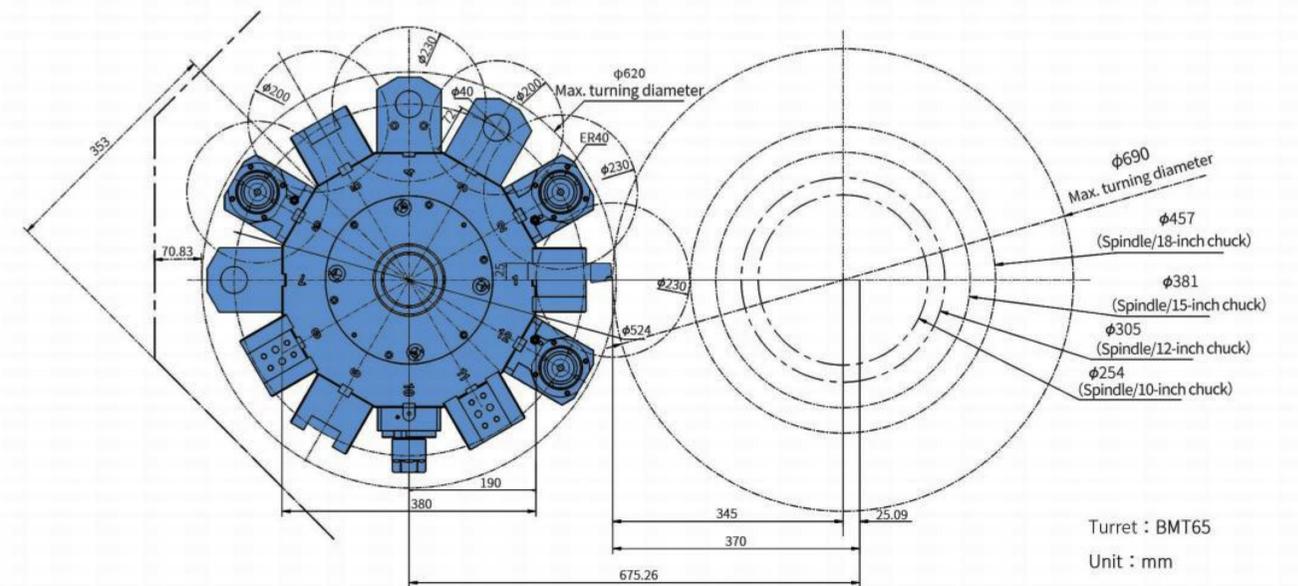
Turning turret



BMT65 Power turret



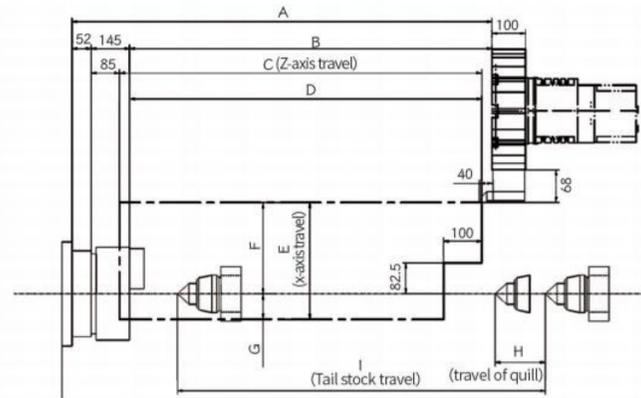
BMT65 Power turret



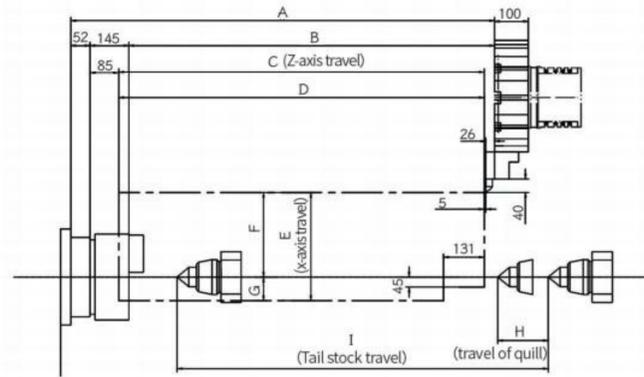
WORKING RANGE

Tuning turret

End face block

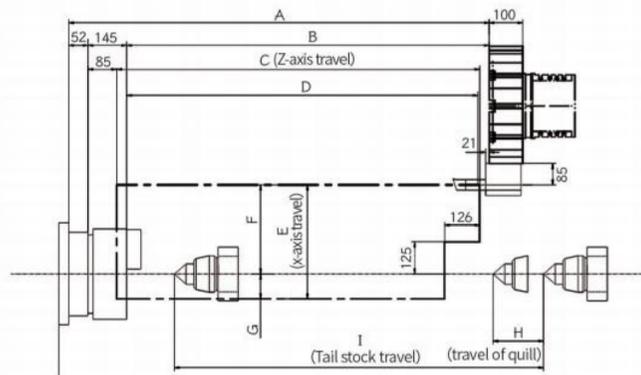


OD tool block



Model	Travel	End face /O.D./Boring				Tail stock travel
		A	B	C	D	
CRL700-1000	1145	995	1000	950	1100	
CRL700-1500	1645	1495	1500	1450	1600	
CRL700-2000	2145	1995	2000	1950	2100	
CRL700-3000	3145	2995	3000	2950	3100	
CRL700-4000	4145	3995	4000	3950	4100	
CRL700-5000	5145	4995	5000	4950	5100	

Boring tool block

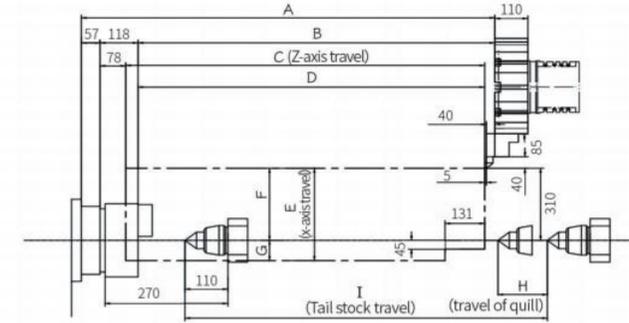


Model	Tool holder	Travel			
		E	F	G	H
CRL700 (1000 - 3000)	End face block	380	302	78	200
	OD tool block		325	55	
	Boring tool block		342	38	

WORKING RANGE

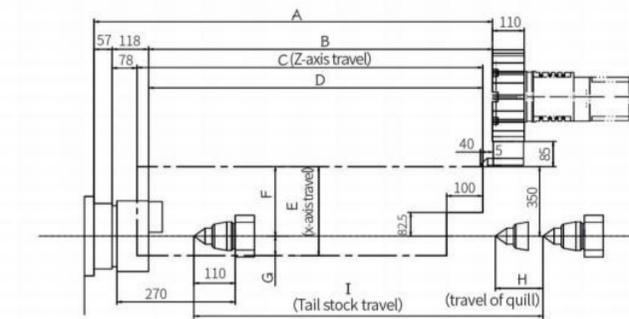
BMT65 Power turret

OD tool block



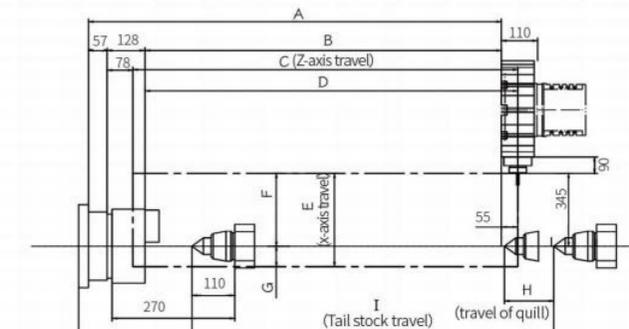
Model	Travel	A	B	C	D	E	F	G	H	I
CRL700-1000	1145	995	1000	950						1100
CRL700-1500	1645	1495	1500	1450						1600
CRL700-2000	2145	1995	2000	1950	380	310	70	200		2100
CRL700-3000	3145	2995	3000	2950						3100
CRL700-4000	4145	3995	4000	3950						4100
CRL700-5000	5145	4995	5000	4950						5100

End face block

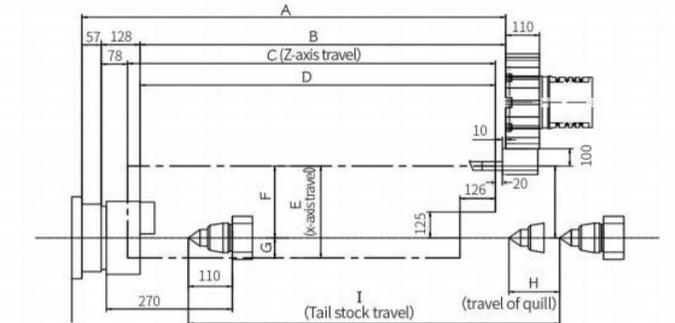


型号	行程	A	B	C	D	E	F	G	H	I
CRL700-1000	1145	995	995	950						1100
CRL700-1500	1645	1495	1495	1450						1600
CRL700-2000	2145	1995	1995	1950	380	350	30	200		2100
CRL700-3000	3145	2995	2995	2950						3100
CRL700-4000	4145	3995	3995	3950						4100
CRL700-5000	5145	4995	4995	4950						5100

Radial living tool holder

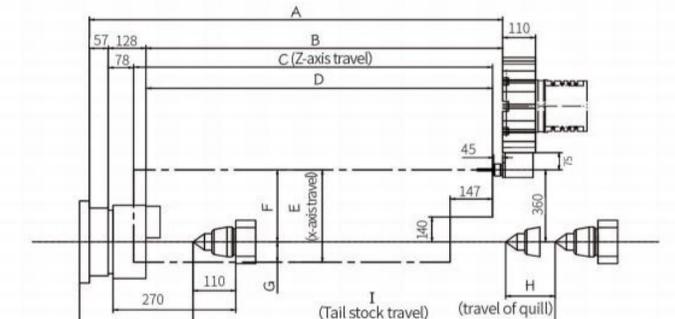


Boring tool block



Model	Travel	A	B	C	D	E	F	G	H	I
CRL700-1000	1125	995	1015	965						1100
CRL700-1500	1625	1495	1515	1465						1600
CRL700-2000	2125	1995	2015	1965	380	335	45	200		2100
CRL700-3000	3125	2995	3015	2965						3100
CRL700-4000	4125	3995	4015	3965						4100
CRL700-5000	5125	4995	5015	4965						5100

Axial living tool holder

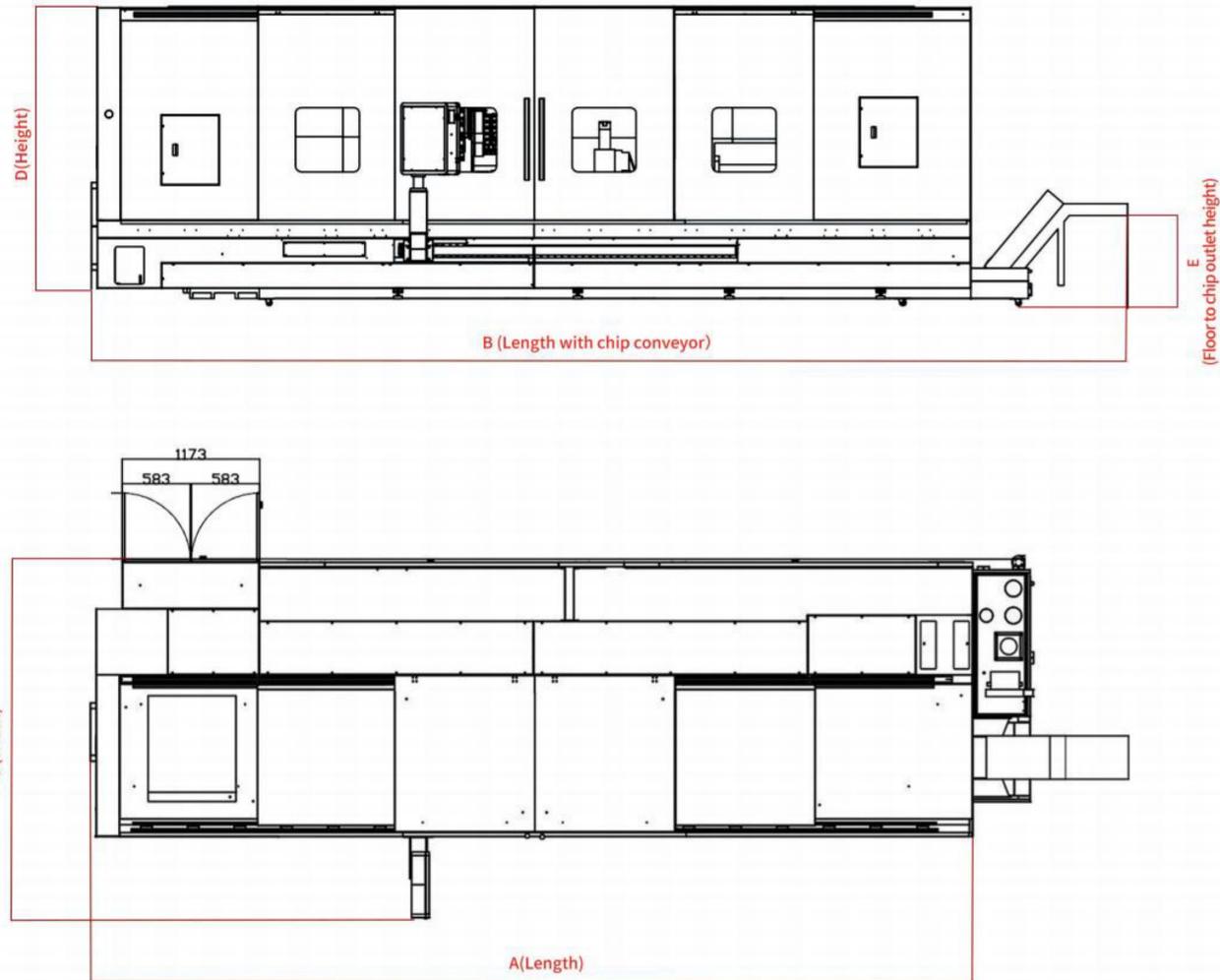


型号	行程	A	B	C	D	E	F	G	H	I
CRL700-1000	1125	995	1045	950						1100
CRL700-1500	1625	1495	1545	1450						1600
CRL700-2000	2125	1995	2045	1950	380	360	20	200		2100
CRL700-3000	3125	2995	3045	2950						3100
CRL700-4000	4125	3995	4045	3950						4100
CRL700-5000	5125	4995	5045	4950						5100

型号	行程	A	B	C	D	E	F	G	H	I
CRL700-1000	1125	995	1090	1050						1100
CRL700-1500	1625	1495	1590	1550						1600
CRL700-2000	2125	1995	2090	2050	375	345	30	200		2100
CRL700-3000	3125	2995	3090	3050						3100
CRL700-4000	4125	3995	4090	4050						4100
CRL700-5000	5125	4995	5090	5050						5100

OVERALL DIMENSIONS

MACHINE SPECIFICATIONS



Unit : mm

Model	A (Length)	B (Length with chip conveyor)	C (Width)	D (Height)	E (Floor to chip outlet height)
CRL700-1000	4000	5400	2700	2400	830
CRL700-1500	4550	5950	3000	2400	
CRL700-2000	5500	6900	3000	2400	
CRL700-3000	6700	8100	3000	2400	
CRL700-4000	7600	9000	3100	2400	
CRL700-5000	8600	10000	3100	2400	

* 500mm of a space is required to the right of the machine in order to install and remove chip conveyor.

* Machine foundation : Anchoring is recommended to maintain accuracy over a long period of time, The anchor bolts and other related parts of foundation work are supplied as standard items. Please consult with DONGS Solutions and sales technicians regarding ground and operating conditions.

* Some peripheral equipment can be placed in other places.

Description		Unit	CRL700	CRL800		
Capacity	Swing over bed	mm	Φ 780	Φ 850		
	Swing over saddle	mm	Φ 500	Φ 630		
	Chuck size	inch	12/15/18/21/24			
Travels	X-axis	mm	350			
	Y-axis	mm	±75			
	Z-axis	mm	1000/1500/2000/3000/4000/5000			
Feedrates	Rapid traverse rate	X-axis	mm/min	16		
		Y-axis	mm/min	10		
		Z-axis	mm/min	16		
Main Spindle	Main spindle motor power	KW	22 {30}			
	Spindle Ratio	/	1:3			
	Spindle Ratio optional gearbox	/	1:8			
	Spindle nose	ASA	A2-8	A2-11	A2-11	A2-15
	Through hole of main spindle	mm	Φ88	Φ105	Φ132	Φ181 Φ220
	Bar through diameter	mm	75	90	120	166 220
	Spindle bearing diameter (Front)	mm	Φ88	Φ105	Φ132	Φ181 Φ220
180			240	280	360 420	
Turret	No. of tool stations	ea	12			
	OD tool size	mm	32X32			
	Max. boring bar size	mm	50			
	Turret indexing time (1 station swivel)	s	0.5			
	Max. rotary tool speed	r/min	BMT65 (4000)			
	Rotary tool motor power	KW	5.5/7.5			
Tailstock	Tail stock travel	mm	1100/1600/2100/3100/4100/5100			
	sleeve diameter	mm	150/160			
	Travel of sleeve	mm	180			
	sleeve bore taper	MT	MT5/MT6			