Rotating exactly, using **EXACT**

EXACT

www.exactmachinery.com

EXACT MACHINERY CO., LTD.

- **No.418, Shueiyuan Rd., Fengyuan Dist.,**
  Taichung City 420074, TAIWAN.
- TEL: 886-4-25158290
- FAX : 886-4-25158291
- E-mail:info@exactmachinery.com
- Web site: www.exactmachinery.com

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EXACT MACHINERY CO., LTD.

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EXACT

EXACT is a professional global supplier with a robust technological R&D foundation, complimented by a quality minded workforce with "state of the art" manufacturing equipment and a stringent quality control department, this, plus a professional distribution network all of whom are committed to solution finding and complete customer satisfaction. EXACT top quality CNC Rotary Tables and Indexing Tables are used in a wide variety of applications in the Medical, Aerospace and Automotive industries, in the manufacturing of Oil & Water pipeline valves and equipment and in Job Shops where flexibility is required. Plus many others.

Throughout over 2 decades of experience, EXACT has continuously developed new and innovates products to improve the manufacturing processes and productivity for our customers. With top quality products and professional support, our customers are **"Rotating exactly, using EXACT!"**

Rotating exactly, using EXACT

Research and Development

Exact Machinery has a specialized R & D team who work closely with customers in developing products with the optimum performance characteristics to ultimately create the ideal solution to meet specific application needs, during which Solid Works 3D software and finite element analysis programs are used.

The mechanical structures are simulated and analyzed thus the most demanding technical specifications are prequalified and the design data can be passed onto the customer in the fastest possible way.

Parts Manufacturing and Assembly

All key components are manufactured in or state of the art workshops to achieve and maintain the highest quality possible.

All components and sub-assemblies are meticulously checked prior to and throughout the assembly process.

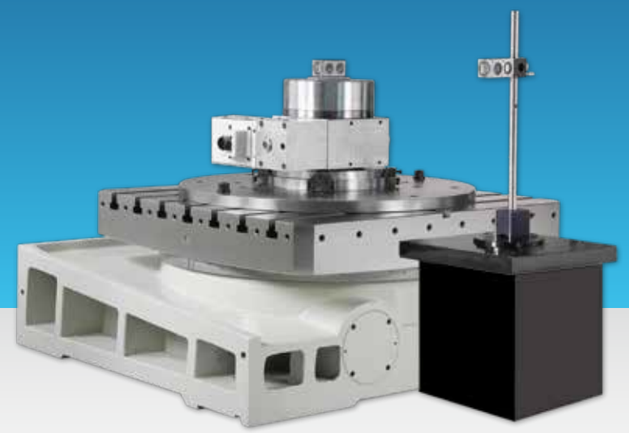
Tables are assembled and tested under strict enforcement of standardized procedures based upon ISO 9001.

Quality Control and Final Inspection

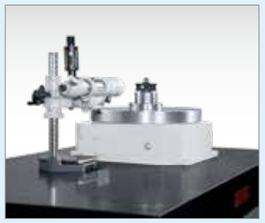
Our quality procedures not only guarantee a precise assembly, but also verifies that each component is manufactured perfectly within specification, by using the most up to date 3D measuring devices.

Each Table has the positioning accuracy and repeatability checked in accordance to ISO 230-2 standards, either by using an optical auto-collimator or a laser measuring system depending upon table type.

The laser angular measurement executes measurement at any angle which will work out the real involute teeth tolerance



● Agilent Laser Angular Position Measurement System



● Optical Auto-collimator

● Zeiss 3D Measuring Machines

● Worm Wheel Measuring Instrument

● Surface Roughness Measuring Instrument

● Hardness Tester Instrument

● 2D measuring machines

EXACT

CONTENTS

Rotary Table

Indexing Table, Non-Lifting, Motor Driven with Hirth Gear

Indexing Table, Non-Lifting, Rack & Pinion Drive with Hirth Gear

Manual Indexing Table, with Hirth Gear

Automatic Pallet Changer with Worktable

NC Rotary Table with Torque Motors

Accessories

NOTE : The information contained in this product catalogue is based on detail available at the time of printing; EXACT reserves the right to make changes arising from constant product development without advance notice

NCT/TRT/ERT CNC Rotary Tables with Worm & Wheel Drive

LARGE CONTACT SURFACES ASSURES THE ULTIMATE IN POWERFUL PERFORMANCE AND SMOOTH MOTION

The NCT series of tables expand Machining Centers production capacity. Mounted in either a horizontal or vertical plane, these tables are used to add 4th or 5th axis capability. Inside the rotary tables, the worm shaft and worm gear system decide the tables' accuracy and life. Through the strict inspection and in-house machining of the worm system, Exact guarantees products optimal performance and high dynamic durability.

Materials

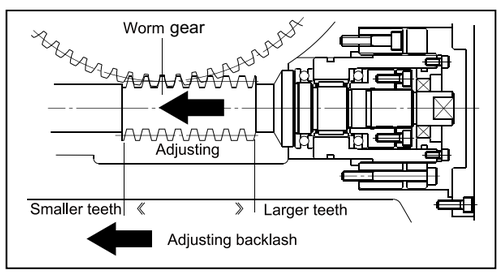
Worm gear: Special high-tensile aluminum-brass equal in strength to a steel alloy.
Worm shaft: Hardened alloy steel

High Rotation Torque

The combination of brass and alloy steel offers less friction. Motor torque is transferred efficiently. High class material worm system guarantees high torque transmission.

Large Worm Gear

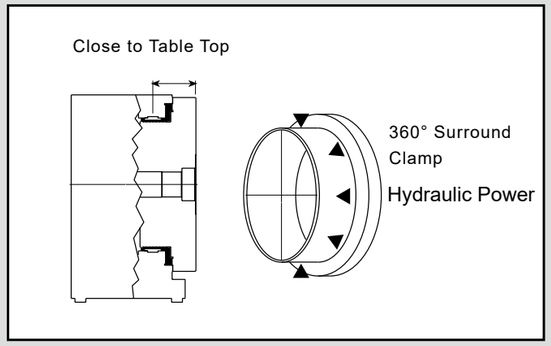
The worm gear with a large pitch diameter creates a large engagement area and less pressure on the contact surface, resulting in resistance against wear.



NCT-L

Rugged, 360° Surround Clamping

Our massive, 360° low volume, high speed Hydraulic Clamping System is immediately behind the table to ensure maximum rigidity during machining operations.
A solid and sealed clamping structure maintains maximum holding power while keeping contaminates out.
Only a small amount of hydraulic fluid is required to achieve an optimum clamping force, the source of which can be from a mini hydraulic pump unit or an air-over-oil intensifier; both are options.



- Wide range of types and sizes
- Robust and wear-resistant design
- Outstanding rotation torque
- High dynamic accuracy and longevity
- Easy installation and maintenance

TRT

NCT

NCT-T

NCT-TN

NCT-HB

NCT

CNC Rotary Table

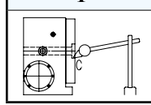
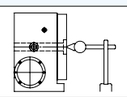
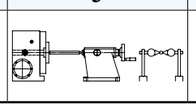
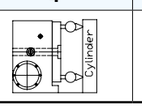
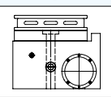
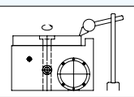
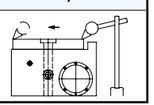
NCT tables are designed with axial - radial bearings to provide excellent load and thrust capabilities. The hydraulic clamp produces a massive holding power and the housings withstand any twisting or flexing. The large center bore series provides for added flexibility when adding work holding devices.

● Suitable for Vertical and Horizontal mounting

Model			NCT-125R(L)	NCT-170R(L)	NCT-200R NCT-B-200R	NCT-250R NCT-B-250R	NCT-320R(LV) NCT-B-320RV(LV)
Table diameter		(mm)	Ø125	Ø170	Ø200	Ø250	Ø320
Diameter of "Pilot" bore		(mm)	$Ø40^{H7}$	$Ø50^{H7}$	$Ø60^{H7}/Ø75^{H7}$	$Ø50^{H7}/Ø80^{H7}$	$Ø60^{H7}/Ø110^{H7}$
Diameter of through hole		(mm)	Ø25	Ø30	Ø40/Ø65	Ø40/Ø70	Ø46/Ø100
Overall height with table top horizontal		(mm)	150	190	195	200	230
Center height with table top vertical		(mm)	110	135	135	170	210
Width of T slots		(mm)	12^{H7}	12^{H7}	12^{H7}	12^{H7}	14^{H7}
Width of alignment key in mounting base		(mm)	14^{h7}	14^{h7}	18^{h7}	18^{h7}	18^{h7}
Clamp operation pressure (Hydraulic)		(bar)	35	35	35	35	35
Ambient temperature		(°C)	18~40				
Minimum input increment		(degree)	0.001	0.001	0.001	0.001	0.001
Gear ratio, Motor to Table Top			1/90	1/90	1/90	1/120	1/120
Table speed	(motor 3000 r.p.m)		33.3	33.3	33.3	25	25
	(motor 4000 r.p.m)		44.4	44.4	44.4	33.3	33.3
Servo motor (Optional)	FANUC		α2i	α4i	α4i	α8i	α12i
	MITSUBISHI		HG-105T	HG-54T	HG-54T	HG-104S	HG-204S
	SIEMENS		1FK7042	1FK7060	1FK7060	1FK7063	1FK7083
Indexing accuracy		(sec of arc)	60	20	20	15	15
Repeatability		(sec of arc)	4	4	4	4	4
Rotation torque		(kgf-m) (N-m)	12 118	16 157	23 225	48 470	78 764
Permissible load (With table clamped)	F	(kgf) (N)	600 5880	800 7840	1000 9800	1400 13720	1700 16660
	FxL	(kgf-m) (N-m)	15 147	17 167	24 235	50 490	85 833
	FxL	(kgf-m) (N-m)	20 196	40 392	65 637	85 833	110 1078
Permissible piece part and fixture weight	0°	(kg)	100	150	200	250	350
	90°	(kg)	50	70	85	100	150
Net Weight		(kg)	38	60	75	110	220
Allowable work inertia	$J=\frac{W\cdot D^2}{8}$	($kg\text{-}m^2$)	0.20	0.54	1.00	1.95	4.48

* We reserve the right to make changes arising from constant product development without advance notice.
* The list of fitting servomotor, please refer to page 61.

Guaranteed accuracy

1	2	3	4	5	6	7
						

NCT

CNC Rotary Table

NCT tables are designed with axial - radial bearings to provide excellent load and thrust capabilities. The hydraulic clamp produces a massive holding power and the housings withstand any twisting or flexing. The large center bore series provides for added flexibility when adding work holding devices.

● Suitable for Vertical and Horizontal mounting

Model			NCT-400R NCT-B-400R	NCT-B-500R	NCT-B-630RV	NCT-B-800R	NCT-B-1000R	NCT-B-1200R
Table diameter		(mm)	Ø400	Ø500	Ø630	Ø800	Ø1000	Ø1200
Diameter of "Pilot" bore		(mm)	$Ø60^{H7}/Ø155^{H7}$	$Ø200^{H7}$	$Ø250^{H7}$	$Ø295^{H7}$	$Ø305^{H7}$	$Ø330^{H7}$
Diameter of through hole		(mm)	Ø51/Ø150	Ø170	Ø210	Ø250	Ø260	Ø280
Overall height with table top horizontal		(mm)	250	300	325	380	430	550
Center height with table top vertical		(mm)	250	310	400	480	650	750
Width of T slots		(mm)	14^{H7}	18^{H7}	18^{H7}	22^{H7}	22^{H7}	22^{H7}
Width of alignment key in mounting base		(mm)	18^{h7}	18^{h7}	18^{h7}	22^{h7}	22^{h7}	22^{h7}
Clamp operation pressure (Hydraulic)		(bar)	35	35	35	35	35	35
Ambient temperature		(°C)	18~40					
Minimum input increment		(degree)	0.001	0.001	0.001	0.001	0.001	0.001
Gear ratio, Motor to Table Top			1/180	1/180	1/180	1/360	1/360	1/720
Table speed	(motor 3000 r.p.m)		16.6	16.6	16.6	8.3	8.3	4.16
Servo motor (Optional)	FANUC		α12i	α12i	α22i	α22i	α22i	α30i
	MITSUBISHI		HG-204S	HG-204S	HG-354S	HG-354S	HG-354S	x
	SIEMENS		1FK7083	1FK7083	1FK7101	1FK7101	1FK7101	1FK7103
Indexing accuracy		(sec of arc)	15	15	15	15	15	15
Repeatability		(sec of arc)	4	4	4	4	4	4
Rotation torque		(kgf-m) (N-m)	170 1666	240 2352	420 4116	520 5096	600 5880	800 7840
Permissible load (With table clamped)	F	(kgf) (N)	2000 19600	2300 22540	2600 25480	2800 27440	4900 48020	6000 58800
	FxL	(kgf-m) (N-m)	180 1764	250 2450	450 4410	550 5390	650 6370	1800 17640
	FxL	(kgf-m) (N-m)	180 1764	250 2450	400 3920	700 6860	1800 17640	2000 19600
Permissible piece part and fixture weight	0°	(kg)	500	800	1500	2000	3000	5000
	90°	(kg)	200	350	600	800	1200	2000
Net Weight		(kg)	300	450	820	1600	2800	4000
Allowable work inertia	$J=\frac{W\cdot D^2}{8}$	($kg\text{-}m^2$)	10.00	25.00	49.61	112.00	375.00	900.00

* We reserve the right to make changes arising from constant product development without advance notice.
* The list of fitting servomotor, please refer to page 61.

NO	Inspection items		NCT-125	NCT-170 NCT-200	NCT-250 NCT-B-320	NCT-B-400 NCT-B-500	NCT-B-630 NCT-B-800	NCT-B-1000 NCT-B-1200
1	Concentricity of center hole		0.01	0.01	0.01	0.01	0.01	0.01
2	Perpendicularity of table with guide block	Per total table length	0.02	0.02	0.02	0.02	0.03	0.03
3	Height difference of both center lines of Rotary table and tailstock	Per 300 mm length	0.02	0.02	0.02	0.02	0.02	0.02
4	Perpendicularity of table top to frame bottom	Per total table length	0.02	0.02	0.02	0.02	0.03	0.03
5	Table top flatness	Per total table length	0.015	0.015	0.015	0.015	0.03	0.03
6	Parallelism of table top to frame bottom		0.01	0.01	0.01	0.015	0.02	0.02
7	Parallelism between table surface and frame bottom	Per total table length	0.02	0.02	0.02	0.02	0.03	0.03

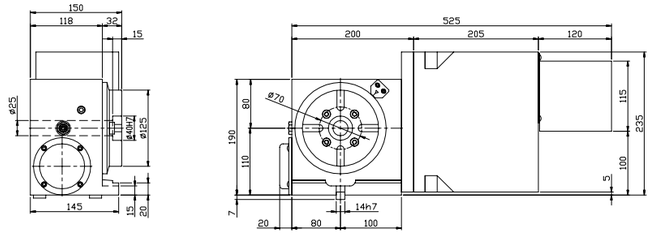
◎ **Standard accessories**

Block nuts	Hangers
◎	◎

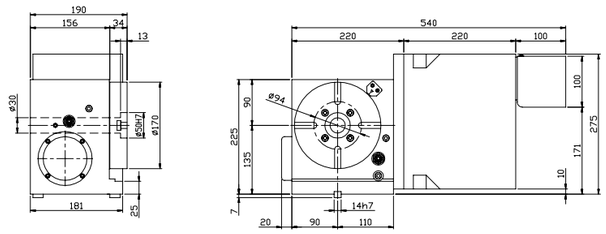
✻ **Optional accessories**

DNS controller	Tailstock		3-jaw chuck with sub plate	Encoder	PHC
	Taper	Support			
*(p.56)	*(p.52)	*(p.54)	*(p.60)	*(p.61)	*(p.60)

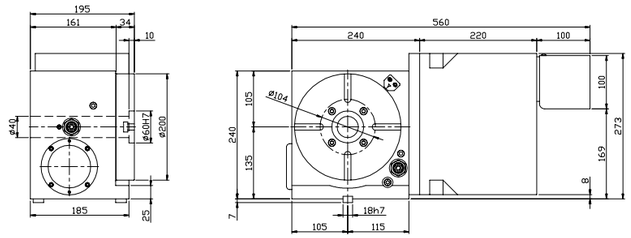
NCT-125R



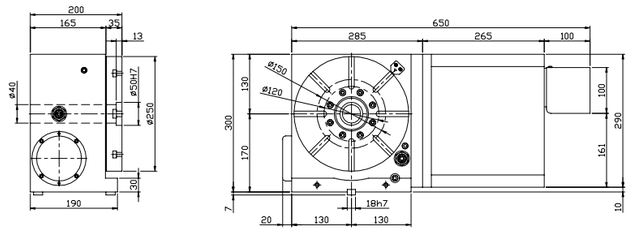
NCT-170R



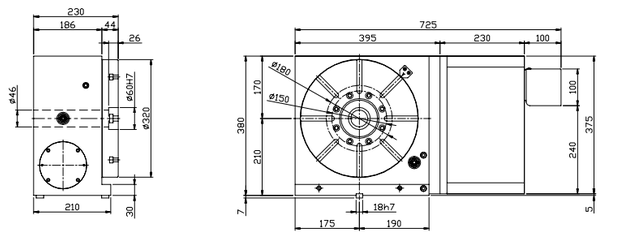
NCT-200R



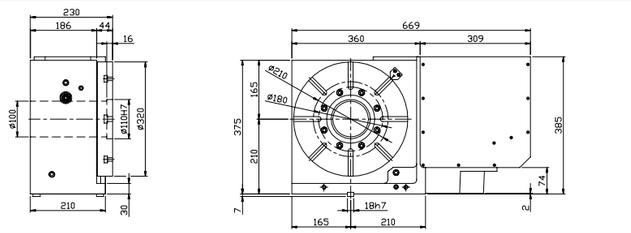
NCT-250R



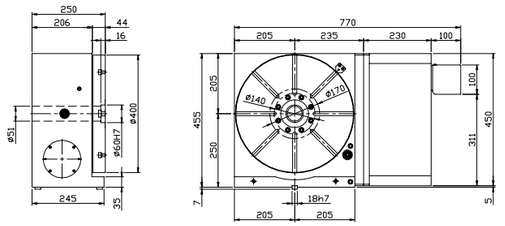
NCT-320R



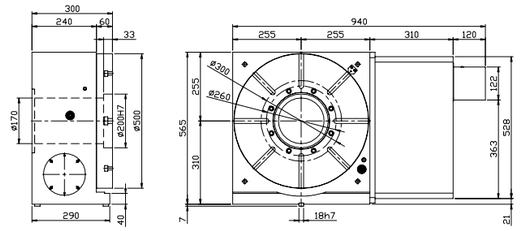
NCT-B-320RV



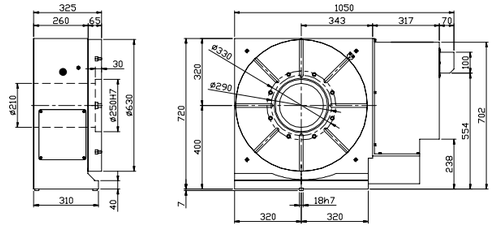
NCT-400R



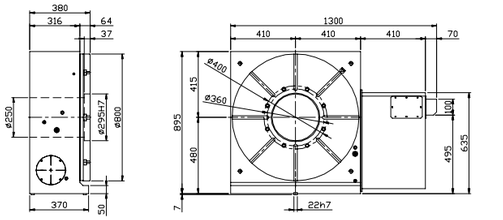
NCT-B-500R



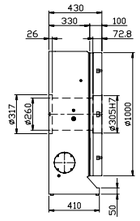
NCT-B-630RV

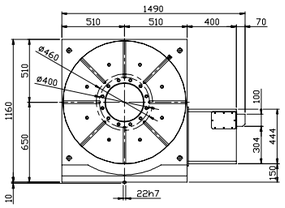


NCT-B-800R

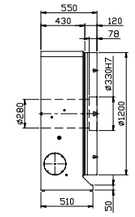


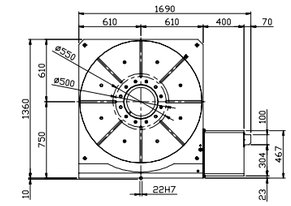
NCT-B-1000R





NCT-B-1200R





NCT-RB

CNC Rotary Table with rear mounted motor

NCT-RB Tables have a rear mounted drive motor, especially suited for use on compact machines and where the workspace is limited. High rigidity and excellent thrust force capabilities due to its optimal structure design.

Model		NCT-125RB	NCT-170RB	NCT-200RB	NCT-250RB	NCT-320RB	NCT-400RB
Table diameter (mm)		Ø125	Ø170	Ø200	Ø250	Ø320	Ø400
Diameter of "Pilot" bore (mm)		$Ø40^{H7}$	$Ø50^{H7}$	$Ø60^{H7}$	$Ø50^{H7}$	$Ø60^{H7}$	$Ø60^{H7}$
Diameter of through hole (mm)		Ø25	Ø30	Ø40	Ø40	Ø46	Ø51
Center height with table top vertical (mm)		110	135	135	170	210	250
Width of T slots (mm)		12^{H7}	12^{H7}	12^{H7}	12^{H7}	14^{H7}	14^{H7}
Width of alignment key in mounting base (mm)		14^{h7}	14^{h7}	18^{h7}	18^{h7}	18^{h7}	18^{h7}
Clamp operation pressure (Hydraulic) (bar)		35	35	35	35	35	35
Ambient temperature (°C)		18~40					
Minimum input increment (degree)		0.001	0.001	0.001	0.001	0.001	0.001
Gear ratio, Motor to Table Top		1/90	1/90	1/90	1/120	1/120	1/180
Table speed	(motor 3000 r.p.m)	33.3	33.3	33.3	25	25	16.6
	(motor 4000 r.p.m)	44.4	44.4	44.4	33.3	33.3	22.2
Servo motor (Optional)	FANUC	α2i	α4i	α4i	α8i	α12i	α12i
	MITSUBISHI	HG-105T	HG-54T	HG-54T	HG-104S	HG-204S	HG-204S
	SIEMENS	1FK7042	1FK7060	1FK7060	1FK7063	1FK7083	1FK7083
Indexing accuracy (sec of arc)		60	20	20	15	15	15
Repeatability (sec of arc)		4	4	4	4	4	4
Rotation torque (kgf-m) (N-m)		12 118	16 157	23 225	48 470	78 764	170 1666
Permissible load (With table clamped)	F (kgf) (N)	600 5880	800 7840	1000 9800	1400 13720	170 16660	2000 19600
	FxL (kgf-m) (N-m)	15 147	17 167	24 235	50 490	85 833	180 1764
	FxL (kgf-m) (N-m)	20 196	40 392	65 637	85 833	110 1078	180 1764
Permissible piece part and fixture weight	90° (kg)	50	70	85	100	150	200
Net Weight (kg)		60	85	100	140	250	350

* We reserve the right to make changes arising from constant product development without advance notice.
* The list of fitting servomotor, please refer to page 61.

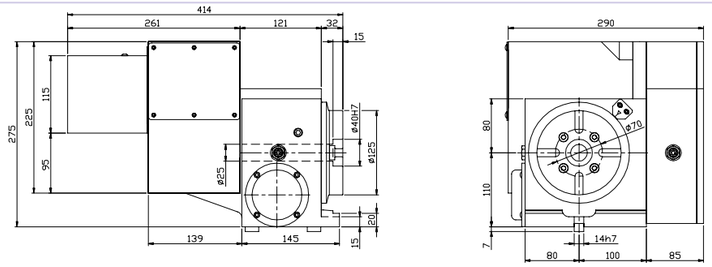
◎ Standard accessories

Block nuts	Hangers
◎	◎

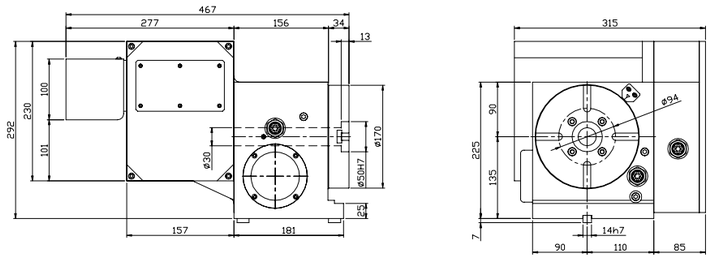
✻ Optional accessories

DNS controller	Tailstock		3-jaw chuck with sub plate	Encoder	PHC
	Taper	Support			
*(p.56)	*(p.52)	*(p.54)	*(p.60)	*(p.61)	*(p.60)

NCT-125RB



NCT-170RB



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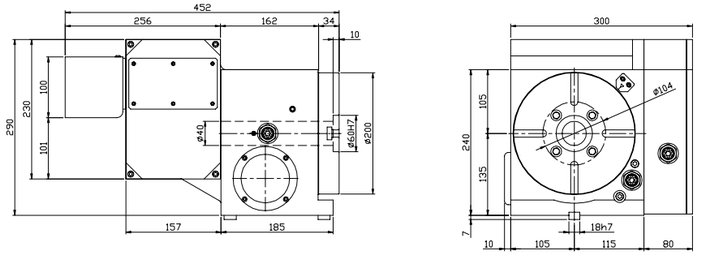

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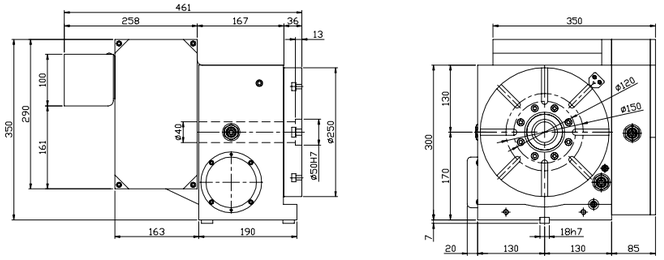
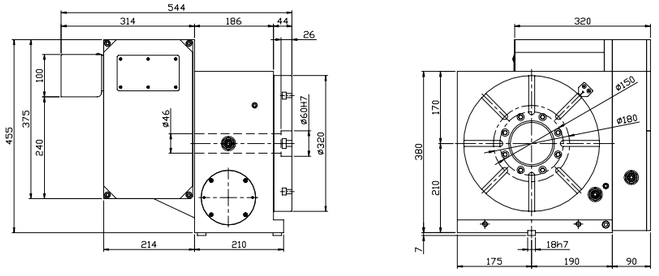
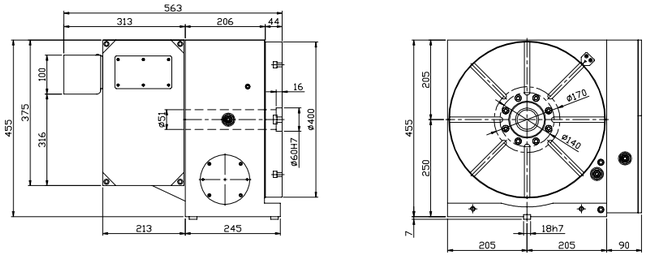


NCT-320RB



NCT-400RB



NCT-TN

CNC Multi Spindle Rotary Table

NCT-TN allow multiple piece parts and multi-face machining for greater productivity. The one-piece housing and a single worm shaft ensures optimum rigidity, accuracy and agility.

Model			NCT-125R -T2/T3/T4	NCT-170R -T2/T3	NCT-200R-T2	NCT-250R-T2
Table diameter		(mm)	Ø125	Ø170	Ø200	Ø250
Diameter of "Pilot" bore		(mm)	$Ø40^{H7}$	$Ø50^{H7}$	$Ø60^{H7}$	$Ø50^{H7}$
Diameter of through hole		(mm)	Ø25	Ø30	Ø40	Ø40
Distance between table centers		(mm)	150	200	250	300
Overall height with table top horizontal		(mm)	160	190	195	200
Center height with table top vertical		(mm)	110	135	135	170
Width of T slots		(mm)	12^{H7}	12^{H7}	12^{H7}	12^{H7}
Width of alignment key in mounting base		(mm)	18^{h7}	14^{h7}	18^{h7}	18^{h7}
Clamp operation pressure (Hydraulic)		(bar)	35	35	35	35
Ambient temperature		(°C)	18~40			
Minimum input increment		(degree)	0.001	0.001	0.001	0.001
Gear ratio, Motor to Table Top			1/90	1/90	1/90	1/120
Table speed	(motor 3000 r.p.m)		33.3	33.3	33.3	25
	(motor 4000 r.p.m)		44.4	44.4	44.4	33.3
Servo motor (Optional)	FANUC		α4i/α8i	α8i	α8i	α8i
	MITSUBISHI		HG-54T/HG-104S	HG-154T	HG-154T	HG-154S
	SIEMENS		1FK7060/1FK7063	1FK7063	1FK7063	1FK7063
Indexing accuracy		(sec of arc)	60	40	40	30
Repeatability		(sec of arc)	4	4	4	4
Rotation torque		(kgf-m) (N-m)	12 118	16 157	23 225	48 470
Permissible load (With table clamped)	F	(kgf) (N)	600 5880	800 7840	1000 9800	1400 13720
	FxL	(kgf-m) (N-m)	15 147	17 167	24 235	50 490
	FxL	(kgf-m) (N-m)	20 196	40 392	65 637	85 833
Permissible piece part and fixture weight	0°	(kg)	100	150	200	250
	90°	(kg)	50	70	85	100
Net Weight		(kg)	70 / 90 / 110	115 / 135	140	195
Allowable work inertia	$J=\frac{W \cdot D^2}{8}$	($kg-m^2$)	0.20	0.54	1.00	1.95

* We reserve the right to make changes arising from constant product development without advance notice.
* The list of fitting servomotor, please refer to page 61.

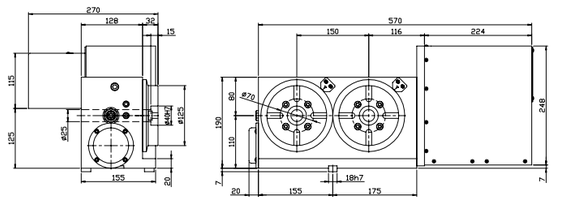
◎ Standard accessories

Block nuts	Hangers
◎	◎

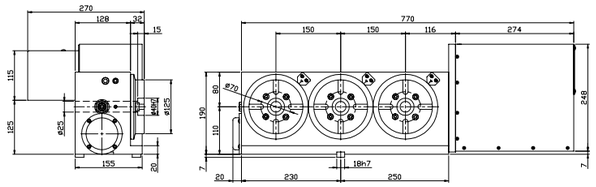
✻ Optional accessories

DNS controller	Tailstock		3-jaw chuck with sub plate	Encoder	PHC
	Taper	Support			
*(p.56)	*(p.52)	*(p.54)	*(p.60)	*(p.61)	*(p.60)

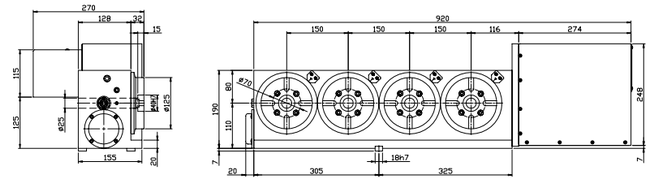
NCT-125R-T2



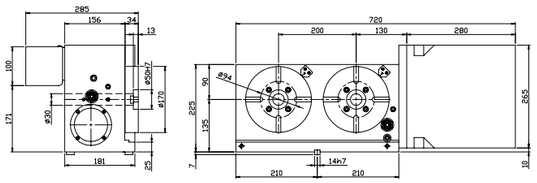
NCT-125R-T3



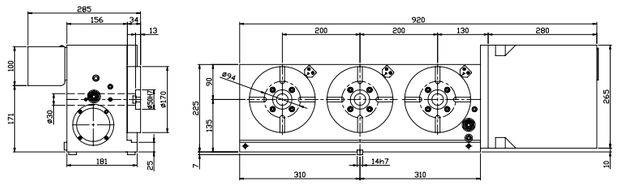
NCT-125R-T4



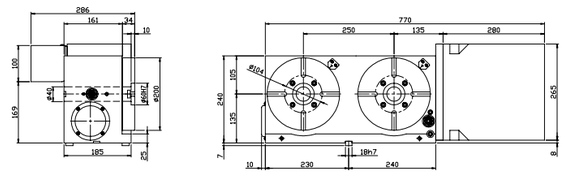
NCT-170R-T2



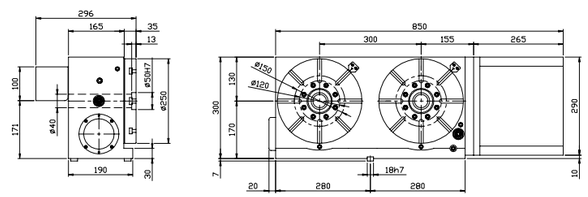
NCT-170R-T3



NCT-200R-T2



NCT-250R-T2



NCT-RA-D

High Speed NC Rotary Table

Max. spindle speed increased to 111rpm, reducing Takt time and increasing productivity

Model			NCT-170RA-D	NCT-200RA-D	NCT-250RA-D
Table diameter		(mm)	Ø170	Ø200	Ø250
Diameter of "Pilot" bore		(mm)	Ø50^{H7}	Ø50^{H7}	Ø60^{H7}
Diameter of through hole		(mm)	Ø30	Ø30	Ø30
Overall height with table top horizontal		(mm)	171	171	200
Center height with table top vertical		(mm)	135	135	170
Width of T slots		(mm)	12^{H7}	12^{H7}	12^{H7}
Width of alignment key in mounting base		(mm)	14^{h7}	14^{h7}	18^{h7}
Clamp operation pressure (Pneumatic)		(bar)	5~7	5~7	5~7
Ambient temperature		(°C)	18~40		
Minimum input increment		(degree)	0.001	0.001	0.001
Gear ratio, Motor to Table Top			1/45	1/45	1/36
Table speed	(motor 4000 rpm)		88.9	88.9	111.1
Servo motor (Optional)	FANUC		α4i	α4i	α8i
	MITSUBISHI		HG-54T	HG-54T	HG-104S
	SIEMENS		1FK7060	1FK7060	1FK7063
Indexing accuracy		(sec of arc)	40	40	30
Repeatability		(sec of arc)	4	4	4
Rotation torque		(kgf-m) (N-m)	16 157	16 157	57 559
Permissible load (With table clamped)	F	(kgf) (N)	800 7840	800 7840	1400 13720
	FxL	(kgf-m) (N-m)	17 167	17 167	36 353
	FxL	(kgf-m) (N-m)	40 392	40 392	85 833
Permissible piece part and fixture weight	0°	(kg)	150	150	250
	90°	(kg)	70	70	100
Net Weight	Net	(kg)	50	65	110

* We reserve the right to make changes arising from constant product development without advance notice.
* The list of fitting servomotor, please refer to page 61.

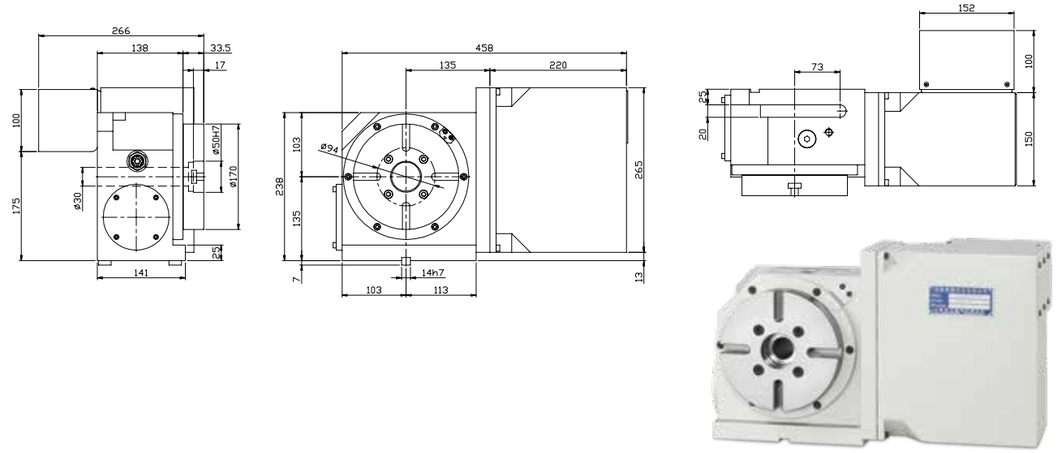
◎ Standard accessories

Block nuts	Hangers
◎	◎

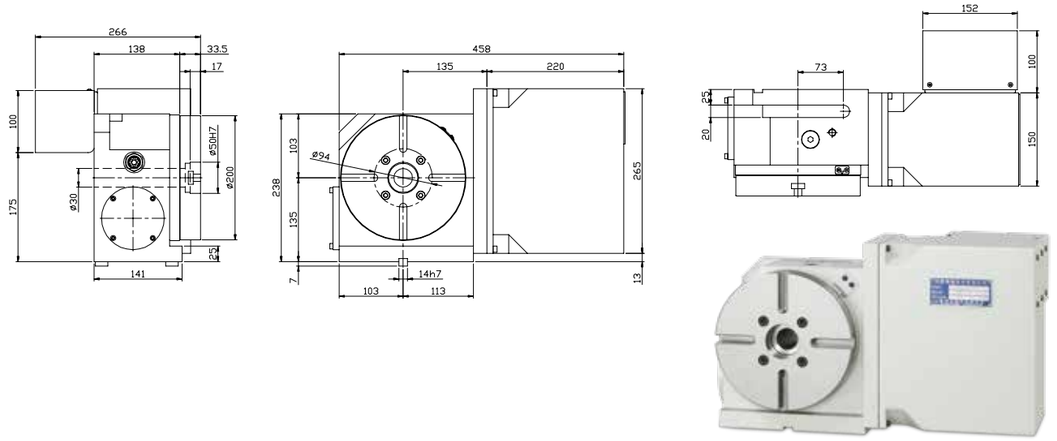
✻ Optional accessories

DNS controller	Tailstock		3-jaw chuck with sub plate	Encoder	PHC
	Taper	Support			
*(p.56)	*(p.52)	*(p.54)	*(p.60)	*(p.61)	*(p.60)

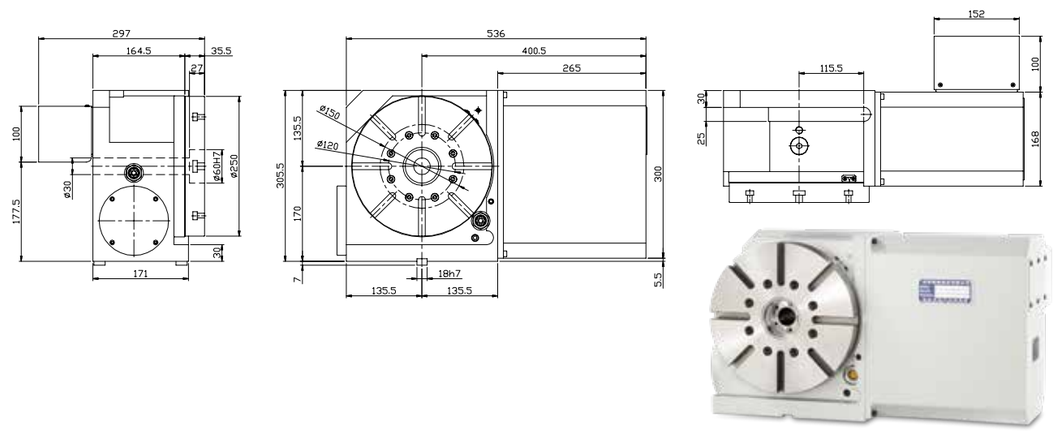
NCT-170RA-D



NCT-200RA-D

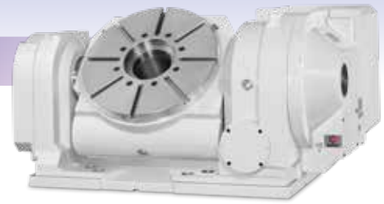


NCT-250RA-D



TRT

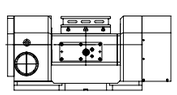
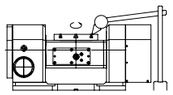
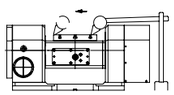
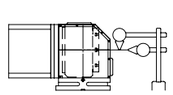
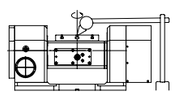
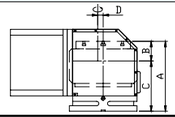
CNC Tilting Rotary Table



TRT, NC controlled 2 axis tables are suitable for larger work capacities when 5 axis machining. One piece housing structure with powerful hydraulic clamping system offers a greater clamping torque and high loading capacities. Designed for easy installation and alignment.

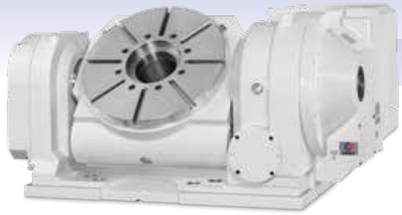
Model			TRT-100		TRT-170		TRT-200	
Table diameter		(mm)	Ø90		Ø170		Ø200	
Diameter of "Pilot" bore		(mm)	Ø55^{H7}		Ø75^{H7}		Ø75^{H7}	
Diameter of through hole		(mm)	Ø35		Ø50		Ø50	
Table height at 0°		(mm)	190		303		303	
Table height at 90° tilted		(mm)	233		330		330	
Table Center height at 90° tilted		(mm)	135		215		215	
Width of T slots		(mm)	x		12^{H7}		12^{H7}	
Width of alignment key in mounting base		(mm)	14^{h7}		18^{h7}		18^{h7}	
Clamp operation pressure (Hydraulic)		(bar)	5 (Pneumatic)		35		35	
Ambient temperature		(°C)	18~40					
Axis			Rotary	Tilting	Rotary	Tilting	Rotary	Tilting
Minimum input increment		(degree)	0.001	0.001	0.001	0.001	0.001	0.001
Gear ratio, Motor to Table Top			1/60	1/120	1/72	1/120	1/72	1/120
Table speed	(motor 3000 r.p.m)		50	25	41.6	25	41.6	25
	(motor 5000 r.p.m)		83.3	41.6	69.4	41.6	69.4	41.6
Servo motor (Optional)	FANUC		α2i	α2i	α2i	α8i	α2i	α8i
	MITSUBISHI		HG-105T	HG-105T	HG-105T	HG-154T	HG-105T	HG-154T
	SIEMENS		1FK7042	1FK7042	1FK7042	1FK7063	1FK7042	1FK7063
Indexing accuracy		(sec of arc)	60	60	20	60	20	60
Repeatability		(sec of arc)	4	8	4	8	4	8
Tilting range		(Horizontal = 0°)	-20°~+110°		-40°~+110°		-40°~+110°	
Rotation torque		(kgf-m)	8.5	8.5	16	47	16	47
		(N-m)	83	83	157	460	157	460
Permissible load (With table clamped)	F	(kgf) (N)	350 3430		800 7840		800 7840	
	FxL	(kgf-m) (N-m)	15 147		40 392		40 392	
	FxL	(kgf-m) (N-m)	15 147		50 490		50 490	
Permissible piece part and fixture weight	0°	(kg)	40		60		60	
	0~90°	(kg)	25		40		40	
Permissible work moment	WxL	(kgf-m) (N-m)	3 29.4		8 78.4		8 78.4	
Net Weight		(kg)	105		255		260	
Allowable work inertia	$J=\frac{W\cdot D^2}{8}$	(kg-m^2)	0.05		0.22		0.3	

Guaranteed inspection accuracy

1	2	3	4	5	6
					

TRT

CNC Tilting Rotary Table



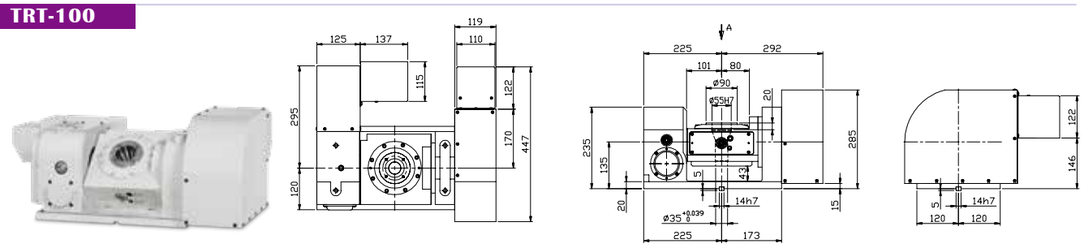
TRT, NC controlled 2 axis tables are suitable for larger work capacities when 5 axis machining. One piece housing structure with powerful hydraulic clamping system offers a greater clamping torque and high loading capacities. Designed for easy installation and alignment.

Model			TRT-250		TRT-320		TRT-450	
Table diameter		(mm)	Ø250		Ø320		Ø450	
Diameter of "Pilot" bore		(mm)	Ø110^{H7}		Ø60^{H7}		Ø170^{H7}	
Diameter of through hole		(mm)	Ø80		Ø46		Ø130	
Table height at 0°		(mm)	320		355		435	
Table height at 90° tilted		(mm)	385		420		560	
Table Center height at 90° tilted		(mm)	230		255		335	
Width of T slots		(mm)	12^{H7}		14^{H7}		14^{H7}	
Width of alignment key in mounting base		(mm)	18^{h7}		18^{h7}		18^{h7}	
Clamp operation pressure (Hydraulic)		(bar)	35		35		35	
Ambient temperature		(°C)	18~40					
Axis			Rotary	Tilting	Rotary	Tilting	Rotary	Tilting
Minimum input increment		(degree)	0.001	0.001	0.001	0.001	0.001	0.001
Gear ratio, Motor to Table Top			1/90	1/180	1/360	1/360	1/180	1/360
Table speed	(motor 3000 r.p.m)		33.3	16.6	8.3	8.3	16.6	8.3
	(motor 5000 r.p.m)		55.5	27.7	13.8	13.8	27.7	13.8
Servo motor (Optional)	FANUC		α8i	α8i	α8i	α8i	α12i	α12i
	MITSUBISHI		HG-154S	HG-154S	HG-154S	HG-154S	HG-204S	HG-204S
	SIEMENS		1FK7063	1FK7063	1FK7063	1FK7063	1FK7083	1FK7083
Indexing accuracy		(sec of arc)	15	60	15	60	15	60
Repeatability		(sec of arc)	4	8	4	8	4	8
Tilting range		(Horizontal = 0°)	-40°~+110°		-110°~+110°		-110°~+110°	
Rotation torque		(kgf-m)	47	47	78	78	170	170
		(N-m)	460	460	764	764	1666	1666
Permissible load (With table clamped)	F	(kgf) (N)	1200 11760		1800 17640		2500 24500	
	FxL	(kgf-m) (N-m)	75 735		85 833		180 1764	
	FxL	(kgf-m) (N-m)	85 833		100 980		180 1764	
Permissible piece part and fixture weight	0°	(kg)	120		150		250	
	0~90°	(kg)	60		100		150	
Permissible work moment	WxL	(kgf-m) (N-m)	16 156.8		25 245		30 294	
Net Weight		(kg)	350		500		900	
Allowable work inertia	$J=\frac{W\cdot D^2}{8}$	(kg-m^2)	0.78		1.92		6.33	

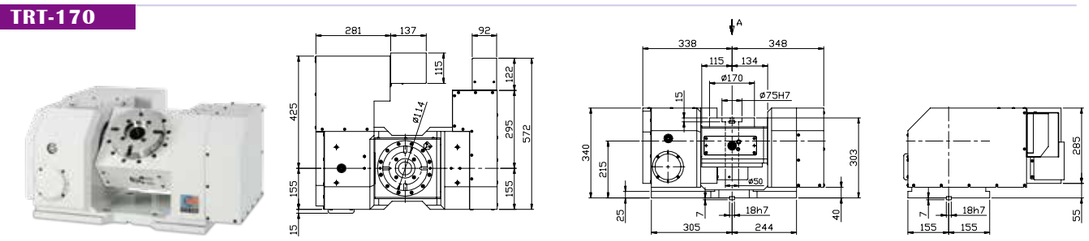
NO	Inspection items		TRT-100	TRT-170	TRT-200	TRT-250	TRT-320	TRT-450
1	Table flatness	Per overall length	0.01	0.015	0.015	0.015	0.015	0.02
2	Table run out		0.01	0.01	0.01	0.01	0.01	0.015
3	Parallelism of table top to frame bottom	Per overall length	0.02	0.02	0.02	0.02	0.02	0.02
4	Parallelism of table top to center line	Per overall length	0.02	0.02	0.02	0.02	0.02	0.02
5	Concentricity of center hole		0.01	0.01	0.01	0.01	0.01	0.01
6	Parallelism of table top to frame bottom guide blocks	Per overall length	0.02	0.02	0.02	0.02	0.02	0.02

Layout Dimension of TRT series

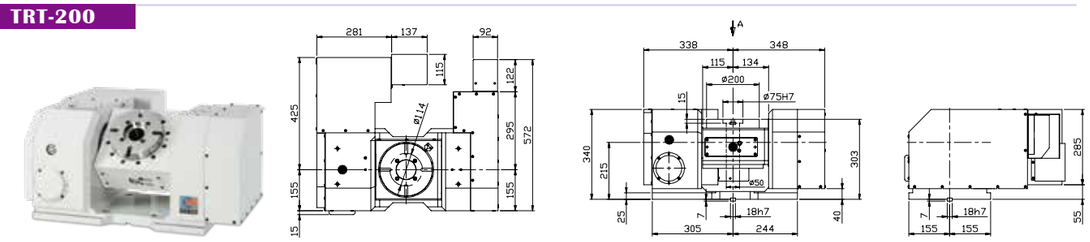
TRT-100



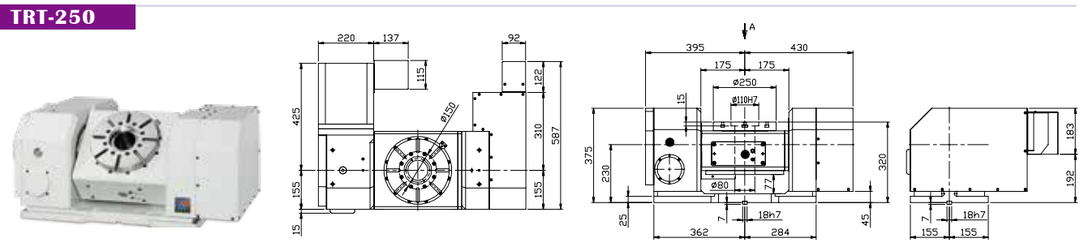
TRT-170



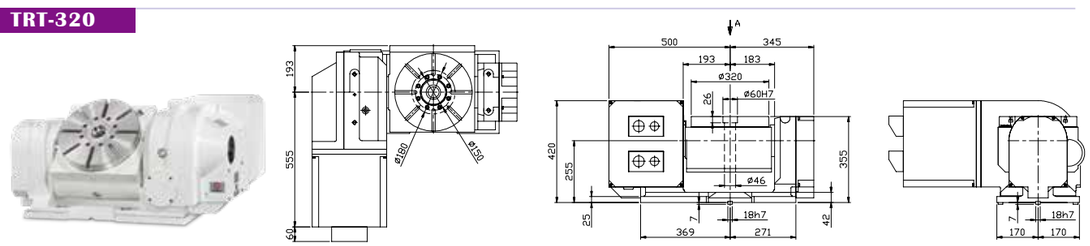
TRT-200



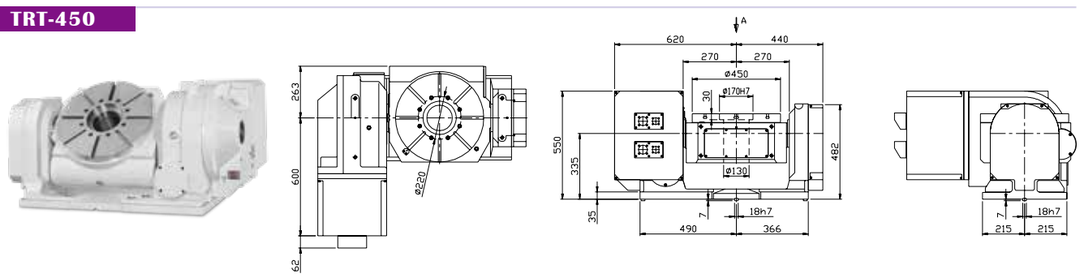
TRT-250



TRT-320



TRT-450



TRT-TN

CNC Multi Spindle Tilting Rotary Table

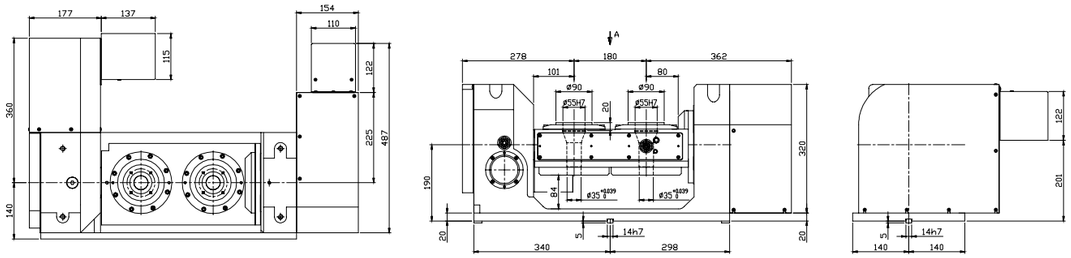
TRT-TN offers multi station 5 axes machining operation. This enhances the productivity for mass production.
One piece frame structure offers high stability.

Model			TRT-100-T2		TRT-170-T2		TRT-250-T2	
Table diameter		(mm)	Ø90		Ø170		Ø250	
Diameter of "Pilot" bore		(mm)	$Ø55^{H7}$		$Ø75^{H7}$		$Ø50^{H7}$	
Diameter of through hole		(mm)	Ø35		Ø50		Ø40	
Table height at 0°		(mm)	245		303		330	
Table height at 90° tilted		(mm)	288		330		370	
Table Center height at 90° tilted		(mm)	190		215		240	
Width of T slots		(mm)	x		12^{H7}		12^{H7}	
Width of alignment key in mounting base		(mm)	14^{h7}		18^{h7}		18^{h7}	
Clamp operation pressure (Hydraulic)		(bar)	5 (Pneumatic)		35		35	
Ambient temperature		(°C)	18~40					
Axis			Rotary	Tilting	Rotary	Tilting	Rotary	Tilting
Minimum input increment		(degree)	0.001	0.001	0.001	0.001	0.001	0.001
Gear ratio, Motor to Table Top			1/60	1/120	1/72	1/120	1/360	1/360
Table speed	(motor 3000 r.p.m)		50	25	41.6	25	8.3	8.3
	(motor 5000 r.p.m)		83.3	41.6	69.4	41.6	13.8	13.8
Servo motor (Optional)	FANUC		α4i	α4i	α8i	α8i	α8i	α8i
	MITSUBISHI		HG-54T	HG-54T	HG-154T	HG-154T	HG-154T	HG-154T
	SIEMENS		1FK7060	1FK7060	1FK7063	1FK7063	1FK7063	1FK7063
Indexing accuracy		(sec of arc)	60	60	40	60	30	60
Repeatability		(sec of arc)	4	8	4	8	4	8
Tilting range		(Horizontal = 0°)	-20°~+110°		-40°~+110°		-110°~+110°	
Rotation torque		(kgf-m)	8.5	8.5	16	47	47	47
		(N-m)	83	83	157	460	460	460
Permissible load (With table clamped)	F	(kgf) (N)	175 (Single table) 1715		400 (Single table) 3920		500 (Single table) 4900	
	FxL	(kgf-m) (N-m)	15 147		40 392		65 637	
	FxL	(kgf-m) (N-m)	15 147		50 490		55 540	
Permissible piece part and fixture weight	0°	(kg)	20 (Single table)		30 (Single table)		50 (Single table)	
	0~90°	(kg)	13 (Single table)		20 (Single table)		25 (Single table)	
Permissible work moment	WxL	(kgf-m) (N-m)	3 29.4		8 78.4		16 156.8	
Net Weight		(kg)	150		325		450	
Allowable work inertia	$J=\frac{W \cdot D^2}{8}$	($kg-m^2$)	0.05		0.22		0.78	

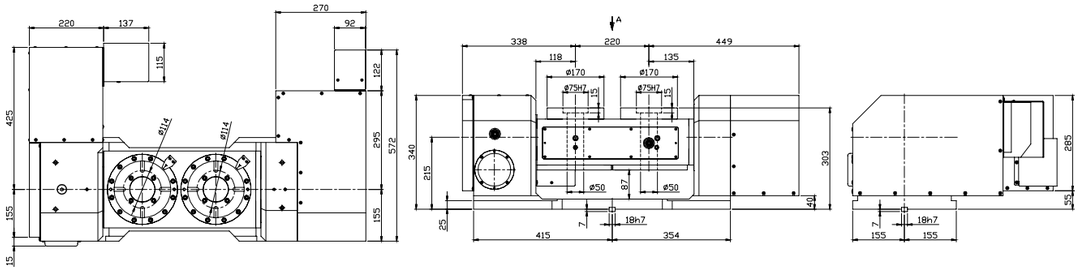
* We reserve the right to make changes arising from constant product development without advance notice.
* The list of fitting servomotor, please refer to page 61.

Layout Dimension of TRT-TN series

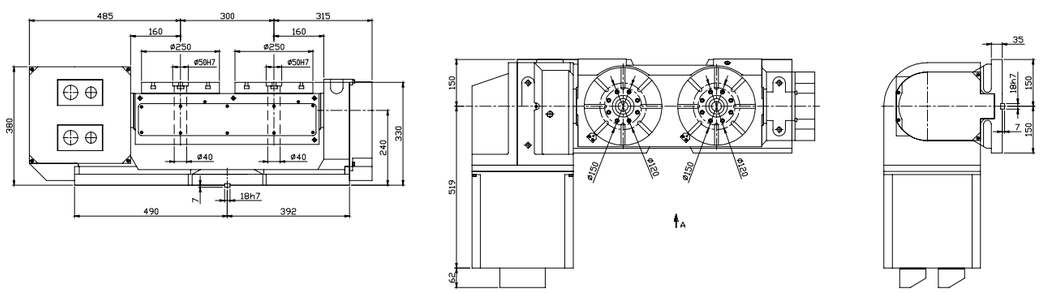
TRT-100-T2

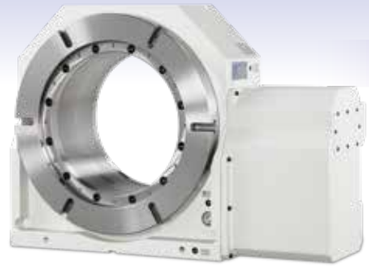


TRT-170-T2



TRT-250-T2





NCT-L

Mega Central Hole CNC Rotary Table

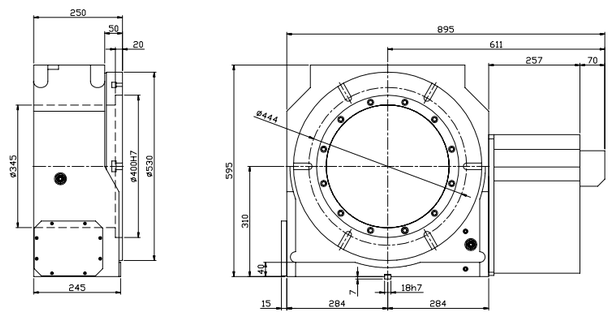
- ✻Suitable for large workpiece machining
  Ø345mm very large through hole and table diameter Ø530mm is particularly good for pipeline machining.
- ✻Excellent for heavy loading and high accuracy
  Rigid structure design and hydraulic clamping system.
- ✻Compact design

Model			NCT-L-530R
Table diameter		(mm)	Ø530
Diameter of "Pilot" bore		(mm)	$Ø400^{H7}$
Diameter of through hole		(mm)	Ø345
Table height at 0°		(mm)	250
Table Center height at 90° tilted		(mm)	310
Width of T slots		(mm)	18^{H7}
Width of alignment key in mounting base		(mm)	18^{h7}
Clamp operation pressure (Hydraulic)		(kg/cm^2)	35
Ambient temperature		(°C)	18~40
Minimum input increment		(degree)	0.001
Gear ratio, Motor to Table Top			1/180
Table speed	(motor 3000 r.p.m)		16.7
Servo motor (Optional)	FANUC		α12i
Indexing accuracy		(sec of arc)	15
Repeatability		(sec of arc)	4
Rotation torque		(kgf-m) (N-m)	428 4200
Permissible load (With table clamped)	F	(kgf) (N)	2300 22540
	FxL	(kgf-m) (N-m)	459 4500
	FxL	(kgf-m) (N-m)	250 2450
Permissible piece part and fixture weight	0°	(kg)	1000
	90°	(kg)	500
Net Weight		(kg)	450
Allowable work inertia	$J=\frac{W \cdot D^2}{8}$	($kg-m^2$)	35

✻ We reserve the right to make changes arising from constant product development without advance notice.

✻ The list of fitting servomotor, please refer to page 61.

NCT-L-530R



NCT-T

CNC Rotary Table / Manual Tilting Axis

NCT-T NC Rotary Table mounted onto a rugged manually adjustable base. An integral rotary table structure with a powerful clamping system fitted to tilting base with a working angle range of 0° to 100° for greater working capacity.

Model		NCT-250T		NCT-320T		NCT-400T	
Table diameter (mm)		Ø250		Ø320		Ø400	
Diameter of "Pilot" bore (mm)		Ø50^{H7}		Ø60^{H7}		Ø60^{H7}	
Diameter of through hole (mm)		Ø40		Ø46		Ø51	
Table height at 0° (mm)		295		335		364	
Table height at 90° tilted (mm)		450		604		671	
Table Center height at 90° tilted (mm)		215		265		290	
Width of T slots (mm)		12^{H7}		14^{H7}		14^{H7}	
Width of alignment key in mounting base (mm)		18^{h7}		18^{h7}		18^{h7}	
Clamp operation pressure (Hydraulic) (bar)		35		35		35	
Ambient temperature (°C)		18~40					
Axis		Rotary	Tilting	Rotary	Tilting	Rotary	Tilting
Minimum input increment (degree)		0.001	0.08(5')	0.001	0.1(6')	0.001	0.1(6')
Gear ratio, Motor to Table Top		1/120	1/40	1/120	1/90	1/180	1/90
Table speed	(motor 3000 r.p.m)	25	X	25	X	16.6	X
	(motor 4000 r.p.m)	33.3	X	33.3	X	22.2	X
Servo motor (Optional)	FANUC	α8i	Manual	α12i	Manual	α12i	Manual
	MITSUBISHI	HG-104S	Manual	HG-204S	Manual	HG-204S	Manual
	SIEMENS	1FK7063	Manual	1FK7083	Manual	1FK7083	Manual
Indexing accuracy (sec of arc)		15		15		15	
Repeatability (sec of arc)		4		4		4	
Tilting range (Horizontal = 0°)		0°~+100°		0°~+100°		0°~+100°	
Rotation torque		47 460		78 764		170 1666	
Permissible load (With table clamped)	F	1400 13720		1700 16660		2000 19600	
	FxL	50 490		85 833		180 1764	
	FxL	85 833		110 1078		180 1764	
Permissible piece part and fixture weight	0°	250		350		500	
	90°	100		150		200	
Net Weight (kg)		250		360		450	
Allowable work inertia	$J=\frac{W\cdot D^2}{8}$	1.95		4.48		10.00	

* We reserve the right to make changes arising from constant product development without advance notice.
* The list of fitting servomotor, please refer to page 61.

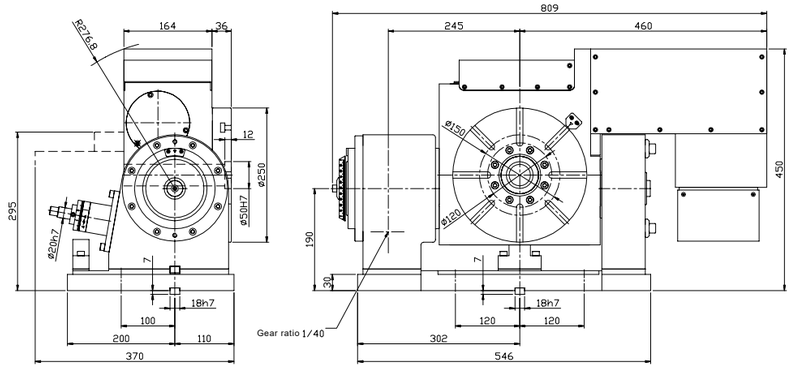
◎ Standard accessories

Block nuts	Hangers
◎	◎

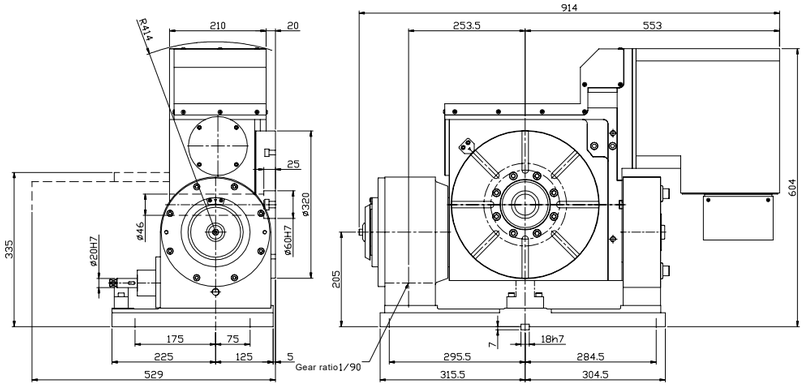
✻ Optional accessories

DNS controller	Tailstock		3-jaw chuck with sub plate	Encoder	PHC
	Taper	Support			
*(p.56)	*(p.52)	*(p.54)	*(p.60)	*(p.61)	*(p.60)

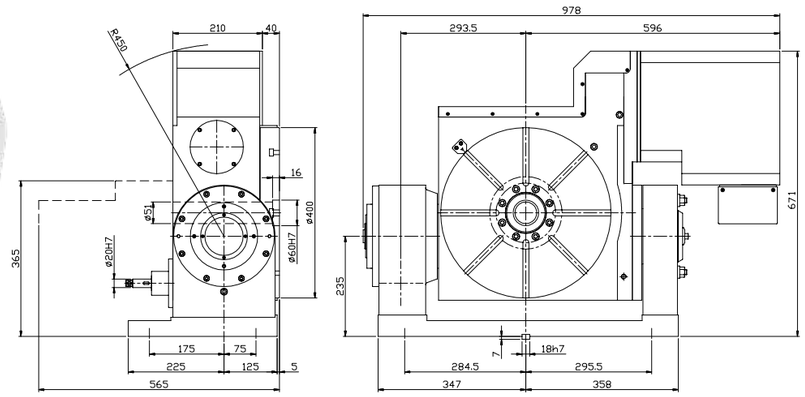
NCT-250T



NCT-320T



NCT-400T



Optional

A Heidenhain ROC-425 scale (option) can be fit for easy position degree reading.

HC Series
Indexing Table with a 3 piece Hirth Coupling Gear

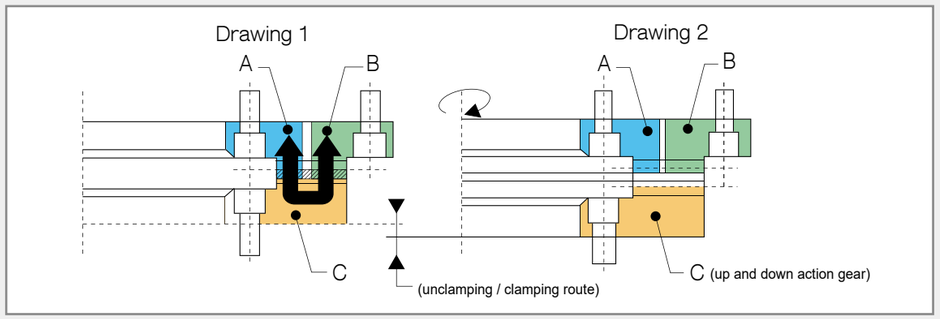
NON-LIFTING TABLE TOP WITH A HIGH PRECISION 3-PIECE HIRTH COUPLING GEAR EXTREMELY ACCURATE WITH POSITIVE MECHANICAL LOCKING FOR HEAVY MACHINING

- Wide range of styles and sizes
- Robust and wear-resistant design
- High indexing accuracy and repeatability values
- Resistance to high machining forces
- Simple installation with reliable operation
- Low maintenance design

Non-lifting, 3 piece coupling design has a reinforcing holding force and permits a table top that does not raise and lower during indexing. A solid sealing system prohibits swarf, chips or cutting fluids from entering into housing, this creates reliability and longevity. Hydraulic rack & pinion drive with built-in cushions to ensure smooth operation with optimum cycle times, the table clamp and unclamp functions are hydraulic and monitored for safety by reliable feedback switches.

The HC series of automatic indexing tables can be used with the table top in either the horizontal or vertical plane and are suitable for use on Machining Centers, Rotary transfer machines and most any other style of production machines and in manufacturing systems. Rotation is by a worm and wheel driven via a servo motor, hydraulic clamping through the 3 piece coupling generates a resistance to high machining forces, add for the ultimate in positioning accuracy and rigidity.

Function Principles of Non-Lifting Indexing Table



There are 3 gear rings to each Hirth Coupling
Gear ring A is attached to the rotating table top plate
Gear ring B is the "datum" attached to the table housing
Gear ring C raises and lowers inside the table housing to connect gear ring A and gear ring B together after each cycle.

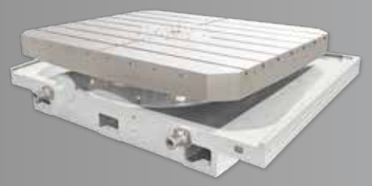
Please refer to drawing 2

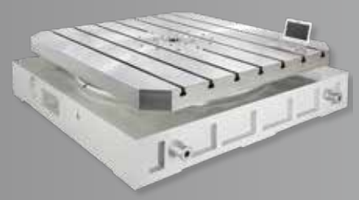
- Gear ring C is shown lowered to release the locked assembly
- Gear ring A is now free to rotate with the table top
- After the rotation is complete, Gear A is now in the new location
- Gear ring C then raises to create a re-locked assembly as illustrated in drawing 1

Note: The raising and lowering of the gear rings is similar to a lapping effect.
The accuracy of the gear teeth improves over time.

HC

HC-H





HC

CNC Vertical / Horizontal Indexing Table, Hirth Gear - Hydraulic clamping

The HC series of Indexing Tables are rotated via a dual lead worm gear system driven by a servo motor. Hydraulic locking via a 3 piece Hirth gear for superior positioning accuracy, powerful clamping and rigidity.
Most models available for rotation in multiples of either 1° or 5° increments of motion.

Model			HC-200R(L)	HC-250R(L)		HC-320R		HC-400RV		HC-500RV	
Table diameter		(mm)	Ø200	Ø250		Ø320		Ø400		Ø500	
Diameter of "Pilot" bore		(mm)	Ø35^{H7}	Ø55^{H7}		Ø100^{H7}		Ø120^{H7}		Ø120^{H7}	
Diameter of through hole		(mm)	Ø25	Ø30		Ø80		Ø80		Ø90	
Overall height with table top horizontal		(mm)	200	200		240		265		300	
Center height with table top vertical		(mm)	160	170		230		250		310	
Width of T slots		(mm)	12^{H7}	12^{H7}		14^{H7}		14^{H7}		18^{H7}	
Width of alignment key in mounting base		(mm)	18^{h7}	18^{h7}		18^{h7}		18^{h7}		18^{h7}	
Operating pressure - Hydraulic		(bar)	35	35		35		35		35	
Ambient temperature		(°C)	18~40								
Table division		(division)	72	72	360	72	360	72	360	72	360
Minimum input increment		(degree)	5	5	1	5	1	5	1	5	1
Gear ratio, Motor to Table Top			1/75	1/120		1/120		1/120		1/180	
Table speed	(motor 3000 r.p.m)		40	25		25		25		16.6	
	(motor 4000 r.p.m)		53.3	33.3		33.3		33.3		22.2	
Servo motor (Optional)	FANUC		α4i	α8i		α12i		α12i		α12i	
	MITSUBISHI		HG-54T	HG-104S		HG-204S		HG-204S		HG-204S	
	SIEMENS		1FK7060	1FK7063		1FK7083		1FK7083		1FK7083	
Indexing accuracy		(sec of arc)	8	8		8		8		8	
Repeatability		(sec of arc)	2	2		2		2		2	
Clamping torque		(kgf-m) (N-m)	1071 10495	1516 14856		2654 26009		3269 32041		3269 32041	
Permissible load (With table clamped)	F	(kgf) (N)	1000 9800	1500 14700		2000 19600		2500 24500		3000 29400	
	FxL	(kgf-m) (N-m)	250 2450	300 2940		400 3920		500 4900		600 5880	
	FxL	(kgf-m) (N-m)	250 2450	350 3430		450 4410		550 5390		650 6370	
Permissible piece part and fixture weight	0°	(kg)	250	300		350		500		600	
	90°	(kg)	70	125		175		250		300	
Net Weight		(kg)	76	110		200		300		450	
Allowable work inertia	$J=\frac{W\cdot D^2}{8}$	(kg-m^2)	1.25	2.34		4.48		10.00		18.75	

* We reserve the right to make changes arising from constant product development without advance notice.
* The list of fitting servomotor, please refer to page 61.

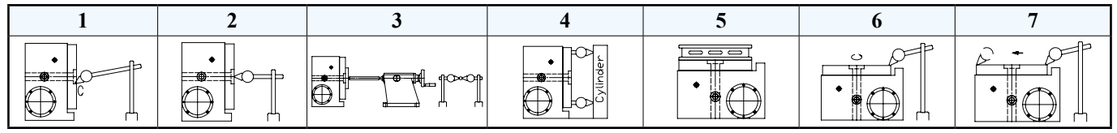
◎ Standard accessories

Block nuts	Hangers
◎	◎

✻ Optional accessories

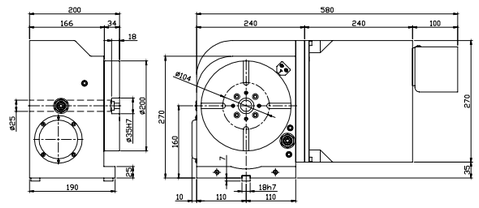
DNS controller	Tailstock		3-jaw chuck with sub plate	Hydraulic unit
	Taper	Support		
*(p.56)	*(p.52)	*(p.54)	*(p.60)	*(p.60)

Guaranteed inspection accuracy

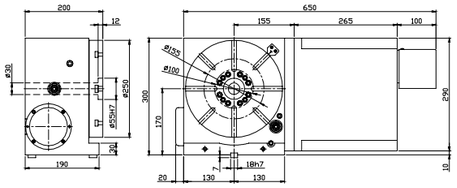


NO	Inspection items		HC-200	HC-250	HC-320	HC-400	HC-500
1	Concentricity of center hole		0.01	0.01	0.01	0.01	0.01
2	Perpendicularity of table with guide block	Per total table length	0.02	0.02	0.02	0.02	0.02
3	Height difference of both center lines of Rotary table and tailstock	Per 300 mm length	0.02	0.02	0.02	0.02	0.02
4	Perpendicularity of table top to frame bottom	Per total table length	0.02	0.02	0.02	0.02	0.02
5	Table top flatness	Per total table length	0.015	0.015	0.015	0.015	0.015
6	Parallelism of table top to frame bottom		0.01	0.01	0.01	0.01	0.015
7	Parallelism between table surface and frame bottom	Per total table length	0.02	0.02	0.02	0.02	0.02

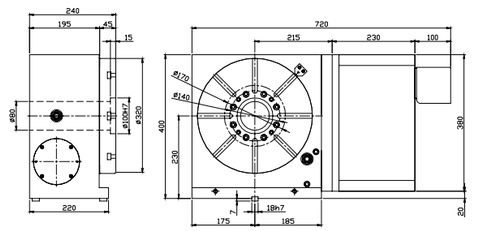
HC-200R



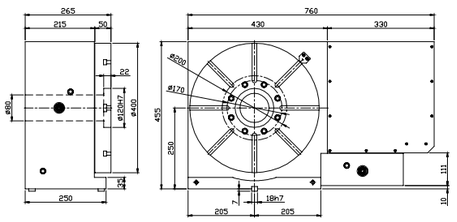
HC-250R



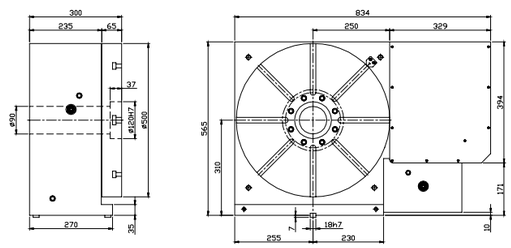
HC-320R



HC-400RV



HC-500RV



HC-H

CNC Horizontal Indexing Table with Hirth Gear - Hydraulic Clamping

HC-H series Indexing Tables are rotated by a dual lead worm gear driven via a servo motor. Equipped with a 3 piece Hirth coupling, these tables achieve a superior positioning accuracy and the hydraulic clamping system provides the ultimate rigidity.
High density housings resist flexing under load and can accommodate high machining forces.

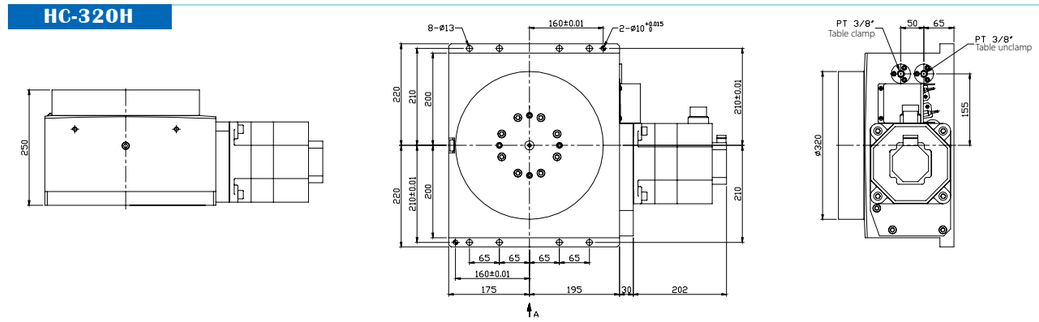
Model			HC-320H		HC-450H		HC-600H		HC-630H		HC-800H	
Table dimension (LxW)		(mm)	320 x 320		450 x 450		600 x 600		630 x 630		800 x 800	
Diameter of "Pilot" bore		(mm)	Ø320		Ø50^{H7}		Ø40^{H7}		Ø40^{H7}		Ø60^{H7}	
Overall height		(mm)	250		280		320		320		380	
Width of T slots		(mm)	–		18^{H7}		20^{H7}		20^{H7}		22^{H7}	
Width of alignment key in mounting base		(mm)	18^{h7}		18^{h7}		20^{h7}		20^{h7}		22^{h7}	
Operating pressure - Hydraulic		(bar)	35		35		35		35		35	
Ambient temperature		(°C)	18~40									
Table division		(division)	72	360	72	360	72	360	72	360	72	360
Minimum input increment		(degree)	5	1	5	1	5	1	5	1	5	1
Gear ratio, Motor to Table Top			1/120		1/120		1/180		1/180		1/180	
Rotation speed	(motor 3000 r.p.m)		25		25		16.6		16.6		16.6	
Servo motor (Optional)	FANUC		α12i		α12i		α12i		α12i		α22i	
	MITSUBISHI		HG-204S		HG-204S		HG-204S		HG-204S		HG-354S	
	SIEMENS		1FK7083		1FK7083		1FK7083		1FK7083		1FK7101	
Indexing accuracy		(sec of arc)	8		8		8		8		8	
Repeatability		(sec of arc)	2		2		2		2		2	
Clamping torque		(kgf-m) (N-m)	2654 26009		3269 32041		6066 59450		6066 59450		9077 88961	
Permissible load (With table clamped)	F	(kgf) (N)	2000 19600		2500 24500		3500 34300		3500 34300		5250 51450	
	FxL	(kgf-m) (N-m)	400 3920		500 4900		700 6860		700 6860		1050 10290	
	FxH	(kgf-m) (N-m)	450 4410		550 5390		770 7546		770 7546		1200 11760	
Permissible piece part and fixture weight	0°	(kg)	350		1200		2500		2500		4000	
Net Weight		(kg)	210		400		650		720		1000	
Allowable work inertia	$J=\frac{A^2+B^2}{12}xW$	(kg-m^2)	6		40.5		150		150		426.6	

* We reserve the right to make changes arising from constant product development without advance notice.
* The list of fitting servomotor, please refer to page 61.

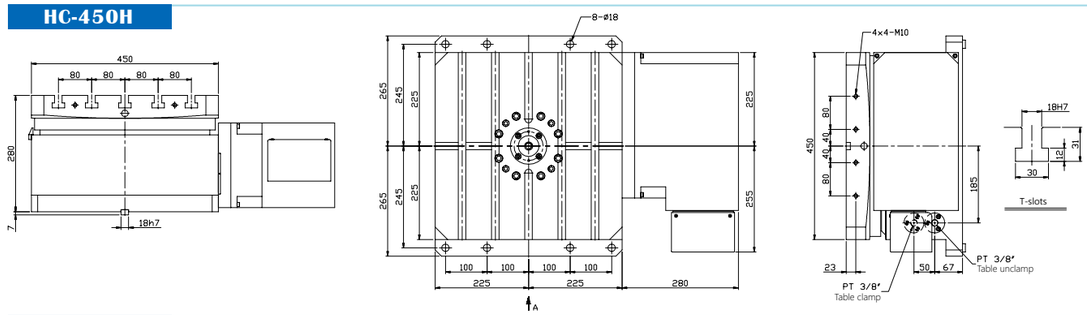
Guaranteed inspection accuracy

NO	Inspection Items		HC-450H	HC-600H	HC-800H
1	Concentricity of center hole		0.01	0.01	0.01
2	Table run out	mm	0.01	0.015	0.015
3	Table straightness	mm	0.015	0.02	0.02
4	Parallelism between plate and base	mm	0.015	0.02	0.02
5	Square of side reference plane	mm	0.015	0.02	0.02
6	T-Slot tolerance	mm	0.015	0.02	0.02

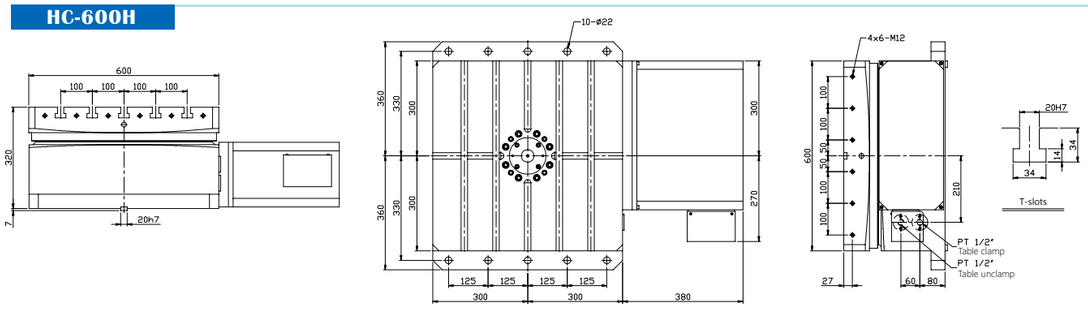
HC-320H



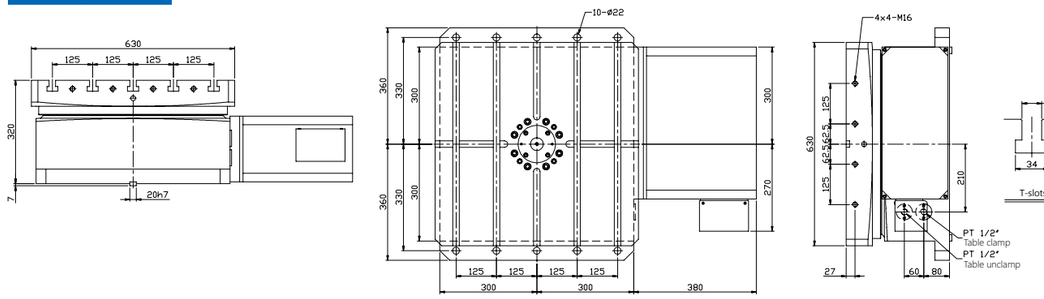
HC-450H



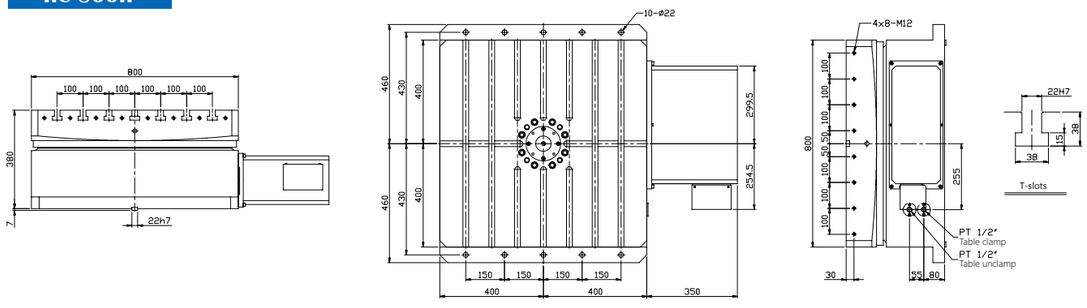
HC-600H



HC-630H



HC-800H



HC-H

Heavy Duty, CNC Horizontal Indexing Table with Hirth Gear - Hydraulic Clamping

HC-H is suitable for horizontal machining center and boring / milling machine. Equipped with three piece hirth coupling gear to achieve super positioning accuracy. Particularly suitable for 180 degree double end boring. Table sizes from 1000mm to 2500mm or manufactured according to customer's requirement, loading capacity up to 20,000kgs (on request).

Model			HC-1000H		HC-1400H		HC-1800H	
Working table dimension (LxW)		(mm)	1000 x 1000		1400 x 1400		1800 x 1800	
Diameter of "Pilot" bore		(mm)	Ø60^{H7}		Ø60^{H7}		Ø100^{H7}	
Overall height		(mm)	400		500		550	
Width of T slots		(mm)	22^{H7}		22^{H7}		28^{H7}	
Operating pressure - Hydraulic		(bar)	35		35		35	
Ambient temperature		(°C)	18~40					
Table division		(division)	72	360	72	360	72	360
Minimum input increment		(degree)	5	1	5	1	5	1
Gear ratio, Motor to Table Top			1 / 360		1 / 720		1 / 720	
Table speed	(motor 3000 r.p.m)		8.3		4.16		4.16	
Servo motor (Optional)	FANUC		α22i		α30i		α30i	
	SIEMENS		1FK7101		1FK7103		1FK7103	
	HEIDENHAIN		QSY155D		QSY155F		QSY155F	
Indexing accuracy		(sec of arc)	8		8		8	
Repeatability		(sec of arc)	2		2		2	
Clamping torque		(kgf-m) (N-m)	9077 88961		25784 252688		29825 292285	
Permissible load (With table clamped)	F	(kgf) (N)	6900 67620		11500 112700		12600 123480	
	FxL	(kgf-m) (N-m)	1400 13720		1960 19208		2600 25480	
	FxH	(kgf-m) (N-m)	1600 15680		2300 22540		3000 29400	
Permissible piece part and fixture weight	0°	(kg)	5000		10000		12000	
Net Weight		(kg)	2200		5400		8000	
Allowable work inertia	$J=\frac{A^2+B^2}{12}xW$	(kg-m^2)	830		3266		6480	

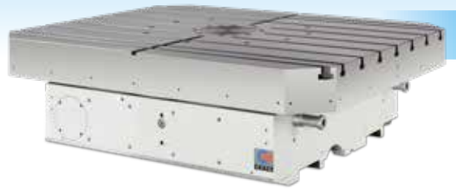
* We reserve the right to make changes arising from constant product development without advance notice.
* The list of fitting servomotor, please refer to page 61.

Guaranteed inspection accuracy

NO	Inspection Items		HC-1000H	HC-1400H	HC-1800H
1	Concentricity of center hole		0.01	0.01	0.01
2	Table run out	mm	0.02	0.02	0.03
3	Table straightness	mm	0.02	0.03	0.04
4	Parallelism between plate and base	mm	0.02	0.03	0.04
5	Square of side reference plane	mm	0.02	0.03	0.04
6	T-Slot tolerance	mm	0.02	0.02	0.02

NCT-H

Heavy Duty, CNC Rotary Table



NCT-H is suitable for horizontal machining center and boring/milling machine. Equipped with dual lead worm transmission for minimum increment 0.001 degree. Table sizes from 1000mm to 2500mm or manufactured according to customer's requirement, loading capacity up to 20,000kgs (on request).

Model			NCT-1000H	NCT-1400H	NCT-1800H
Working table dimension (LxW)		(mm)	1000 x 1000	1400 x 1400	1800 x 1800
Diameter of "Pilot" bore		(mm)	Ø230^{H7}	Ø330^{H7}	Ø330^{H7}
Overall height		(mm)	410	500	600
Width of T slots		(mm)	22^{H7}	22^{H7}	24^{H7}
Operating pressure - Hydraulic		(bar)	35	35	35
Ambient temperature		(°C)	18~40		
Minimum input increment		(degree)	0.001	0.001	0.001
Gear ratio, Motor to Table Top			1/360	1/720	1/720
Table speed	(motor 3000 r.p.m)		8.3	4.16	4.16
Servo motor (Optional)	FANUC		α22i	α30i	α30i
	SIEMENS		1FK7101	1FK7103	1FK7103
	HEIDENHAIN		QSY155D	QSY155F	QSY155F
Indexing accuracy		(sec of arc)	15	15	15
Repeatability		(sec of arc)	4	4	4
Rotation torque		(kgf-m) (N-m)	600 5880	750 7350	900 8820
Permissible load (With table clamped)	F	(kgf) (N)	4000 39200	5000 49000	1800 17640
	FxL	(kgf-m) (N-m)	700 6860	900 8820	3000 29400
	FxH	(kgf-m) (N-m)	1800 17640	2400 23520	3500 34300
Permissible piece part and fixture weight	0°	(kg)	5000	10000	12000
Net Weight		(kg)	3000	6000	8000
Allowable work inertia	$J=\frac{A^2+B^2}{12}xW$	(kg-m^2)	830	3266	6480

* We reserve the right to make changes arising from constant product development without advance notice.
* The list of fitting servomotor, please refer to page 61.

Guaranteed inspection accuracy

NO	Inspection Items		NCT-1000H	NCT-1400H	NCT-1800H
1	Concentricity of center hole		0.01	0.01	0.01
2	Table run out	mm	0.02	0.02	0.03
3	Table straightness	mm	0.02	0.03	0.04
4	Parallelism between plate and base	mm	0.02	0.03	0.04
5	Square of side reference plane	mm	0.02	0.03	0.04
6	T-Slot tolerance	mm	0.02	0.02	0.02

CT Series Non-Lifting Indexing Table with Hirth Coupling Gear

OUTSTANDING PERFORMANCE, RUGGED, RELIABLE WITH THE HIGHEST PRECISION

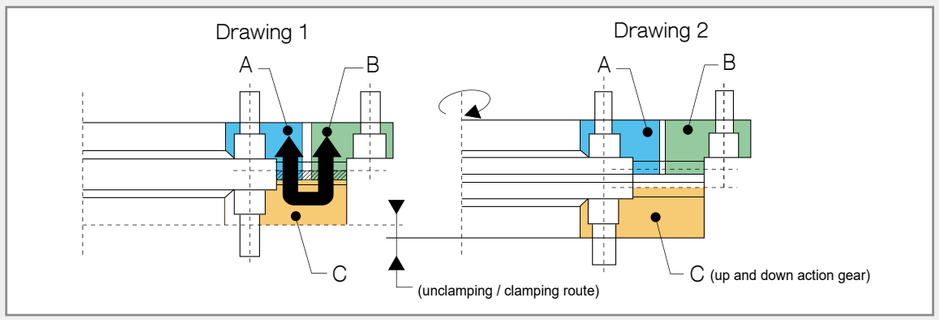
- Wide range of styles and sizes
- Robust and wear-resistant design
- High indexing accuracy and repeatability values
- Resistance to high machining forces
- Simple installation with reliable operations
- Low maintenance design

Application Examples

A CNC transfer machine of today is likely to be a flexible CNC machine. It is especially suitable where different types of work pieces must be produced in quantities. The machine is especially useful for industries such as automotive, watches, livelihood necessities, and climate control systems. CT series indexing tables are widely used in transfer machines either as horizontal or vertical axis. Fast rotation time and high indexing accuracy ensures outstanding productivity be produced in medium to high quantities. Change livelihood to everyday necessities.

CT series of Non-Lifting Indexing Tables are used in Transfer machines, dial machines or in any machines requiring repetitive positioning with the accuracy and extreme rigidity only achievable with a Hirth coupling and hydraulic clamping.

Function Principles of Non-Lifting Indexing Table



There are 3 gear rings to each Hirth Coupling
Gear ring A is attached to the rotating table top plate
Gear ring B is the "datum" attached to the table housing
Gear ring C raises and lowers inside the table housing to connect gear ring A and gear ring B together after each cycle.

Please refer to drawing 2

- Gear ring C is shown lowered to release the locked assembly
- Gear ring A is now free to rotate with the table top
- After the rotation is complete, Gear A is now in the new location
- Gear ring C then raises to create a re-locked assembly as illustrated in drawing 1

Note: The raising and lowering of the gear rings is similar to a lapping effect.
The accuracy of the gear teeth improves over time.

CT-TN

180° Shuttle Table for APC

CT-WS

CT-A

CT-V

CT

Horizontal, Hydraulic Non-Lifting Indexing Table with Hirth Coupling Gear

The CT series of Indexing Tables are designed with a 3 piece Hirth coupling for high accuracy and repeatability without accumulative error. Table indexing is via a hydraulic rack & pinion which provides high speed repetitive positioning with a smooth motion, the hydraulic clamping system ensures optimal clamping to withstand heavy cutting forces. The tables are offered with alternate Hirth coupling in-order to meet various indexing requirements to suit applications.

Model		CT-200	CT-340	CT-470	CT-600	CT-800	CT-1000	CT-1200
Table diameter	(mm)	Ø200	Ø340	Ø470	Ø600	Ø800	Ø1000	Ø1200
Diameter of "Pilot" bore	(mm)	Ø30^{H7}	Ø65^{H7}	Ø90^{H7}	Ø110^{H7}	Ø120^{H7}	Ø120^{H7}	Ø160^{H7}
Depth of "Pilot" bore	(mm)	30	11	12	11	40	50	70
Diameter of through hole	(mm)	Ø27	Ø31	Ø41	Ø53	Ø80	Ø80	Ø90
Overall height	(mm)	175	210	240	260	305	315	390
Operating pressure - Hydraulic	(bar)	35	35	35	35	35	35	35
Ambient temperature	(℃)	18~40						
Indexing divisions - Standard	(division)	4,6,8,12 or 24						
Indexing divisions - Optional	(division)	2,3,5 or 9						
Direction of rotation		Clockwise and / or Counter Clockwise						
Indexing accuracy	(sec of arc)	8	8	8	8	8	8	8
Repeatability	(sec of arc)	2	2	2	2	2	2	2
Maximum mass moment of inertia	$J=\frac{W\cdot D^2}{8}$ (kg-m^2)	7	21.25	45	125	300	600	720
Unclamp / Clamp Times	(sec)	0.7 / 0.1	0.6 / 0.1	0.8 / 0.1	0.8 / 0.1	0.6 / 0.3	0.7 / 0.4	0.7 / 0.4
"Typical" cycle time for 90°	(sec)	1.3	2.3	2.5	3.8	3.9	4.0	4.0
Clamping torque	(kgf-m)	1181	1520	3709	6066	9077	9077	13200
	(N-m)	11577	14896	36349	59450	88961	88961	129360
Permissible load (With table clamped) F	(kgf)	1000	1600	2500	3500	5250	6900	10000
	(N)	9800	15680	24500	34300	51450	67620	98000
Permissible load (With table clamped) FxL	(kgf-m)	250	350	500	700	1050	1400	2000
	(N-m)	2450	3430	4900	6860	10290	13720	19600
Permissible load (With table clamped) FxH	(kgf-m)	250	400	550	770	1200	1600	2500
	(N-m)	2450	3920	5390	7546	11760	15680	24500
Permissible weight of piece part & fixture 0°	(kg)	250	500	700	1250	2400	3500	4000
Net Weight	(kg)	50	115	270	480	900	1240	2500

* The outlook dimension of 2 and 3 divisions will be different.
* "Typical" cycle time 90 degrees value base on 35kg/cm^2, 2 HP, 30L/min regular hydraulic condition.

◎ Standard accessories

Hangers
◎

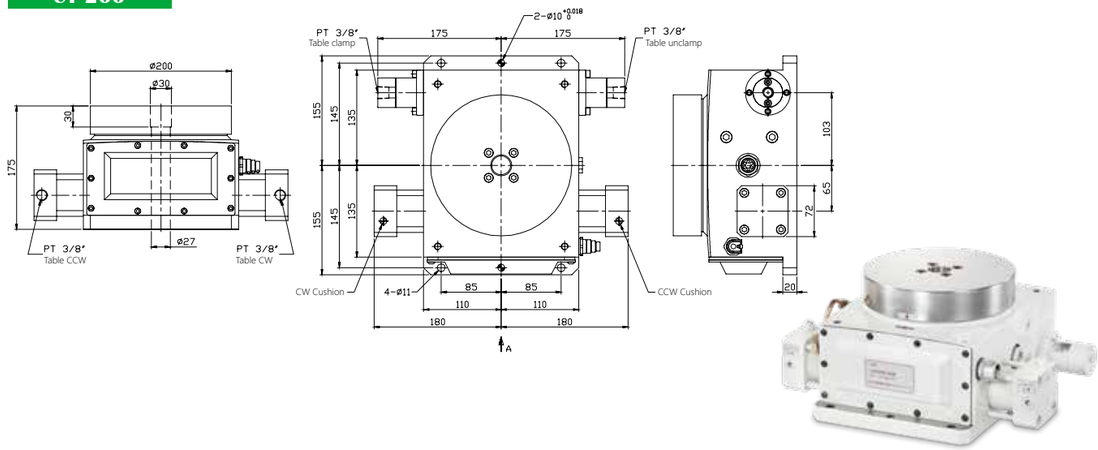
✻ Optional accessories

Rotary Joint	Hydraulic unit	Oil Pipe	Special top plate
✻	✻ (p.60)	✻	✻

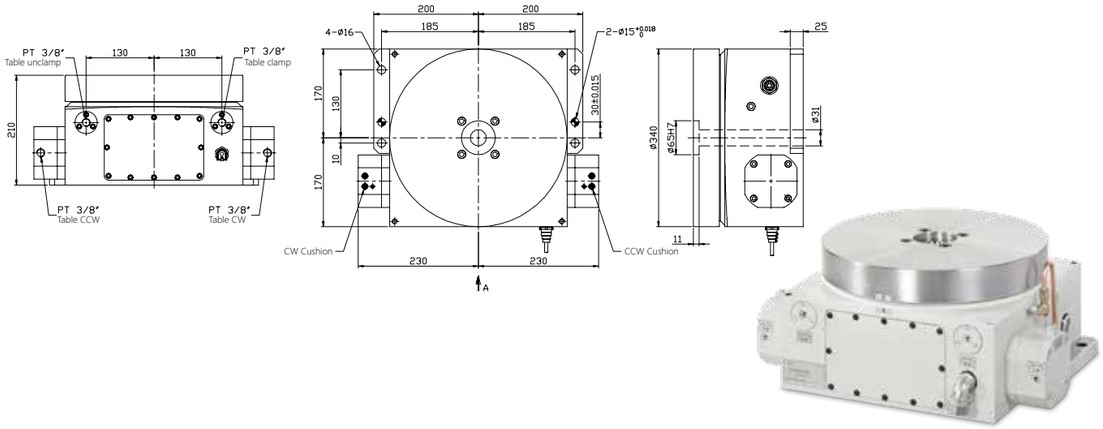
Guaranteed inspection accuracy

NO	Inspection Items		CT-200	CT-340	CT-470	CT-600	CT-800	CT-1000	CT-1200
1	Concentricity center hole	mm	0.02	0.02	0.02	0.02	0.02	0.02	0.02
2	Table run out	mm	0.02	0.02	0.02	0.02	0.02	0.02	0.02
3	Table straightness	mm	0.02	0.02	0.02	0.02	0.02	0.02	0.03
4	Parallelism between plate and base	mm	0.02	0.02	0.02	0.03	0.03	0.03	0.03

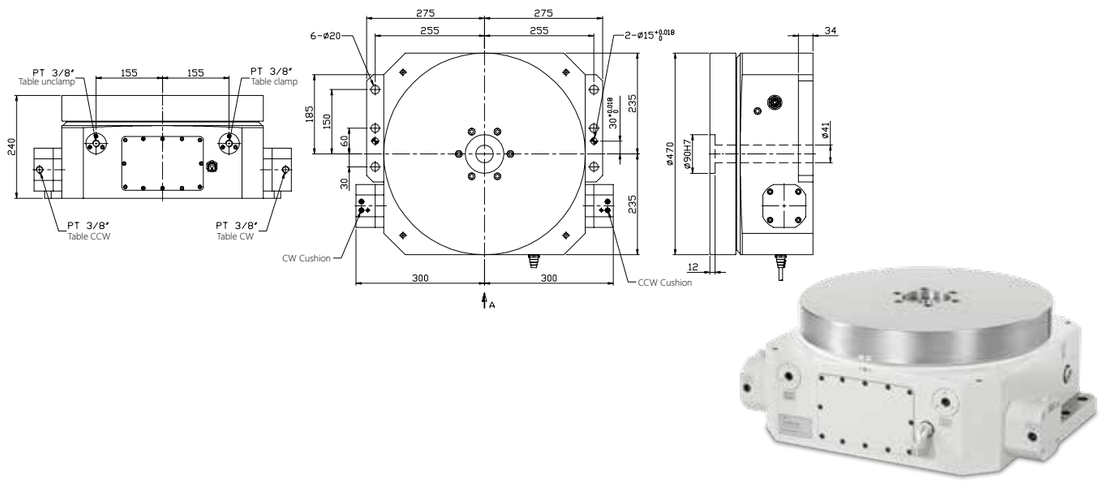
CT-200



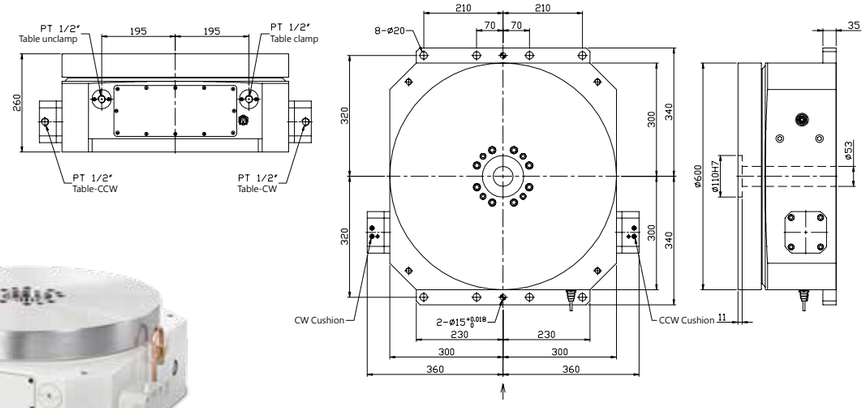
CT-340



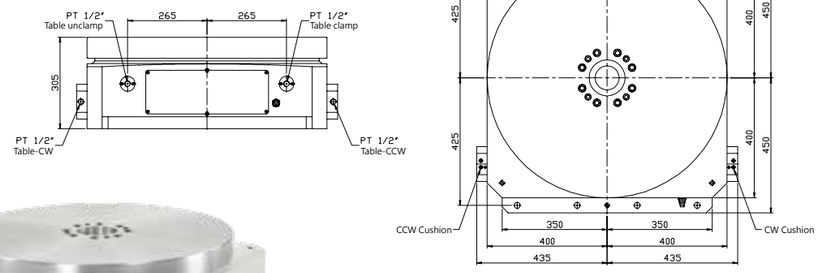
CT-470



CT-600

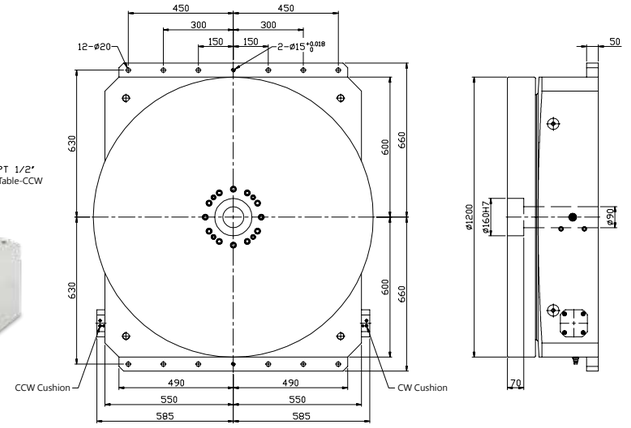


CT-800



CT-1000

CT-1200



CT-470A

Tables shown with an optional rotary manifold.

CT-600A

Tables shown with an optional rotary manifold.

CT-V

Vertical, Hydraulic Non-Lifting Indexing Table with Hirth Coupling Gear

The CT-V series of Indexing Tables are designed with a 3 piece Hirth coupling for high accuracy and repeatability without accumulative error. Table indexing is via a hydraulic rack & pinion which provides high speed repetitive positioning with a smooth motion, the hydraulic clamp system ensures optimal clamping to withstand heavy cutting forces. The tables are offered with alternate Hirth couplings in-order to meet various index spacing to suit the application.

Model			CT-200V	CT-250V	CT-320V
Table diameter		(mm)	Ø200	Ø250	Ø320
Diameter of "Pilot" bore		(mm)	$Ø30^{H6}$	$Ø55^{H7}$	$Ø65^{H7}$
Depth of "Pilot" bore		(mm)	35	12	21
Diameter of through hole		(mm)	Ø27	Ø30	Ø31
Overall height of table assembly		(mm)	290	370	395
Center height of table axle		(mm)	155	210	230
Width of T slots		(mm)	12^{H7}	12^{H7}	14^{H7}
Width of alignment key in mounting base		(mm)	18^{h7}	18^{h7}	18^{h7}
Operating pressure - Hydraulic		(bar)	35	35	35
Ambient temperature		(°C)	18~40		
Indexing divisions - Standard			4,6,8,12 or 24		
Indexing divisions - Optional			2,3,5 or 9		
Direction of rotation			Clockwise and / or Counter Clockwise		
Indexing accuracy		(sec of arc)	8	8	8
Repeatability		(sec of arc)	2	2	2
Maximum mass moment of inertia	$J=\frac{W \cdot D^2}{8}$	(kg-m^2)	7	10	21.25
Unclamp / Clamp Times		(s)	0.7 / 0.1	0.7 / 0.1	0.6 / 0.1
"Typical" cycle time for 90°		(s)	1.3	2.0	2.3
Clamping torque		(kgf-m) (N-m)	1181 11577	1516 14862	1456 14269
Permissible load (With table clamped)	F	(kgf) (N)	1000 9800	1500 14700	1600 15680
	FxL	(kgf-m) (N-m)	250 2450	300 2940	350 3430
	FxL	(kgf-m) (N-m)	250 2450	350 3430	400 3920
Permissible weight of piece part and fixture	90°	(kg)	95	130	200
Net Weight		(kg)	50	110	170

* The outlook dimension of 2 and 3 divisions will be different.
* "Typical" cycle time 90 degrees value base on 35kg/cm^2, 2 HP, 30L/min regular hydraulic condition.

◎ Standard accessories

Block nuts	Hangers
◎	◎

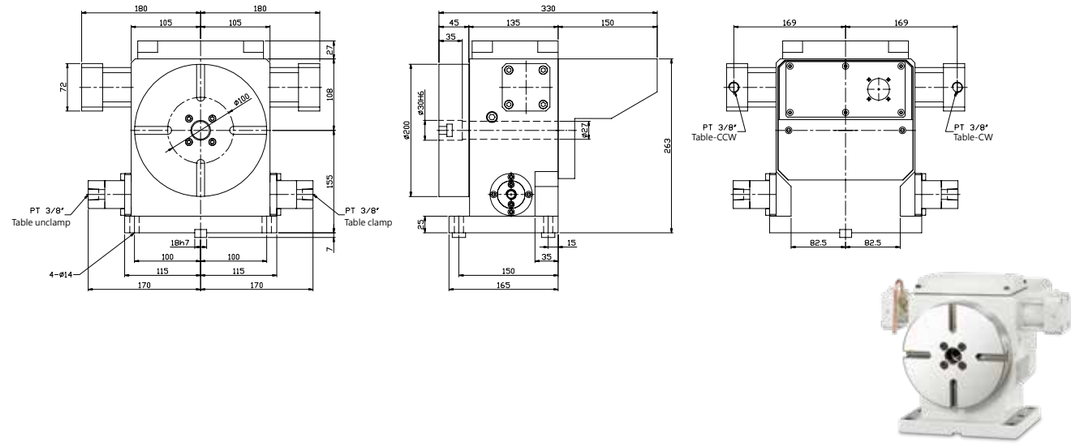
✻ Optional accessories

Tailstock		3-jaw chuck with sub plate	Hydraulic unit
Taper	Support		
*(p.52)	*(p.54)	*(p.60)	*(p.60)

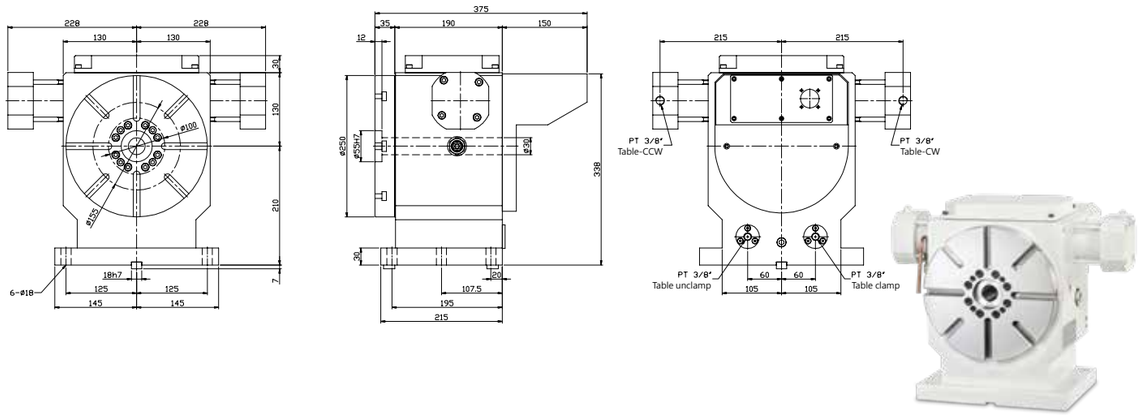
Guaranteed inspection accuracy

NO	Inspection Items		CT-200V	CT-250V	CT-320V
1	Plate straightness	mm	0.015	0.015	0.015
2	Table surface run outs	mm	0.02	0.02	0.02
3	Parallelism between plate and base surface	mm	0.02	0.02	0.02
4	Concentricity center hole	mm	0.02	0.02	0.02
5	Square between plate and base surface	mm	0.02	0.02	0.02
6	Square between plate and bottom anchor center line	mm	0.02	0.02	0.02
7	Parallelism between plate, tailstock center line and base anchor	mm	0.02	0.02	0.02
8	Tolerance between plate and tailstock center line	mm	0.02	0.02	0.02

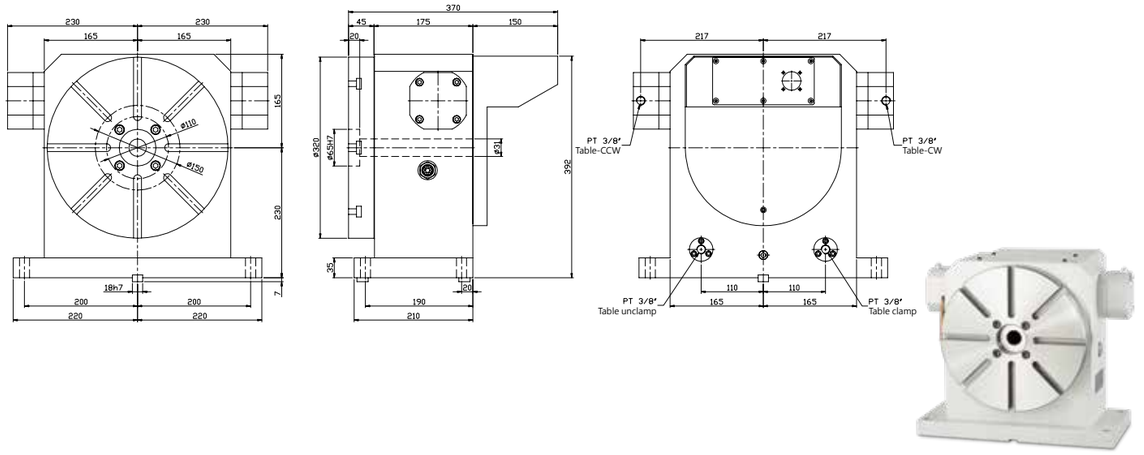
CT-200V



CT-250V



CT-320V



CT-WS-D

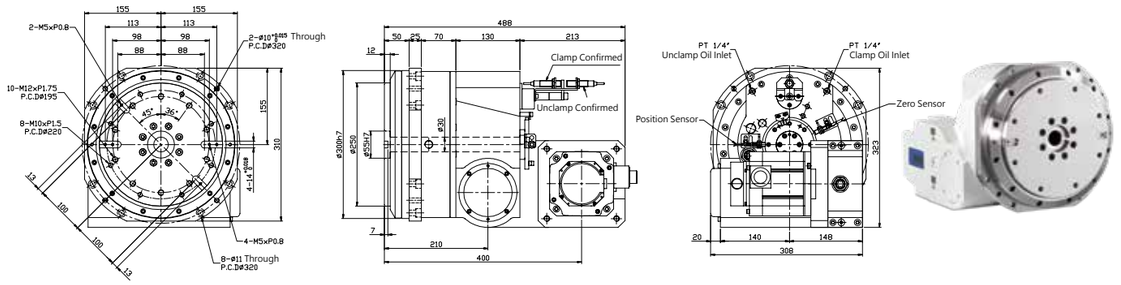
CNC Non-Lifting Vertical / Horizontal Indexing Table, Built-in style - Hydraulic clamping with Hirth Gear

CT-WS-D Indexing Tables are rotated by a dual lead worm gear driven via a servo motor which provides rapid bi-directional indexing. An integrated hydraulically clamped 3 piece Hirth coupling ensures high indexing and repeatability accuracy, plus rigidity for heavy duty machining applications.

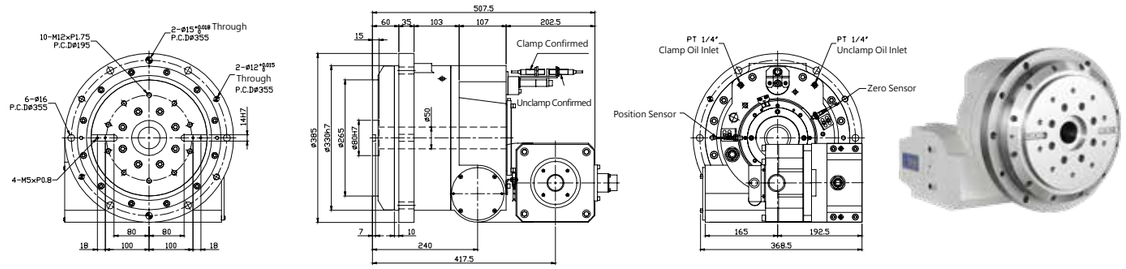
Model		CT-250WS-D	CT-350WS-D	CT-450WS-D	CT-600WS-D	CT-800WS-D
Diameter of table top	(mm)	Ø250	Ø265	Ø300	Ø380	Ø565
Diameter of mounting ring	(mm)	Ø340	Ø385	Ø450	Ø560	Ø800
Diameter of "Pilot" bore	(mm)	$Ø55^{H7}$	$Ø80^{H7}$	$Ø100^{H7}$	$Ø110^{H7}$	$Ø130^{H7}$
Depth of "Pilot" bore	(mm)	12	15	35	40	40
Diameter of through hole	(mm)	Ø30	Ø50	Ø60	Ø50	Ø50
Overall height	(mm)	340	385	420	560	800
Width of mounting keys	(mm)	14^{h7}	14^{h7}	20^{h7}	20^{h7}	20^{h7}
"Run-out" of pilot bore	(mm)	0.02	0.02	0.02	0.02	0.02
"Run-out" of table surface	(mm)	0.02	0.02	0.02	0.02	0.02
Operating pressure - Hydraulic	(bar)	35	50	50	50	50
Ambient temperature	(°C)	18~40				
Indexing divisions - Standard		4,6,8,12 or 24				
Indexing divisions - Optional		2,3,5 or 9				
Direction of rotation		Clockwise and / or Counter Clockwise				
Indexing accuracy	(sec of arc)	8	8	8	8	8
Repeatability	(sec of arc)	2	2	2	2	2
Gear ratio, Motor to Table Top		1/36	1/45	1/60	1/90	1/90
Table speed	(motor 3000 r.p.m)	83.3	66.7	50	33.3	33.3
	(motor 4000 r.p.m)	111.1	88.9	66.7	44.4	44.4
Servo motor (Optional)	FANUC	αi8	αi12	αi12	αi22	αi22
	MITSUBISHI	HG-154T	HG-204S	HG-204S	HG-354S	HG-354S
	MITSUBISHI (General)	HG-SR152J	HG-SR202J	HG-SR202J	HG-SR352J	HG-SR502J
Maximum mass moment of inertia	$J=\frac{W\cdot D^2}{8}$ (ØD, W) (kg-m^2)	15	18	25	65	100
Clamping torque	(kgf-m)	1516	1895	2170	3340	9077
	(N-m)	14862	18577	21270	32740	88961
Permissible load (With table clamped)	F (kgf)	2320	3000	3970	6448	9670
	(N)	22736	29400	38906	63190	94766
	FxL (kgf-m)	300	400	500	840	1050
	(N-m)	2940	3920	4900	8232	10290
	FxL (kgf-m)	835	1125	1428	1980	2970
	(N-m)	8183	11025	13994	19404	29106
Permissible weight of piece part and fixture	90° (kg)	160	280	400	500	750
Net Weight	(kg)	100	200	220	350	880

* We reserve the right to make changes arising from constant product development without advance notice.
* The list of fitting servomotor, please refer to page 61.

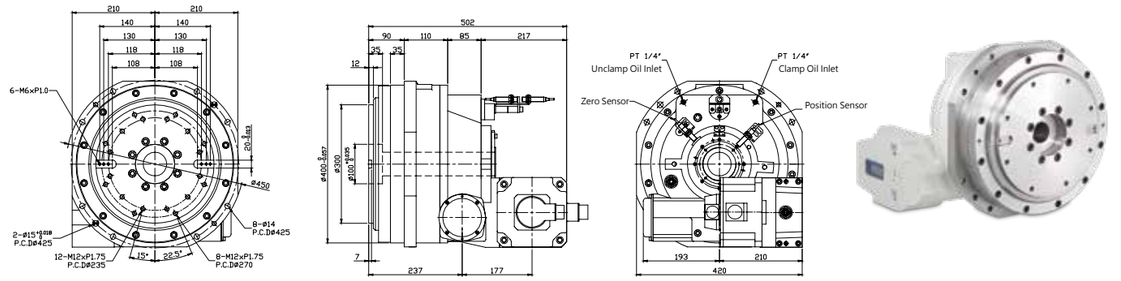
CT-250WS-D



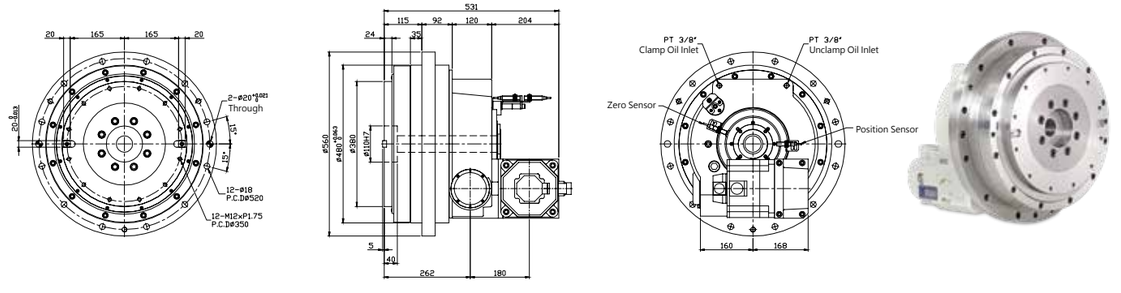
CT-350WS-D



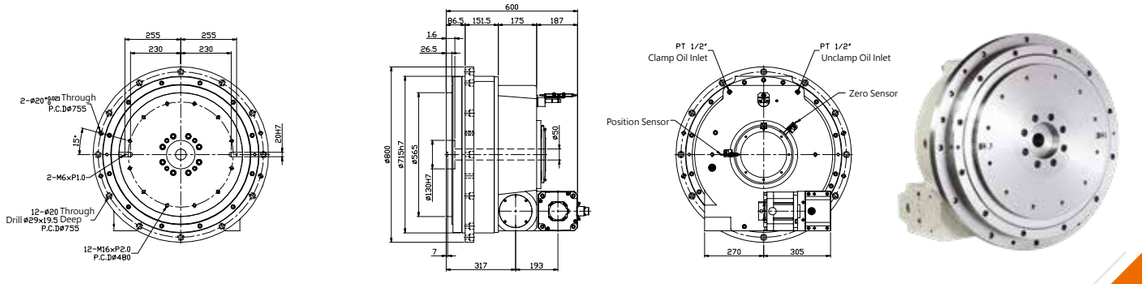
CT-450WS-D



CT-600WS-D



CT-800WS-D



MBT

Manual, Horizontal Indexing Table with Hirth Gear

MBT series tables are designed with a 2 piece Hirth coupling for manually rotating in multiples of either 1° or 5° increments to an accuracy of +/- 2 seconds of arc. The tables are clamped pneumatically or hydraulically depending upon model, by a simple actuation lever or hand-held pendant. A vernier scale and pointer offers a reference during rotation, however, a digital scale is available on the larger tables (on request) These heavy duty, but simple and self contained tables are ideal for Jobs Shops or for applications where the indexing table needs to be frequently removed and re-installed to accommodate machine tool utility.

Model		MBT-450		MBT-600		MBT-800		MBT-1000		MBT-1200	
Table dimension	(mm)	450 x 450		600 x 600		800 x 800		1000 x 1000		1200 x 1200	
Diameter of "Pilot" bore	(mm)	Ø30^{H7}		Ø40^{H7}		Ø60^{H7}		Ø60^{H7}		Ø80^{H7}	
Overall height	(mm)	170		200		280		300		340	
Width of T slots	(mm)	18^{H7}		20^{H7}		22^{H7}		22^{H7}		22^{H7}	
Operating pressure	(bar)	Pneumatic 5~8									
Direction of rotation		Bi-directional									
Ambient temperature	(°C)	18~40									
Indexing divisions	(division)	72	360	72	360	72	360	72	360	72	360
Indexing increments	(degree)	5	1	5	1	5	1	5	1	5	1
Indexing accuracy	(sec of arc)	4		4		4		4		4	
Repeatability	(sec of arc)	2		2		2		2		2	
Clamping torque	(kgf) (N)	1633 16003		2626 25738		4474 43848		4474 43848		8732 85575	
Permissible load (with table clamped) F	(kgf) (N)	2400 23520		3400 33320		4500 44100		6000 58800		7000 68600	
Permissible load (with table clamped) FxL	(kg)	440 4312		640 6272		1080 10584		1200 11760		1620 15876	
Permissible load (with table clamped) FxH	(kg)	490 4802		710 6958		1200 11760		1330 13034		1800 17640	
Permissible piece part and fixture weight	0° (kg)	1000		2000		3000		5000		6000	
Net Weight	Net (kg)	200		400		1100		1350		2400	

◎ Standard accessories

Block nuts	Air purge
◎	◎

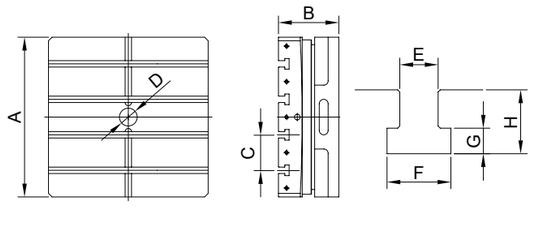
✻ Optional accessories

Special top plate	Different of standard T-slot	Other
✻	✻	✻

Guaranteed inspection accuracy

NO	Inspection Items		MBT-450	MBT-600	MBT-800	MBT-1000	MBT-1200
1	Concentricity of the center	mm	0.01	0.01	0.01	0.01	0.01
2	Plate run out	mm	0.01	0.015	0.015	0.02	0.02
3	Plate straightness	mm	0.015	0.02	0.02	0.03	0.03
4	Parallelism between plate and base	mm	0.015	0.02	0.02	0.03	0.03
5	Square of side reference plane	mm	0.015	0.02	0.02	0.03	0.03
6	T-Slot tolerance	mm	0.015	0.02	0.02	0.03	0.03

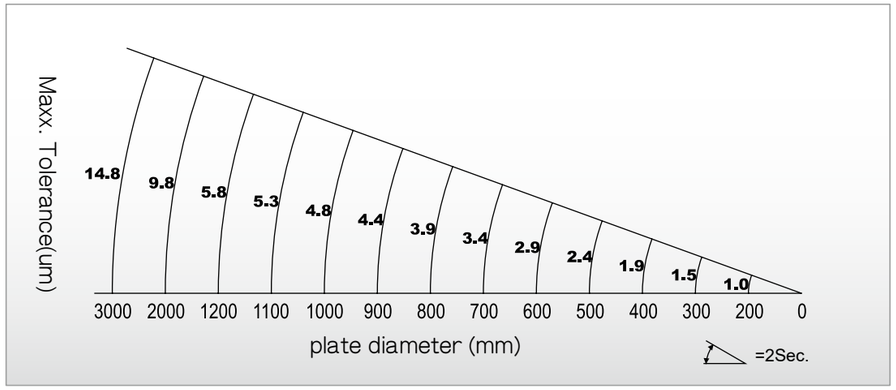
Dimension



Model	MBT-450	MBT-600	MBT-800	MBT-1000	MBT-1200
A	450	600	800	1000	1200
B	170	200	280	300	340
C	100x4	100x5	100x7	125x7	200x5
D^{H7}	30	40	60	60	80
E^{H7}	18	20	22	22	22
F	30	34	38	38	38
G	12	14	15	15	15
H	30	34	38	38	38

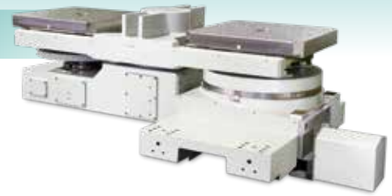
*Plain and customized table tops available upon request.

± 2 Sec Indexing Accuracy



NCT-HP

Auto-Pallet Changer and Rotary Table "Package"



Working table minimum input increment of 0.001°
For Horizontal Machining Centers.
The work table is rotated by a dual worm gear driven via a servo motor and clamped with hydraulic surrounding clamping system.
Four high precision cone-shaped bushings ensure pallet repeatability accuracy.
Two driving systems for APC available -- Driven by hydraulic rack & pinion or by servo motor with reduction gear box.

Model			NCT-500HP	NCT-630HP	NCT-800HP
Pallet dimension (work table)		(mm)	500 X 500	630 X 630	800 X 800
Diameter of "Pilot" hole in pallets		(mm)	Ø50^{H7}	Ø50^{H7}	Ø50^{H7}
Height of Rotary Table		(mm)	633	808	805
Width of T slots on pallets		(mm)	14^{H7}	18^{H7}	18^{H7}
Operation pressure - Hydraulic		(bar)	35	35	35
Ambient temperature		(°C)	18~40		
Minimum input increment		(degree)	0.001	0.001	0.001
Gear ratio			1/180	1/180	1/180
Rotation speed (Rotary table)	(motor 3000 r.p.m)		16.6	16.6	16.6
Servo motor (Optional)	FANUC		α12i	α22i	α22i
	MITSUBISHI		HG-204S	HG-354S	HG-354S
	SIEMENS		1FK7083	1FK7101	1FK7101
Encoder (Optional)	HEIDENHAIN		RCN2390F(±5")	RCN2390F(±5")	RCN2390F(±5")
Transmission			Motor with reducer / Hydraulic rack & pinion		
Maximum weight loading		(kg)	(single plate 600) 1200	(single plate 1200) 2400	(single plate 1600) 3200
Operation pressure for transmission - Hydraulic		(bar)	50	50	50
Exchange times	Motor & reducer	(sec)	7.5	10	12.5
	Rack & pinion	(sec)	15	20	25
Indexing accuracy - mechanical		(sec)	15	15	15
Indexing accuracy - with Encoder (Option)		(sec)	±5"	±5"	±5"
Repeatability		(sec)	±2"	±2"	±2"
Clamping torque		(kgf-m) (N-m)	2000 19600	2600 25480	3400 33320
Rotation torque		(kgf-m) (N-m)	240 2352	300 2940	390 3822
Permissible piece part weight	0° W	(kg)	600	1200	1600
Weight	Net	(kg)	2300	3000	4500
Allowable work inertia	$J=\frac{A^2+B^2}{12}xW$ A W	(kg-m^2)	25	80	170.6

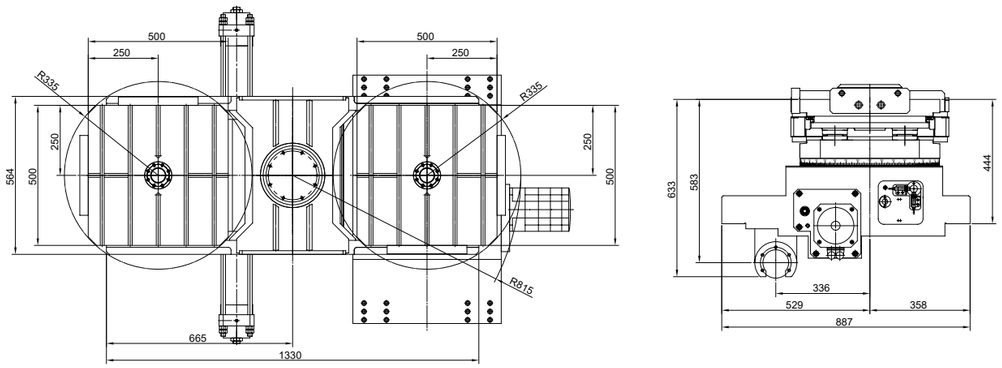
HC-HP

Auto-Pallet Changer and Indexing Table "Package"

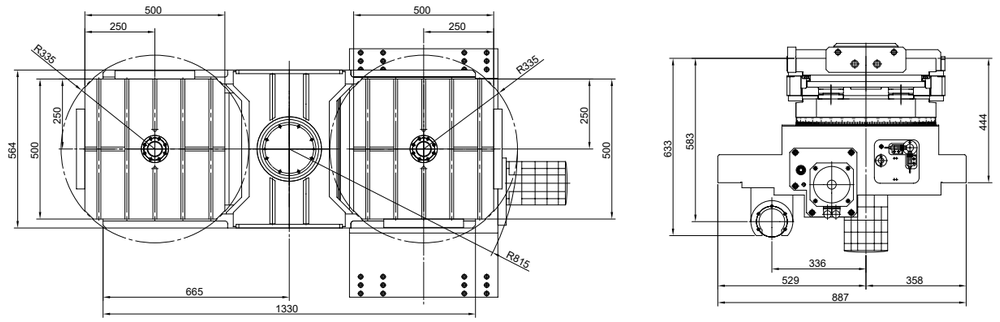
Working table minimum input increment of 1° or 5°
For Horizontal Machining Centers.
The work table is equipped with dual lead worm and three piece hirth coupling gears with hydraulic clamping system to improve loading capacity.
Four high precision cone-shaped bushings ensure pallet repeatability accuracy.
Two driving systems for APC available -- Driven by hydraulic rack & pinion or by servo motor with reduction gear box.

Model			HC-500HP		HC-630HP		HC-800HP	
Pallet dimension (work table)		(mm)	500 X 500		630 X 630		800 X 800	
Diameter of "Pilot" hole in pallets		(mm)	Ø50^{H7}		Ø50^{H7}		Ø50^{H7}	
Height of Index Table		(mm)	633		808		805	
Width of T slots on pallets		(mm)	14^{H7}		18^{H7}		18^{H7}	
Operation pressure - Hydraulic		(bar)	35		35		35	
Ambient temperature		(°C)	18~40					
Table division		(division)	72	360	72	360	72	360
Minimum input increment		(degree)	5	1	5	1	5	1
Gear ratio			1/180		1/180		1/180	
Rotation speed (Indexing table)	(motor 3000 r.p.m)		16.6		16.6		16.6	
Servo motor (Optional)	FANUC		α12i		α22i		α22i	
	MITSUBISHI		HG-204S		HG-354S		HG-354S	
	SIEMENS		1FK7083		1FK7101		1FK7101	
Transmission			Motor with reducer / Hydraulic rack & pinion					
Maximum weight loading		(kg)	(single plate 600) 1200		(single plate 1200) 2400		(single plate 1600) 3200	
Operation pressure for transmission - Hydraulic		(bar)	50		50		50	
Exchange times	Motor & reducer	(sec)	7.5		10		12.5	
	Rack & pinion	(sec)	15		20		25	
Indexing accuracy - mechanical		(sec)	8		8		8	
Repeatability		(sec)	2		2		2	
Clamping torque		(kgf-m) (N-m)	3000 29400		4000 39200		5200 50960	
Permissible piece part weight	0° W	(kg)	600		1200		1600	
Weight	Net	(kg)	2300		3000		4500	
Allowable work inertia	$J=\frac{A^2+B^2}{12}xW$ A W	(kg-m^2)	25		80		170.6	

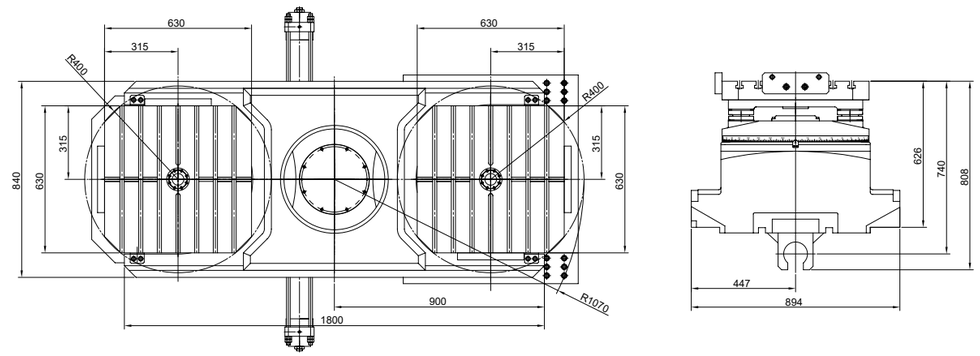
NCT-500HP&HC-500HP (Hydraulic rack and pinion)



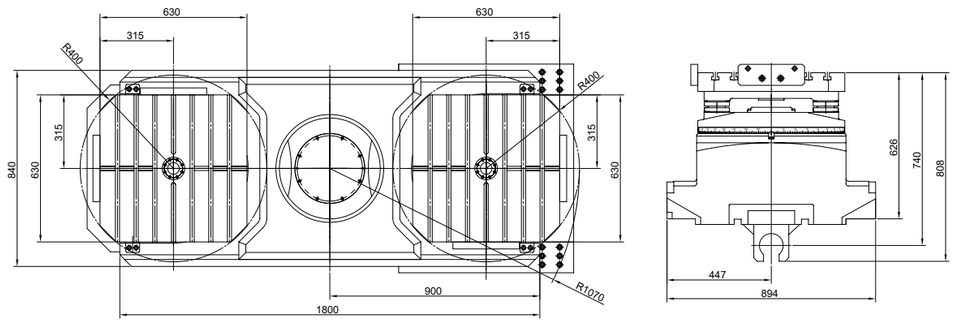
NCT-500HP&HC-500HP (Motor & reducer)



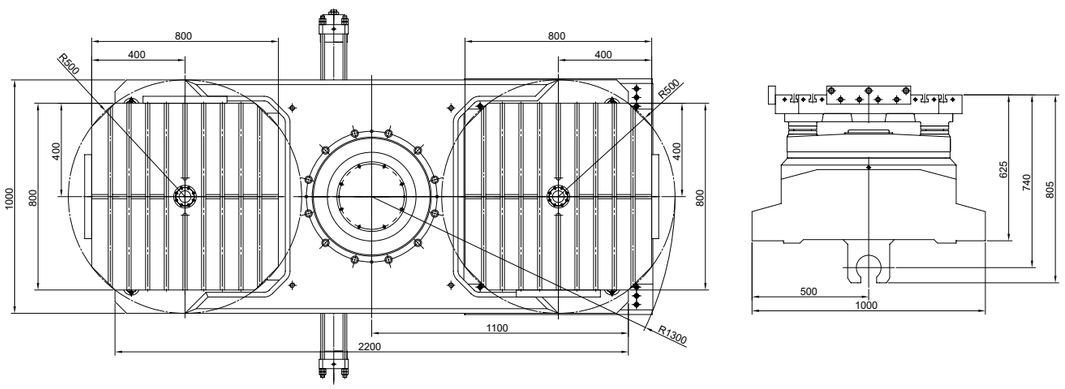
NCT-630HP&HC-630HP (Hydraulic rack and pinion)



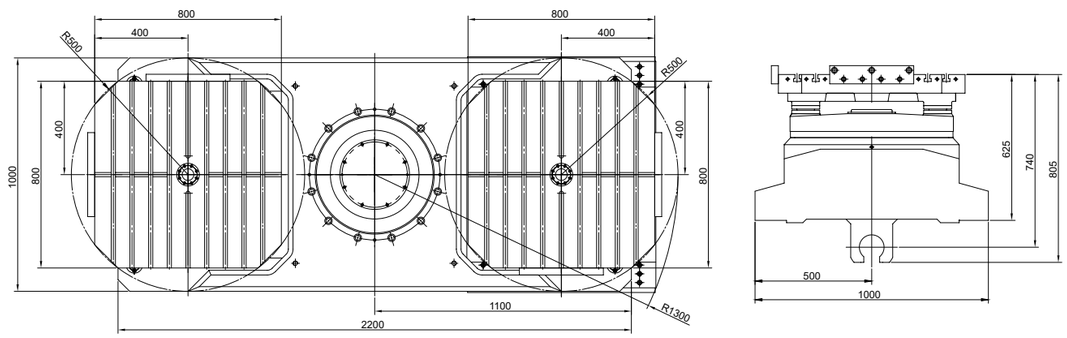
NCT-630HP&HC-630HP (Motor & reducer)



NCT-800HP&HC-800HP (Hydraulic rack and pinion)



NCT-800HP&HC-800HP (Motor & reducer)



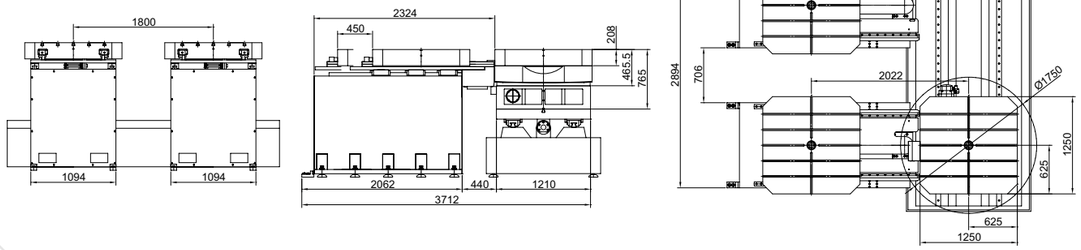
HC-1250HP

CNC Indexing Table with built-in Pallet Receiver, Hydraulic clamping with Hirth Gear

A heavy load capacity table designed for using on horizontal milling & boring machines. Table indexing via a servo motor for flexibility and rapid positioning. Indexing table is hydraulic clamping with Hirth coupling for accuracy and rigidity.

Model			HC-1250HP	
Pallet dimension		(mm)	1250 X 1250	
Diameter of "Pilot" bore		(mm)	Ø55^{H7}	
Max. working diameter		(mm)	Ø1750	
Overall height of table		(mm)	765	
Pallet transporter height		(mm)	Depends on height of B axis	
Pallet transporter length		(mm)	2062	
Width of T slots		(mm)	22^{H7}	
Lifting stroke during pallet transfer		(mm)	0.2~0.3	
Operation pressure		(bar)	35	
Ambient temperature		(°C)	18~40	
Table division		(division)	72	360
Minimum input increment		(degree)	5	1
Gear ratio			1/360	
Rotation speed (Indexing table)	(motor 3000 r.p.m)		8.3	
Servo motor (Optional)	FANUC		α22i	
	MITSUBISHI		HG-354S	
	SIEMENS		1FK7101	
Hydraulic pressure		(kg/cm^2)	35	
Indexing accuracy		(sec)	8	
Repeatability		(sec)	2	
Clamping torque		(kgf-m) (N-m)	5000 49000	
Permissible piece part and fixture weight	0° 	(kg)	6000	
Table weight	Net	(kg)	7500	
Transporter weight	Net	(kg)	6500	
Allowable work inertia	$J=\frac{A^2+B^2}{12}xW$ 	(kg-m^2)	1562.5	

HC-1250HP



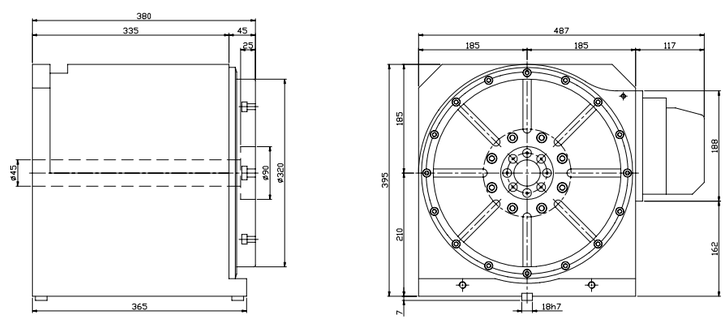
EDS

NC Horizontal Rotary Table with Torque Motor Drive

High speed, Direct Drive motor for rapid positioning and optimum agility. Hydraulic clamp for maximum rigidity during static machining operations.

Model			EDS-320
Diameter of table top		(mm)	Ø320
Diameter of “Pilot” bore		(mm)	Ø90^{H7}
Diameter of through hole		(mm)	Ø45
Overall height with table top horizontal		(mm)	380
Center height with table top vertical		(mm)	210
Width of T slots		(mm)	14^{H7}
Width of alignment key in mounting base		(mm)	18^{h7}
Clamp operation hydraulic pressure		(kg/cm^2)	35
Ambient temperature		(°C)	18~40
Minimum input increment		(degree)	0.001
Maximum table speed		(r.p.m)	300
Drive motor		FANUC	Dis370/300
Maximum torque		(N-m)	370
Cont. torque		(N-m)	150
Encoder		HEIDENHAIN	ECA4490F (±2.5”)
Permissible loads and forces (with table clamped)	F 	(kgf) (N)	650 6377
	FxL 	(kgf-m) (N-m)	140 1373
	FxL 	(kgf-m) (N-m)	100 981
Permissible piece part and fixture weight	0° 	(kg)	400
	90° 	(kg)	200
Net weight	Net	(kg)	305

EDS-320



MTS & MTS-B

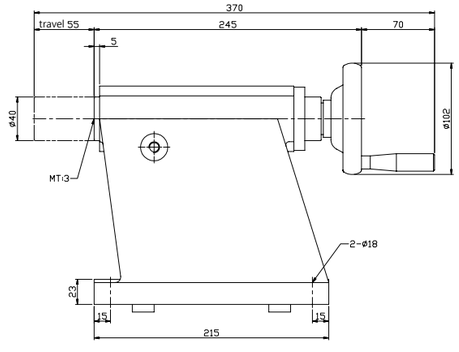
Manual Tailstock

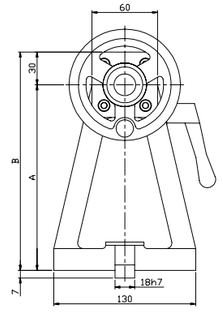
The MTS and MTS-B tailstocks are designed to complement Non-lifting Indexing and NC Rotary tables when heavy and/ or long work piece are machined. Quill travel is driven by handwheel.
Standard center heights from 110~400mm, special sizes are available on request.

MTS & MTS-B Series / Manual Tailstock				Table model #			
Model	Center heights	Overall heights	Net weight	TRT	NCT	HC	CT-V
MTS-110	110	140	12		NCT-125		
MTS-135	135	165	13	TRT-100	NCT-170 NCT-200		
MTS-155	155	185	14				CT-200V
MTS-160	160	190	15			HC-200	
MTS-170	170	200	15		NCT-250	HC-250	
MTS-190	190	220	18				
MTS-215	215	245	20	TRT-170			
MTS-B-210	210	250	27		NCT-(B)-320		CT-250V
MTS-B-230	230	270	30	TRT-250		HC-320	CT-320V
MTS-B-250	250	290	33		NCT-(B)-400	HC-400	
MTS-B-255	255	295	34	TRT-320			
MTS-B-310	310	355	56		NCT-B-500	HC-500	
MTS-B-400	400	445	74		NCT-B-630		
MTS-B-480	480	535	95		NCT-B-800		
MTS-B-650	650	740	200		NCT-B-1000		
MTS-B-750	750	840	300		NCT-B-1200		

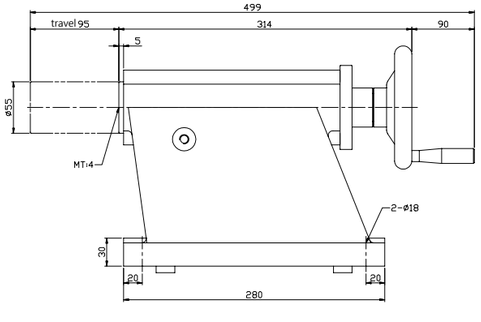
*MTS series quill taper MT#3. * MTS series quill taper MT#4. *MTS-B-480 series quill taper MT#5.
*MTS-B-650、MTS-B-750 series quill taper MT#6.

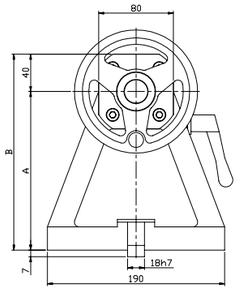
MTS





MTS-B





ATS & ATS-B

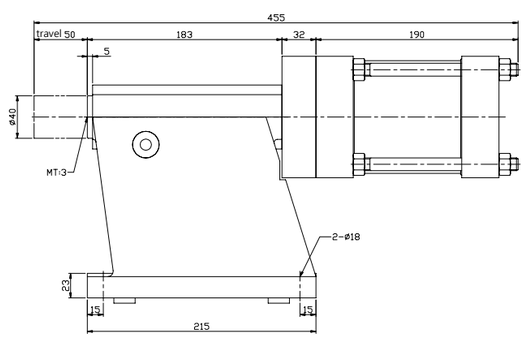
Auto Tailstock

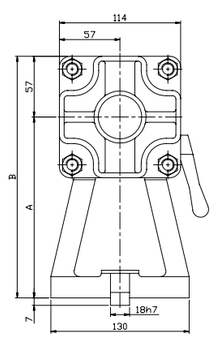
The ATS and ATS - B series tailstocks are available for either pneumatic or hydraulic operations. Standard center heights range is from 110 to 400mm. Optional center heights can be produced upon request .

ATS&ATS-B Series/ Automatic Tailstock				Table model #			
Model	Center heights	Overall heights	Net weight	TRT	NCT	HC	CT-V
ATS-110	110	168	18		NCT-125		
ATS-135	135	193	19	TRT-100	NCT-170 NCT-200		
ATS-155	155	213	20				CT-200V
ATS-160	160	217	21			HC-200	
ATS-170	170	228	21		NCT-250	HC-250	
ATS-190	190	248	25				
ATS-215	215	247	20	TRT-170			
ATS-B-210	210	267.5	34		NCT-(B)-320		CT-250V
ATS-B-230	230	287.5	37	TRT-250		HC-320	CT-320V
ATS-B-250	250	307.5	40		NCT-(B)-400	HC-400	
ATS-B-255	255	312.5	41	TRT-320			
ATS-B-310	310	367.5	63		NCT-B-500	HC-500	
ATS-B-400	400	457.5	81		NCT-B-630		
ATS-B-480	480	537.5	105		NCT-B-800		
ATS-B-650	650	740	220		NCT-B-1000		
ATS-B-750	750	840	330		NCT-B-1200		

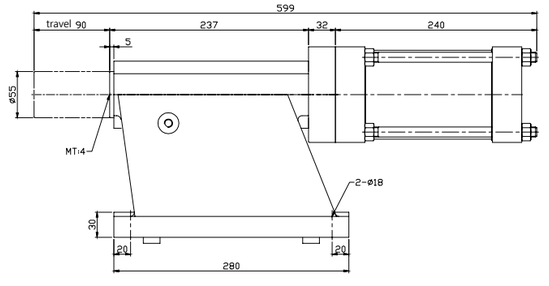
*ATS series quill taper MT#3. * ATS series quill taper MT#4. *ATS-B-480 series quill taper MT#5.
*ATS-B-650、ATS-B-750 series quill taper MT#6.

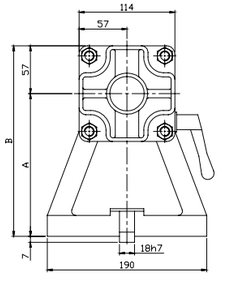
ATS





ATS-B





BTS

Support Tailstock with Hydraulic Clamping

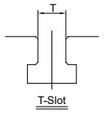
The heavy duty BTS series of tailstocks are fitted with a free hydraulic brake assembly for maximum holding power. Used to support long and / or heavy piece parts or when fabricating a trunion style work holding fixture.

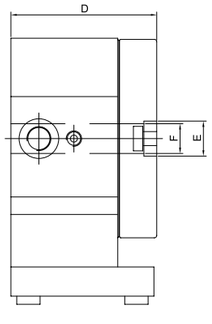
Operating pressure = 35 bar

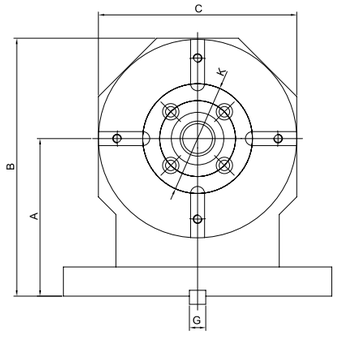
BTS Support Tailstock with Hydraulic Clamping											Table model #		
Model	Central height	B	C	D	E	F	G	K	T	Net weight	NCT	HC	CT-V
BTS-125	110	190	170	125	30^{H7}	25.5	14^{h7}	75	12^{H7}	30	NCT-125		
BTS-170	135	220	170	125	30^{H7}	25	14^{h7}	94	12^{H7}	27	NCT-170	HC-200	
	135	220								27	NCT-200		
	155	240								33			CT-200V
BTS-200	155	255	200	160	30^{H7}	27	18^{h7}	100	12^{H7}	41			CT-200V
	170	270								47	NCT-250	HC-250	
	210	310								55			CT-250V
BTS-250	170	300	260	150	50^{H7}	32	18^{h7}	120	12^{H7}	79	NCT-250	HC-250	
	210	340								85	NCT-(B)-320		CT-250V
	230	360								90		HC-320	CT-320V
BTS-320	210	371	320	155	50^{H7}	32	18^{h7}	150	14^{H7}	116	NCT-(B)-320		
	230	391								120		HC-320	CT-320V
	250	411								122	NCT-(B)-400	HC-400	
BTS-400	250	455	410	230	60^{H7}	51	18^{h7}	140	14^{H7}	238	NCT-(B)-400	HC-400	
	310	515								258	NCT-B-500	HC-500	
	400	605								290	NCT-B-630		
	480	685								350	NCT-B-800		
BTS-600	400	705	610	240	200^{H7}	150	18^{h7}	260	18^{H7}	547	NCT-B-630		
	480	785								656	NCT-B-800		
	650	955								1378	NCT-B-1000		
BTS-800	480	890	820	350	295^{H7}	250	22^{h7}	360	22^{H7}	787	NCT-B-800		
	650	1060								1653	NCT-B-1000		
	750	1160								1985	NCT-B-1200		
BTS-1000	650	1160	1020	380	305^{H7}	260	22^{h7}	410	22^{H7}	1985	NCT-B-1000		
	750	1260								2382	NCT-B-1200		

✻ Most models are available with an integral Hirth coupling for an increased tangential load capacity.

BTS





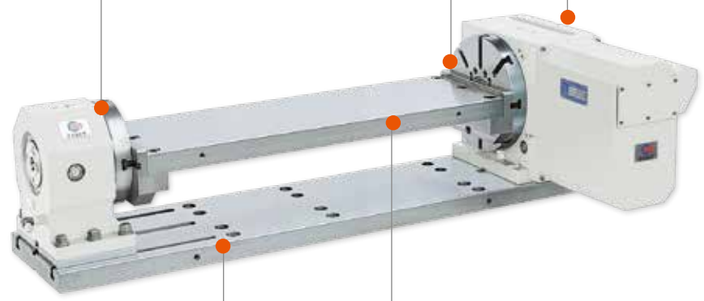


Accessories

BTS Tailstock

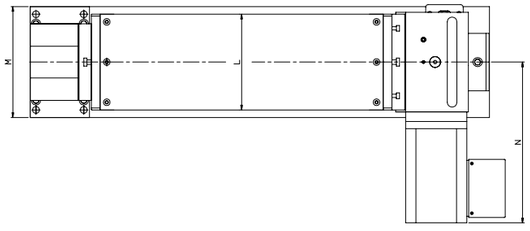
Fixture plate support bracket

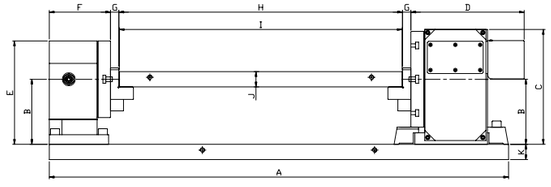
Table: Rotary or Indexing



Base Plate

Fixture Plate





Model / Size	A	B	C	D	E	F	G	H	I	J	K	L	M	N
NCT-125R+BTS-125	700	110	235	264	190	150	22	256	254	25	40	125	240	325
NCT-170R+BTS-170	800	135	275	285	220	125	22	391	389	30	40	170	240	350
NCT-200R+BTS-170	1000	135	273	286	220	125	22	586	584	40	40	200	250	355
NCT-250R+BTS-200	1120	170	300	296	270	160	22	661	660	40	50	250	290	420
NCT-320R+BTS-250	1232	210	380	324	340	150	25	747	745	50	50	320	440	450
NCT-400R+BTS-320	1408	250	455	344	411	155	25	902	900	50	50	400	460	465

✻ Details to suit the application.

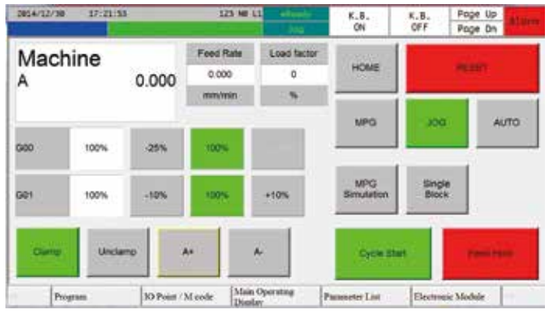
DNS-A

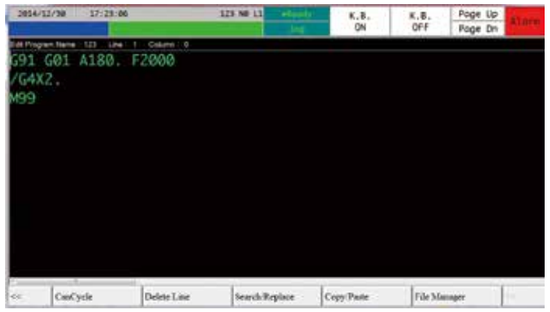
AC Digital NC Controller with Yaskawa Servo System

DNS-A series, self-contained controllers are used in conjunction with Exact CNC Rotary and Rotary/Tilting Tables. Easily programming on the modern touch screen and editing by the same programming logic as machine CNC unit. A portable electric handwheel is available on request. DNS-A series is available to control 2 rotation axes on request.

Model	TRT		NCT	HC
DNS 108A	TRT-100, TRT-170	Rotary	NCT-125	
		Tilting		
DNS 113A			NCT-170, NCT-200	HC-200
			Multi-spindle series	
DNS 118A	TRT-250, TRT-320	Rotary	NCT-250, NCT-250T	HC-250
		Tilting		
DNS 129A	TRT-450	Rotary	NCT-(B)-320, NCT-(B)-400, NCT-B-500	HC-320, HC-400, HC-500
		Tilting	NCT-320T, NCT-400T	
DNS 144A			NCT-B-630, NCT-B-800, NCT-B-1000	HC-630H, HC-800H
DNS 155A			NCT-B-1200 or special application	

◎ Operation Panel

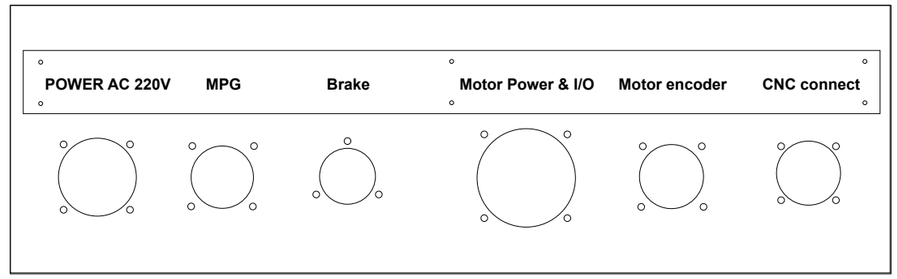


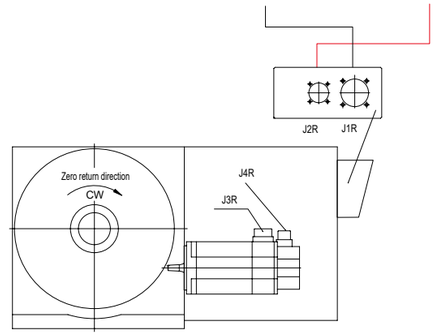


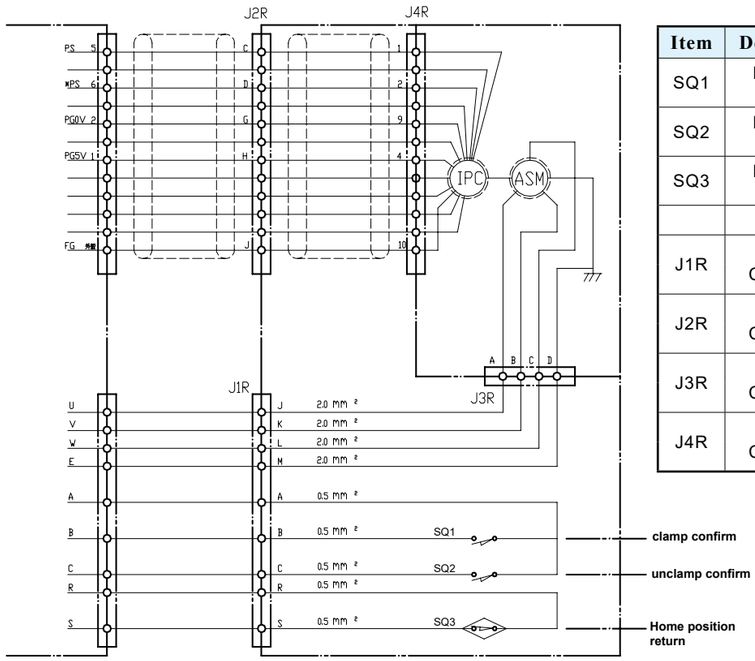
◎ Operation Mode

Machine Coordination	Current axis coordination degree	**JOG**	Press JOG button and press A+ or A- to execute jog rotation
Feed rate	Current axis rotation speed (mm/min)	**HOME**	Under this module, press A+,A- to execute home position returned
G00	G00 Percentage setting (rapid feed)	**A+**	Rotary/Indexing table Clockwise jogging.
G01	G01 Percentage setting (cutting feed)	**A-**	Rotary/Indexing table Counter-Clockwise jogging.
MPG	Enable to operate Portable Electric Handwheel	**AUTO**	Execute automatic machining programs
Clamp	Rotary/Indexing Table clamping	**MPG Simulation**	For trial processing.
Unclamp	Rotary/Indexing Table unclamping	**Single Block**	G code execution is paused after one block is finished.

Wiring Diagram







Item	Description	Specification	Brand
SQ1	Proximity Switch	E2E2-X3D1 NO	OMRON
SQ2	Proximity Switch	E2E2-X3D1 NO	OMRON
SQ3	Proximity Switch	E2E2-X3D2 NC	OMRON
J1R	MS Connector	MS3102A28-11P	JAF
		MS3108A28-11S	JAF
J2R	MS Connector	MS3102A20-29P	JAF
		MS3108A20-29S	JAF
J3R	MS Connector	MS3102A18-10P	JAF
		MS3108A18-10S	JAF
J4R	MS Connector	CM10-R10P-D	JAF
		CM10-SP10S-M	JAF

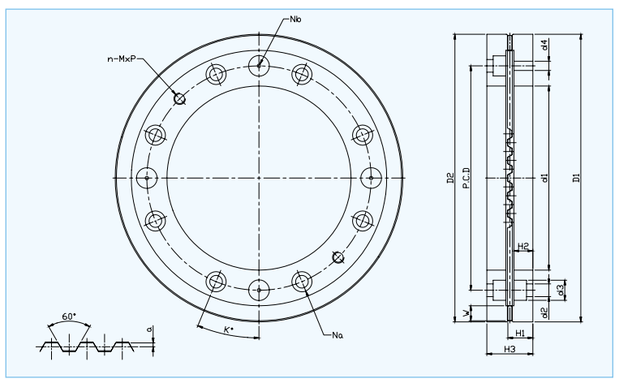
Hirth Coupling Gear

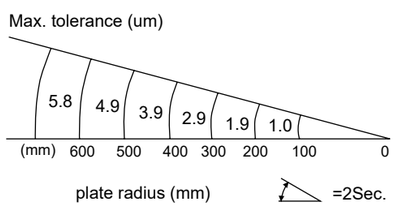
2 Piece Hirth Couplings

Made of high quality materials that ensure rigidity and durability. Precision hardened and ground for a guaranteed tooth spacing accuracy of +/- 2 seconds of arc. All pieces are interchangeable with each other.

*Custom sizes upon request

Model No.	Teeth	Out Diameter	Out Diameter	In Diameter	Teeth Profile	Teeth Thickness	Teeth Thickness	Thickness	Mounting screws					Dowel pin holes				Extractor screws			Pitch of top end
									Number	P.C.D.	Diameter	Top Diameter	Hole depth	Number	P.C.D.	Hole angle	Diameter	Number	P.C.D.	Specification of the teen	
	TN	D1	D2	d1	W	H1	H2	H3	Na	P.C.D.	d2	d3	dn	Nb	P.C.D.	K°	d4	n	P.C.D.	MxP	a
24-120060 HV	24	120	118	60	8	18.30	14.0	34	6	80	6.6	11.0	6.0	1	80	30°	8	2	80	M8X1.25	1.3
40-140080 HV	40	140	138	80	12	18.37	14.0	34	6	100	6.6	11.0	6.0	3	100	30°	8	2	100	M8X1.25	1.37
24-180120 HV	24	180	178	120	10	21.61	16.5	40	8	140	9.0	14.0	8.0	3	140	22.5°	8	2	140	M8X1.25	1.61
24-200120 HV	24	200	198	120	10	21.63	16.5	40	8	150	9.0	14.0	8.0	3	150	22.5°	8	2	150	M8X1.25	1.63
72-200120 HV	72	200	198	120	10	20.99	16.5	40	8	150	9.0	14.0	8.0	3	150	22.5°	8	2	150	M8X1.25	0.99
24-250160 HV	24	250	248	160	11	21.42	16.5	40	8	195	11.0	17.5	10.0	3	195	22.5°	10	2	195	M10X1.50	1.42
72-250160 HV	72	250	248	160	12	21.42	16.5	40	8	195	11.0	17.5	10.0	3	195	22.5°	10	2	195	M10X1.50	1.42
360-250160 HV	360	250	248	160	7	20.30	16.5	40	8	195	11.0	17.5	10.0	3	195	22.5°	10	2	195	M10X1.50	0.3
72-320210 HV	72	320	318	210	12	30.74	25.5	58	12	258	13.0	20.0	12.0	3	258	15°	12	4	258	M12X1.75	1.74
360-320210 HV	360	320	318	210	8	29.35	25.5	58	12	258	13.0	20.0	12.0	3	258	15°	12	4	258	M12X1.75	0.85
72-360250 HV	72	360	358	250	12	30.37	26.0	58	12	300	13.0	20.0	12.0	3	300	15°	12	4	300	M12X1.75	1.37
360-360250 HV	360	360	358	250	10	29.39	26.0	58	12	300	13.0	20.0	12.0	3	300	15°	12	4	300	M12X1.75	0.39
72-400280 HV	72	400	398	280	14	31.52	26.0	60	12	335	13.0	20.0	12.0	3	335	15°	12	4	335	M12X1.75	1.52
360-400280 HV	360	400	398	280	13	30.45	25.0	60	12	335	13.0	20.0	12.0	3	335	15°	12	4	335	M12X1.75	0.45
72-420320 HV	72	420	418	320	14	31.59	26.0	60	12	360	13.0	20.0	12.0	3	360	15°	12	4	360	M12X1.75	1.59
360-420320 HV	360	420	418	320	13	30.45	26.0	60	12	360	13.0	20.0	12.0	3	360	15°	12	4	360	M12X1.75	0.45
72-520415 HV	72	520	518	415	16	31.97	26.0	60	12	450	13.0	20.0	12.0	3	450	15°	12	2	450	M12X1.75	1.97
360-520415 HV	360	520	518	415	16	30.57	26.0	60	12	450	13.0	20.0	12.0	3	450	15°	12	2	450	M12X1.75	0.57
72-600480 HV	72	600	598	480	20	37.28	29.0	70	12	530	17.0	26.0	16.0	3	530	15°	12	4	530	M12X1.75	2.28
360-600480 HV	360	600	598	480	16	35.66	29.0	70	12	530	17.0	26.0	16.0	3	530	15°	12	4	530	M12X1.75	0.66
72-800660 HV	72	800	798	660	19	39.20	32.0	75	18	710	17.0	26.0	16.0	3	710	10°	14	4	710	M12X1.75	1.70
360-800660 HV	360	800	798	660	19	38.26	32.0	75	18	710	17.0	26.0	16.0	3	710	10°	14	4	710	M12X1.75	1.95
72-900740 HV	72	900	898	740	21	41.70	34.5	80	18	800	17.0	26.0	16.0	3	800	10°	14	4	800	M12X1.75	2.20
360-900740 HV	360	900	898	740	21	40.98	34.5	80	18	800	17.0	26.0	16.0	3	800	10°	14	4	800	M12X1.75	0.98





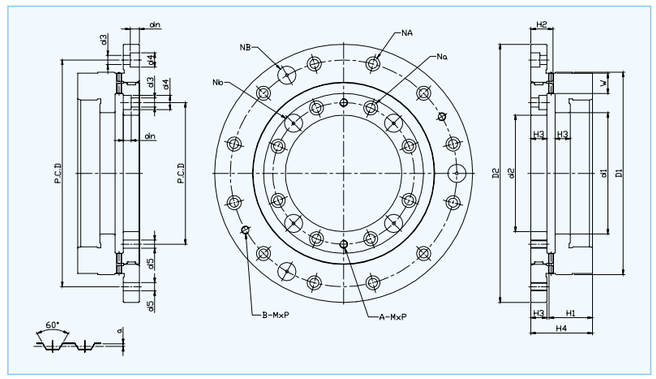
Hirth Coupling Gear

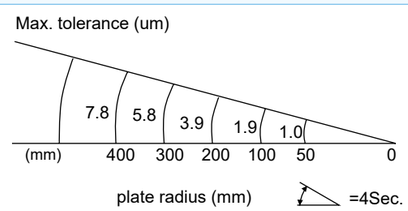
3 Piece Hrith Couplings

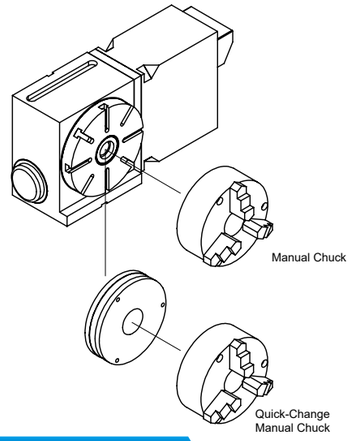
Made of high quality materials that ensure rigidity and durability. Precision hardened and ground for a guaranteed tooth spacing accuracy of +/- 4 seconds of arc. All pieces are interchangeable with each other.

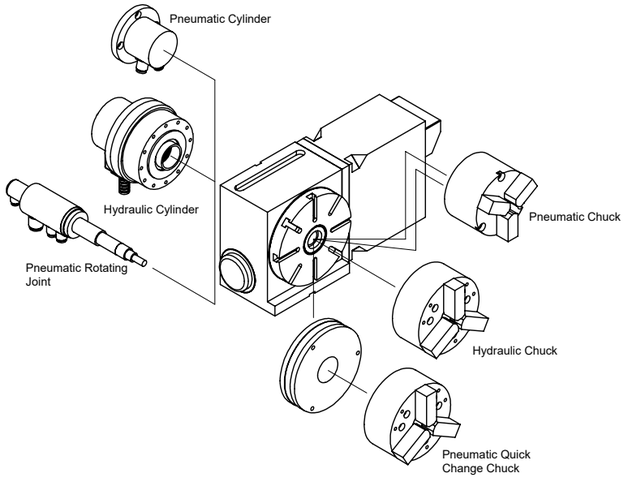
*Custom sizes upon request

Model No.		Teeth	Teeth Profile	Out Diameter	In Diameter	Out Diameter	In Diameter	Teeth Thickness	Teeth Thickness	Thickness	Total Thickness	Pitch of top end	Mounting screws					Dowel pin holes		Extractor screws	
													P.C.D	Number	Diameter	Top Diameter	Hole depth	Diameter	Number	Number	Specification of the teen
		TN	W	D1	d1	D2	d2	H1	H2	H3	H4	a	NA Na	NA Na	d3	d4	dn	d5	NB Nb	A B	MxP
24-170069	AB	24	16.5	-	-	170	69	-	18	12	57	2	150 88	8 8	7	11	7	8	4 4	2 2	M6xP1.0
	C	24	16.5	158	95	-	-	43	-	14		2	-	-	-	-	-	-	-	-	-
24-226100	AB	24	16.5	-	-	226	100	-	22	16	67	2	204 120	8 8	9	14	9	12	4 4	2 2	M8xP1.25
	C	24	16.5	176	100	-	-	45	-	15		2	-	-	-	-	-	-	-	-	-
24-255115	AB	24	20	-	-	255	115	-	22	16	61	2	224 140	12 8	9	14	9	12	3 4	2 4	M8xP1.25
	C	24	20	200	120	-	-	43	-	15		2	-	-	-	-	-	-	-	-	-
72-340160	AB	72	24	-	-	340	160	-	24.5	18	74	2	300 200	12 8	11	17.5	11	12	4 4	2 2	M10xP1.5
	C	72	24	274	165	-	-	53.5	-	19		2	-	-	-	-	-	-	-	-	-
72-420230	AB	72	22	-	-	420	230	-	28	21	76	2	380 270	12 12	14	20	13	12	4 4	2 2	M12xP1.75
	C	72	22	346	200	-	-	52	-	19		2	-	-	-	-	-	-	-	-	-
72-630390	AB	72	31.5	-	-	630	390	-	37	30	98	2	570 430	12 12	18	26	17.5	15	4 4	2 2	M16xP2.0
	C	72	31.5	527	260	-	-	65	-	25		2	-	-	-	-	-	-	-	-	-









Manual Chuck

Manual Chuck			Suitable model			
Model	Size	Sub Plate	TRT	NCT	HC	CT-V
SC-5	5”	◎		NCT-125		
SK-6	6”	◎	TRT-170	NCT-170		
SK-7	7”	◎		NCT-200	HC-200	CT-200V
SK-8	8”	◎	TRT-250	NCT-250	HC-250	CT-250V
SK-10	10”	◎	TRT-320	NCT-(B)-320	HC-320	CT-320V
SK-12	12”	◎	TRT-450	NCT-(B)-400 NCT-B-500	HC-400 HC-500	
SK-16	16”	◎	TRT-450	NCT-(B)-400 NCT-B-500	HC-400 HC-500	
SK-20	20”	◎	TRT-450	NCT-(B)-400 NCT-B-500 NCT-B-630	HC-400 HC-500	
SK-25	25”			NCT-B-630 NCT-B-800		

PHC
(Air over Oil intensifier)
Pneumatic source 5~8 bar
Solenoid valve DC24V or
AC 110V/220V

Hydraulic unit
1HP x 4P, 12 liter / min, 40L
2HP x 4P, 30 liter / min, 70L

Quick Change Chuck

Oil Manifold

Servomotor
(FANUC, MITSUBISHI.....)

Servo motor selection chart

FANUC	α2 / 5000i	α4 / 5000i	α8 / 3000i	α12 / 3000i	α22 / 3000i	α30 / 3000i
	α2 / 5000is	α4 / 5000is	α8 / 4000is	α12 / 4000is	α22 / 4000is	α30 / 4000is
	β4 / 4000is	β8 / 3000is	β12 / 3000is	β22 / 3000is	β30 / 2000is	X
MITSUBISHI	HG-105T	HG-54T	HG-104S	HG-204S	HG-354S	HG-453S
	HF-105T	HF-54T	HF-104S	HF-204S	HF-354S	HF-453S
	HG-SR52J	HG-SR102J	HG-SR152J	HG-SR202J	HG-SR352J	HG-SR502J
SIEMENS	1FT6034	1FT6062	1FT6064	1FT6082	1FT6084 / 6102	1FT6086
	1FK7042	1FK7060	1FK7063	1FK7083	1FK7101 / 7103	1FK7103
HEIDENHAIN	QSY96G	QSY116C	QSY116J	QSY155B	QSY155D	QSY155F
FAGOR	FKM22	FKM42	FKM44	FKM64	FKM66	X
YASKAWA	SGMJV-08ADA6S	SGMGV-13ADA6S	SGMGV-20ADA6S	SGMGV-30ADA2S	SGMGV-44ADA2S	SGMGV-55ADA2S
	SGM7J-08A7C6S	SGM7G-13A7C6S	SGM7G-20A7C6S	SGM7G-30A7C2S	SGM7G-44A7C2S	SGM7G-55A7C2S

※ If you have any other requirement, please contact us to get detail information.

Connector selection chart

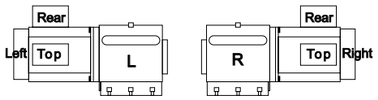
Motor	axes	FANUC		Mitsubishi	
		Male connector	Female connector	Male connector	Female connector
Power Cable	Rotary axis	MS3102A28-11P	MS3108A28-11S	MS3102A28-11P	MS3108A28-11S
	Tilting axis	MS3102A28-11PZ	MS3108A28-11SZ	MS3102A28-11PZ	MS3108A28-11SZ
Signal Cable	Rotary axis	MS3102A20-29PW	MS3108A20-29SW	MS3102A22-14P	MS3108A22-14S
	Tilting axis	MS3102A20-29PZ	MS3108A20-29SZ	MS3102A22-14PZ	MS3108A22-14SZ

Encoder-Heidenhain

Indexing accuracy	±10”	±5”	±2.5”	±2”	±1”
Incremental Encoder	ERN180	RON225 RON275 RON285	RON287	RON786	RON886
Absolute Encoder	ECN2190F ECN2110	RCN2380 RCN2390F RCN5380 RCN5390F	RCN2580 RCN2590F RCN5580 RCN5590F	RCN8380 RCN8390F	RCN8580 RCN8590F

※Other requirement, please contact us.

Selection form of Rotary Table / Indexing Table

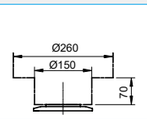
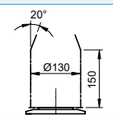
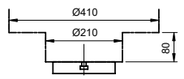
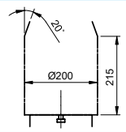
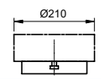
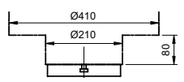
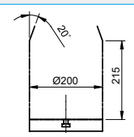
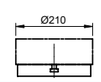
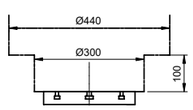
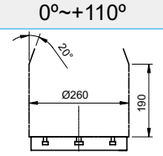
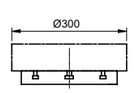
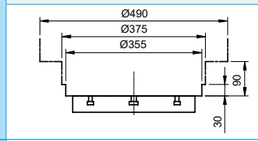
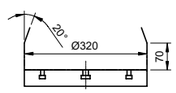
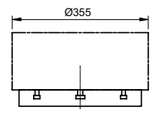
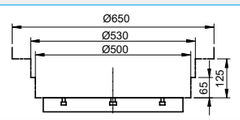
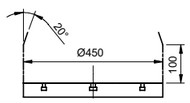
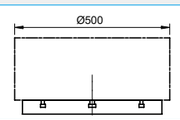
Machine Specification	Brand		Model	
	Controller	☐ Fanuc ☐ Mitsubishi ☐ Siemens ☐ Heidenhain ☐ Fagor ☐ Other		
	Driver and cable for 4th axis	Driver prepared ☐ Yes ☐ No	☐ Cable prepared (Electric cabinet to connector)	☐ Software and PLC for 4th Axis
Dimension of woking table	Dimension : T - slot : Width mm * Pitch mm * Number			
Rotary Table / Indexing Table	Model of Rotary Table : _____			
	Model of Indexing Table : _____	Minimum input increment : ☐ 1° / ☐ 5°		
Motor mounting position	☐ Right (R) ☐ Left (L) ☐ Back (RB)			
Position of cable connection	☐ Right	☐ Back	☐ Up	☐ Left
				
Model of Servomotor (Optional)	Fanuc	Mitsubishi	Siemens	Other_____
	☐ Straight Shaft ☐ Taper Shaft	☐ Straight Shaft ☐ Taper Shaft	☐ Straight Shaft ☐ Taper Shaft	☐ Straight Shaft ☐ Taper Shaft
Model of Driver (Optional)	Fanuc	Mitsubishi	Siemens	Other_____
Connector of Power and Signal Cable	☐ Standard Connector (Japanese Standard)	☐ Adherent connector (Euro Standard)	☐ Direct connect without connector	
Tailstock (Optional)	☐ Manual Tailstock MTS	☐ Hydraulic Auto Tailstock ATS	☐ Pneumatic Auto Tailstock ATS	
	☐ Support Tailstock with Hydraulic clamping BTS	☐ Support Tailstock with Pneumatic clamping BTS		
Power of PHC (Optional)	☐ AC220V	☐ AC110V	☐ DC24V	
Hydraulic Unit (Optional)	☐ 1HPx4P, 12L/min, 40L Single circuit solenoid valve for NCT only	☐ 2HPx4P, 30L/min, 70L Double circuit solenoid valve for HC only	☐ Other_____	
Other accessories (Optional)	☐ Chuck	☐ Pneumatic Chuck, Model: ☐ Manual Chuck, Model: ☐ Hydraulic Chuck, Model:		
	☐ Oil manifold	Specification: Input / Output		
	☐ DNS Controller Power 220V/3PH	Model:		
Language of operation manual	☐ Chinese	☐ English	☐ Other_____	

Selection form of Tilting Rotary Table (5th AXIS)

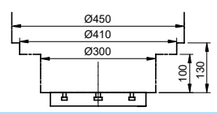
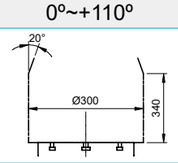
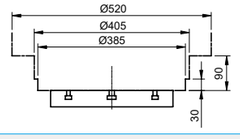
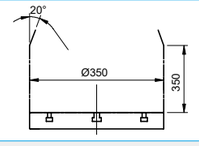
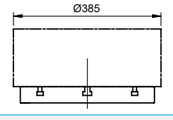
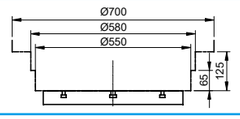
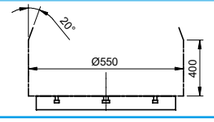
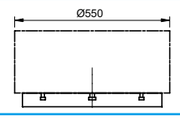
Machine Specification	Brand		Model	
	Controller	☐ Fanuc ☐ Mitsubishi ☐ Siemens ☐ Heidenhain ☐ Fagor ☐ Other		
	Drivers and cables for 4th / 5th axis	Driver prepared ☐ Yes ☐ No	☐ Cables prepared (Electric cabinet to connectors)	☐ Software and PLC for 4TH and 5th Axis
Dimension of woking table	Dimension : T - slot : Width mm * Pitch mm * Number :			
Tilting Rotary Table	☐ TRT-100 ☐ TRT-170 ☐ TRT-200 ☐ TRT-250 ☐ TRT-320 ☐ TRT-450 ☐ TRT-TN			
Position	☐ Parallel with X Axis ☐ Parallel with Y Axis			
Position of cable connection	☐ Right	☐ Back	☐ Up	☐ Left
Model of Servomotor on Rotary Axis (Optional)	Fanuc	Mitsubishi	Siemens	Other_____
	☐ Straight Shaft ☐ Taper Shaft	☐ Straight Shaft ☐ Taper Shaft	☐ Straight Shaft ☐ Taper Shaft	☐ Straight Shaft ☐ Taper Shaft
Model of Driver for Rotary Axis (Optional)	Fanuc	Mitsubishi	Siemens	Other_____
Model of Servomotor on Tilting Axis (Optional)	Fanuc	Mitsubishi	Siemens	Other_____
	☐ Straight Shaft ☐ Taper Shaft	☐ Straight Shaft ☐ Taper Shaft	☐ Straight Shaft ☐ Taper Shaft	☐ Straight Shaft ☐ Taper Shaft
Model of Driver for Tilting Axis (Optional)	Fanuc	Mitsubishi	Siemens	Other_____
Connector of Power and Signal Cable	☐ Standard Connector (Japanese Standard)	☐ Adherent connector (Euro Standard)	☐ Direct connect without connector	
Tailstock (Optional)	☐ Manual Tailstock MTS	☐ Hydraulic Auto Tailstock ATS	☐ Pneumatic Auto Tailstock ATS	
Power of PHC (Optional)	2 set Power : ☐ AC220V ☐ AC110V ☐ DC24V			
Hydraulic Unit (Optional)	☐ 1HPx4P, 12L/min, 40L Single circuit solenoid valve	Other_____		
Other accessories (Optional)	☐ Chuck	☐ Pneumatic Manual Chuck, Model: ☐ Manual Chuck, Model: ☐ Hydraulic Chuck, Model:		
	☐ DNS Controller Power 220V/3PH	Model:		
Language of operation manual	☐ Chinese	☐ English	☐ Other_____	

Working Range

TRT Series

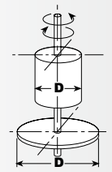
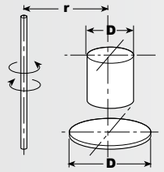
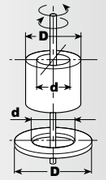
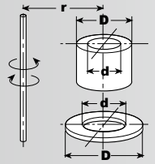
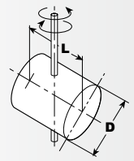
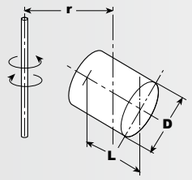
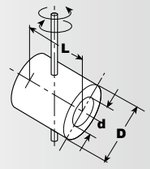
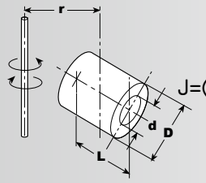
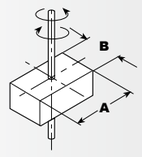
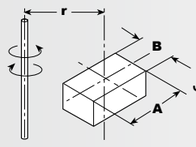
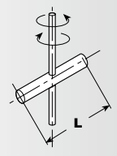
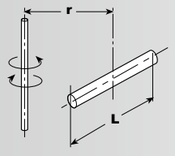
TRT-100	0º~+90º	0º~+110º	-20º~0º
			
TRT-170	0º~+90º	0º~+110º	-30º~0º
			
TRT-200	0º~+90º	0º~+110º	-30º~0º
			
TRT-250	0º~+90º	0º~+110º	-30º~0º
			
TRT-320	0º~+90º	0º~+110º	-30º~0º
			
TRT-450	0º~+90º	0º~+110º	-30º~0º
			

ERT Series

ERT-250	0º~+90º	0º~+110º	-20º~0º
			
ERT-350	0º~+90º	0º~+110º	-20º~0º
			
ERT-500	0º~+90º	0º~+110º	-20º~0º
			

Reference Data of Technological Information

Calculation Instant Inertia Formula

	$J=\frac{D^2}{8} \times m$
	$J=(\frac{D^2}{8}+r^2)\times m$
	$J=\frac{D^2+d^2}{8} \times m$
	$J=(\frac{D^2+d^2}{8}+r^2)\times m$
	$J=(\frac{L^2}{12}+\frac{D^2}{16}) \times m$
	$J=(\frac{L^2}{12}+\frac{D^2}{16}+r^2) \times m$
	$J=(\frac{L^2}{12}+\frac{D^2+d^2}{16}) \times m$
	$J=(\frac{L^2}{12}+\frac{D^2+d^2}{16}+r^2)\times m$
	$J=\frac{A^2+B^2}{12} \times m$
	$J=(\frac{A^2+B^2}{12}+r^2)\times m$
	$J=\frac{L^2}{12} \times m$
	$J=(\frac{L^2}{12}+r^2)\times m$

Unit for Calculation

$J = WR^2 = kg \cdot m^2$
m = kg
A,B,D,L,d,r = m(meter)

Materials specification Gravity (S)

Cast Copper : 2.71
Steel Material : 7.8
Cast Iron : 7.2
Aluminum : 8.94