

KOMA



TSUDAKOMA

ROTARY TABLE CATALOG

NC 4th Axis Rotary Tables • NC Tilting 5th Axis Rotary Tables • Indexers • Options & Accessories

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At Koma Precision we serve our customers by supplying proven, powerful machine tool attachments and accessories. Our aim is to provide solutions for you through products that are flawless in execution, speed and strength.

With over 37 years of experience and 35,000 installations we remain the exclusive importer, national distributor and service center for Tsudakoma rotary tables.



BALL DRIVE SYSTEM



ZERO BACKLASH



NO REVERSAL ERROR



HIGH ACCURACY MACHINING



ZERO MAINTENANCE



INDEX SPEEDS UP TO 138.9 RPM

THE TSUDAKOMA DUAL LEAD GEARING SYSTEM

THE TSUDAKOMA DUAL LEAD GEARING SYSTEM DELIVERS THE OPTIMUM BALANCE BETWEEN POWER, DURABILITY, AND SMOOTH CUTTING PERFORMANCE.

Tsudakoma's
Proprietary
Dual Lead
Worm Gearing
System with Full
Depth Gear Tooth
Engagement



TORQUE TRANSFER EFFICIENCY

The Tsudakoma dual lead gearing system features the largest tooth engagement of any rotary table manufacturer. **This system generates up to 85% torque transfer efficiency.**

GEARING MATERIALS

PROPRIETARY HIGH TENSILE STRENGTH BRASS

Worm Wheel Material	Tensile Strength (N/mm ²)	Elongation (%)	Hardness (HB)
Bronze	245	15	70
Phosphor Bronze	295	5	80
Aluminum Bronze	490	20	120
Tsudakoma Proprietary Brass	650	15	170
Worm Spindle	Case hardened alloy steel		

Tsudakoma's dual lead gearing system features exceptionally smooth cutting due to the inherent lubricating properties of the gear materials.



TOOTH PROFILE

Tsudakoma utilizes full tooth depth engagement along with a larger gear module. The results are a larger surface contact area yielding a substantially stronger worm gear system.

Conventional tooth profile



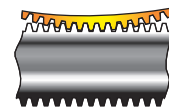
Tsudakoma tooth profile



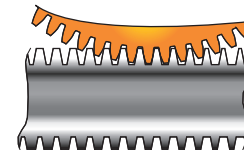
OVERSIZE WORM WHEEL

The Tsudakoma worm wheel uses an oversize diameter pitch circle resulting in reduced pressure on the contact surface compared to a conventional gearing system.

Conventional gearing



Tsudakoma gearing



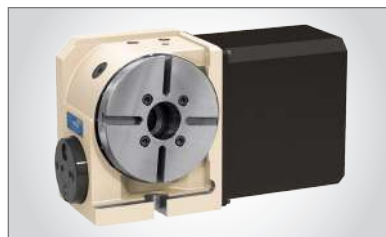
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RBS



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RWE



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RWA



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**RWA,B
RNCV,B**



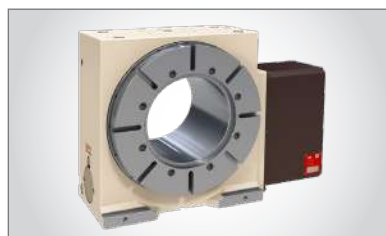
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RWB



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RCB



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RNCM



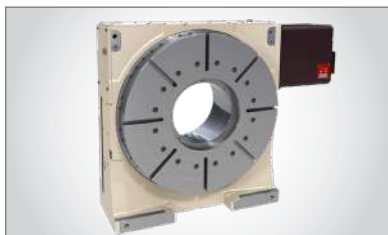
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**RN
RWM**



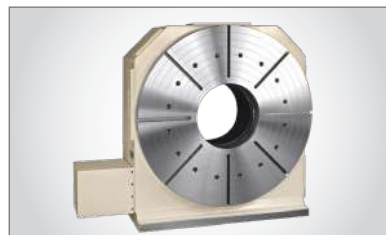
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**RWE
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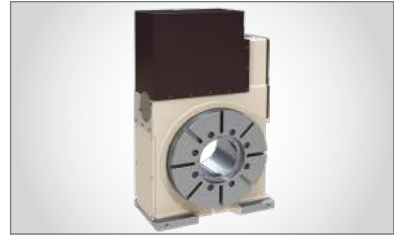


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Tsudakoma's tilting tables offer a truly compact footprint to maximize CNC work envelope. Maximum Rigidity on the tilting axis is essential and is achieved by keeping the large braking system as close to the rotary axis as possible.

For high production 4th & 5th axis machining, Tsudakoma's multi-spindle tilting tables offer a compact footprint to maximize CNC work envelope. Automatic 5C collet outputs optional.

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Spindles**



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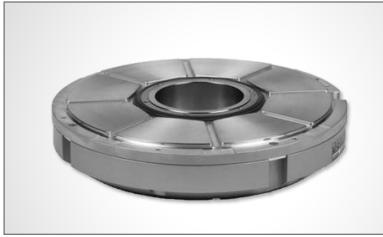
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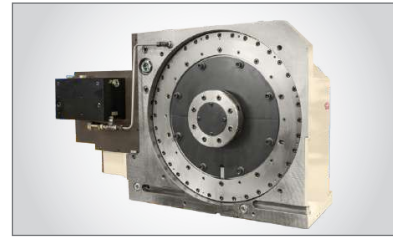
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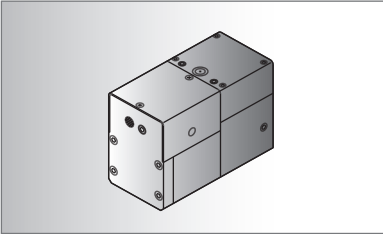
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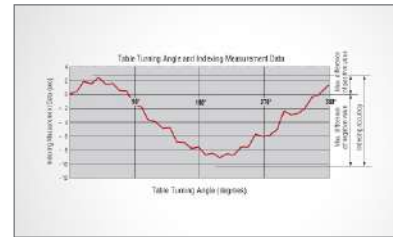
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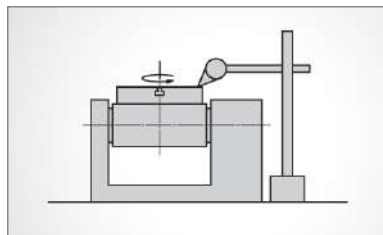
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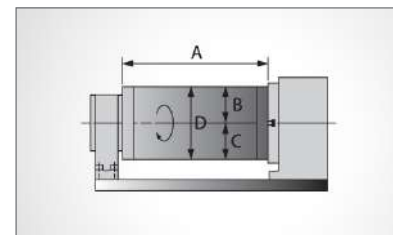
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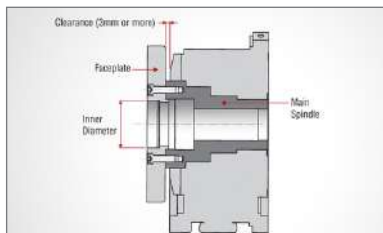
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RBS-160, 250, 320

ZERO MAINTENANCE • HIGH TORQUE TRANSFER EFFICIENCY

KOMAPrecision, Inc. introduces a new line of high accuracy, high rigidity, energy saving and zero maintenance rotary tables from Tsudakoma. The RBS Series rotary tables are built using the new ball drive system featuring advantages like zero backlash, improved cycle times, energy conservation and a lifetime adjustment-free transmission system.



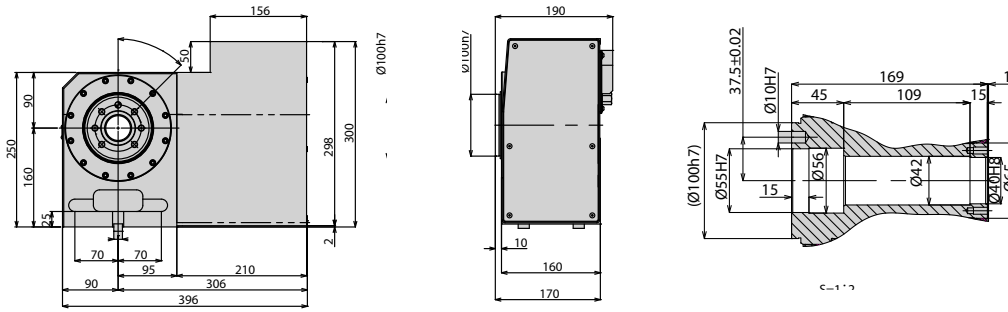
Table Model			RBS-160	RBS-250	RBS-320
Versions available			R, L	R, L	R, L
Table diameter		mm	(160, 200)	250	320
Center height		mm	160	210	255
Center bore	Nose Diameter	mm	55H7	80H7	115H7
	Thru Diameter	mm	40	50	85
Table T-slot width			12H8	12H8	14H8
Guide block width			14h7	18h7	
Servo motor (Fanuc)*			Alpha 4i	Alpha 8i	Alpha 12i
Maximum motor speed		rpm	5,000	4,000	4,000
Speed reduction ratio			1/36	1/36	1/36
Maximum table speed		rpm	138.9	111.1	111.1
Inertia converted into motor shaft		$\times 10^{-3}\text{kg}\cdot\text{m}^2$	.19	.42	2.24
Clamp system**			Pneumatic		
Clamp torque @72psi		Nm (ft. lbs.)	700 (516)	1,480 (1,076)	2,580 (1,901)
Indexing accuracy		arc sec.	± 7.5		
Net Weight		kg (lbs.)	55 (121.2)	100 (220)	200 (440)
Allowable work inertia		$\text{kg}\cdot\text{m}^2$	0.64	1.95	4.48
Allowable work weight [w/ tailstock]		kg (lbs)	100 (220) [200 (441)]	125 (275) [250 (551)]	175 (385) [350 (771)]
		kg (lbs)	200 (441)	250 (551)	350 (771)
Allowable load when table clamped		N (lbf)	10,800 (7,965)	14,400 (10,620)	24,800 (18,291)
		Nm (ft. lbs.)	500 (368)	1,000 (737)	1,500 (1,106)
		Nm (ft. lbs.)	780 (575)	1,900 (1,401)	4,700 (3,466)

*Other motors & rpm available • Dimensions = mm
Specifications subject to change without notice

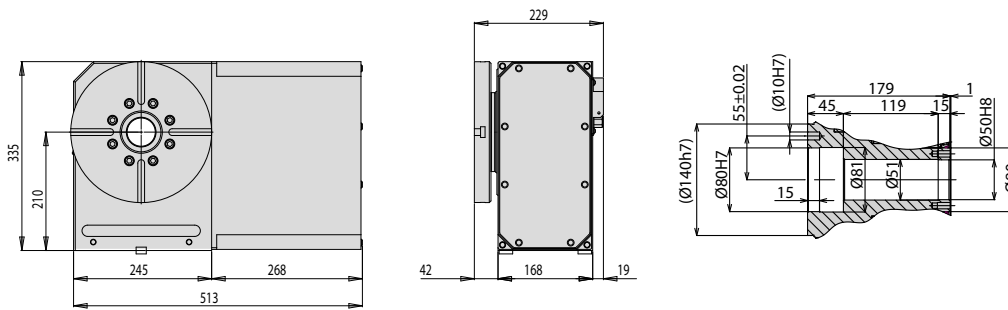
Dimensions

Drawings not to scale • Dimensions = mm

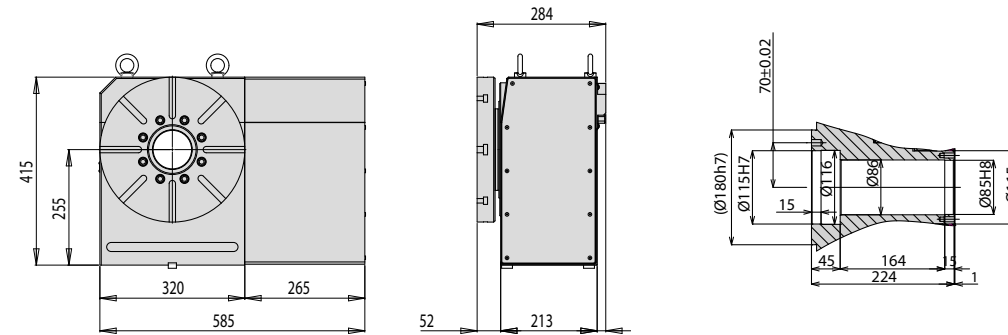
RBS-160



RBS-250



RBS-320



The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).



RBS-160R with optional faceplate



RBS-160R with 6" 3-Jaw Scroll Chuck

Clamping Block and Bolt

Dimensions = mm

	Type	Q'ty	T-Slot Width	A	B	C	D	E	F	G	H	I	J	K	L	M
RBS-160	-	2	14	-	-	-	-	-	-	-	17	8	60	-	23	12
RBS-250	I	4	18	25	12	80	12	33	35	22	21	11	65	40	28	16
RBS-320	I	4	18	30	15	90	16	31	43	25	21	11	70	46	28	16

Options & Accessories

TPC NC Controller	p.64
Chucks	p.77
Tailstock	p.78
Support Spindle	p.80
Face Plate	p.80
Encoder / Scale	p.81
Pull Stud Device	p.82
Rotary Joint	p.82
Booster	p.83
PVC or Steel Cables	p.84

RWE-160, 200**COMPACT • MASSIVE CLAMP TORQUE**

The RWE Series tables' offer speeds of 69.4 RPM and indexing accuracies ranging from 10 to 12.5 arc seconds. These compact, high-speed, high-quality RWE Series tables offer economy line pricing while retaining high clamp torque and increased production performance.

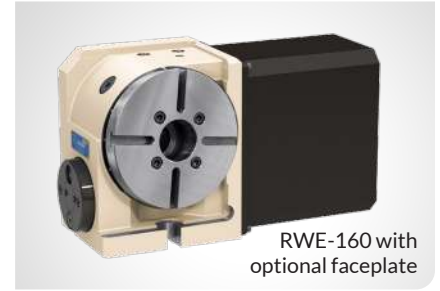


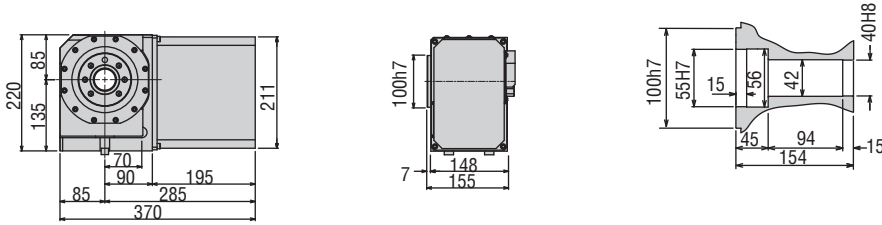
Table Model		RWE-160	RWE-200
Versions available		R, L	R, L
Spindle outer diameter	mm	100h7	120h7
Table diameter (optional)	mm	(160, 200)	(200, 250)
Center height	mm	135	160
Center bore	Nose Diameter	mm	55H7
	Thru Diameter	mm	40
Table T-slot width (with faceplate)		(12H8)	(12H8)
Guide block width		14h7	18h7
Servo motor*		Alpha 2i	Alpha 4i
Maximum motor speed	rpm	5,000	5,000
Speed reduction ratio		1/72	1/72
Maximum table speed	rpm	69.4	69.4
Inertia converted into motor shaft	$\times 10^{-3}\text{kg}\cdot\text{m}^2$	.09	.17
Clamp system		Pneumatic Disc Clamp	
Clamp torque @72psi	Nm (ft. lbs.)	250 (180)	400 (295)
Indexing accuracy	arc sec.	± 12.5	± 10
Net Weight	kg (lbs.)	40 (88)	61 (135)
Allowable wheel torque	Nm (ft. lbs.)	206 (152)	288 (212)
Allowable work inertia	$\text{kg}\cdot\text{m}^2$	.64	1.25
Allowable work weight [with tail-stock]	 kg (lbs)	100 (220) [200 (441)]	125 (275) [250 (551)]
	 kg (lbs)	220/440	250/550
Allowable load when table clamped	 Nm (lbf)	10,800 (7,960)	14,400 (10,613)
	 Nm (ft. lbs.)	500 (369)	800 (590)
	 Nm (ft. lbs.)	780 (575)	1,900 (1,400)

* Other motors & RPM available
Specifications subject to change without notice

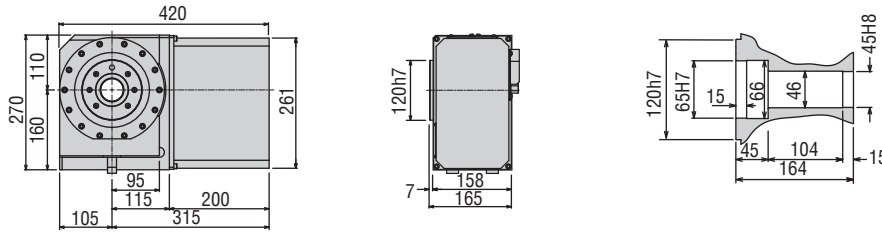
Dimensions

Drawings not to scale • Dimensions = mm

RWE-160



RWE-200



The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

RWE-200 with optional 5C Collet Chuck



Options & Accessories

TPC NC Controller	p.64
Chucks	p.77
Tailstock	p.78
Support Spindle	p.80
Face Plate	p.80
Encoder / Scale	p.81
Pull Stud Device	p.82
Rotary Joint	p.82
Booster	p.83
PVC or Steel Cables	p.84

Clamping Block and Bolt

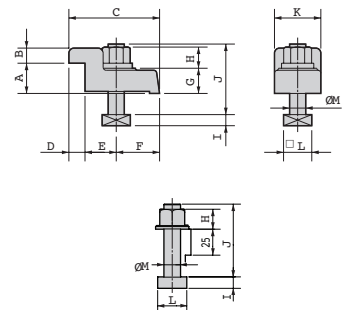
Dimensions = mm

	Type	Q'ty	T-Slot Width	A	B	C	D	E	F	G	H	I	J	K	L	M
RWE-160	-	2	14	-	-	-	-	-	-	-	17	8	60	-	23	12
RWE-200	-	2	18	-	-	-	-	-	-	-	21	11	65	-	28	16

Note 1: When using a machine with a T-slot other than the above, use suitable clamping blocks and bolts that are available on the market, or order custom-made ones from KOMA (opt.)

Note 2: Clamping blocks are not included in RWE-160 and RWE-200.

Type I



RN-100 | RWA-160, 200, 250, 320

COMPACT • MASSIVE CLAMP TORQUE

The compact, high speed RN-100 is especially suited for drilling and tapping machines. RWA-Series tables utilize a patent pending dual taper pneumatic clamping system which generates massive clamp torque - up to 300% greater than previous RN-Series rotary tables. RWA-Series tables feature a full range of options including rotary scales and hydraulic or pneumatic rotary joints.



RWA-200R

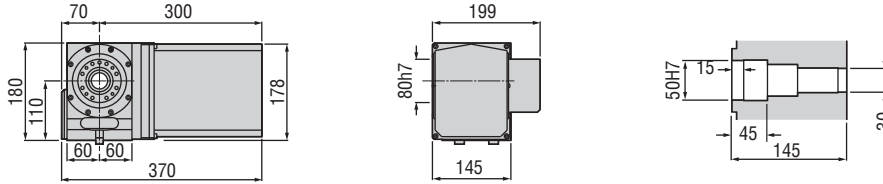
Table Model			RN-100	RWA-160	RWA-200	RWA-250 (S)	RWA-320 (S)
Versions available			R, L	R, L	R, L	R, L	R, L
Spindle outer diameter	Mm		80h7	100h7	120h7	140h7	180h7
Table diameter (optional)	Mm		(135)	(160, 200)	(200, 250)	250	320
Center height	Mm		110	135	160	160	210
Center bore	Nose Diameter	mm	50H7	55H7	65H7	80H7	110H7
	Thru Diameter	mm	30	40	45	50	85
Table T-slot width (with face plate)			(10H8)	(12H8)	(12H8)	12H8	14H7
Guide block width			14h7	14h7	18h7	18h7	18h7
Servo motor (Fanuc)*			Alpha 2i	Alpha 2i	Alpha 4i	Alpha 8i (8is)	Alpha 8i (22is)
Maximum motor speed	rpm		5,000	5,000	5,000	4,000 (4,000)	4,000 (3,000)
Speed reduction ratio			1/36	1/72	1/72	1/90 (1/45)	1/120 (1/45)
Maximum table speed	rpm		138.9	69.4	69.4	44.4 (88.8)	33.3 (66.6)
Inertia converted into motor shaft	$\times 10^{-3} \text{kg}\cdot\text{m}^2$		.23	.09	.17	.41 (.44)	.52 (1.66)
Clamp system			Pneumatic		Pneumatic Dual Taper		
Clamp torque @72psi	Nm (ft. lbs.)		80 (59)	500 (369)	800 (590)	1,000 (737)	1,500 (1,106)
Indexing accuracy	arc sec.		± 22.5	± 12.5	± 10	± 10	± 10
Net Weight	kg (lbs.)		28 (62)	38 (84)	61 (134)	80 (176)	145 (319)
Allowable wheel torque	Nm (ft. lbs.)		176 (130)	206 (152)	288 (212)	596 (439)	939 (692)
Allowable work inertia	$\text{kg}\cdot\text{m}^2$		.10	.64	1.25	1.95	4.48
Allowable work weight	 kg (lbs) [w/ tailstock]		25 (55) [50 (110)]	100 (220) [175 (385)]	125 (275) [250 (550)]	125 (275) [250 (550)]	175 (385) [375 (825)]
	 kg (lbs)		50 (110)	200 (440)	250 (550)	250 (550)	350 (770)
Allowable load when table clamped	 N (lbf)		5,880 (1,322)	10,800 (2,427)	14,400 (3,237)	14,400 (3,237)	24,800 (5,575)
	 Nm (ft. lbs.)		80 (59)	500 (369)	800 (590)	1,000 (737)	1,500 (1,106)
	 Nm (ft. lbs.)		156 (115)	780 (575)	1,900 (1,400)	1,900 (1,400)	4,700 (3,464)

* Other motors & RPM available • Dimensions = mm
Specifications subject to change without notice

Dimensions

Drawings not to scale • Dimensions = mm

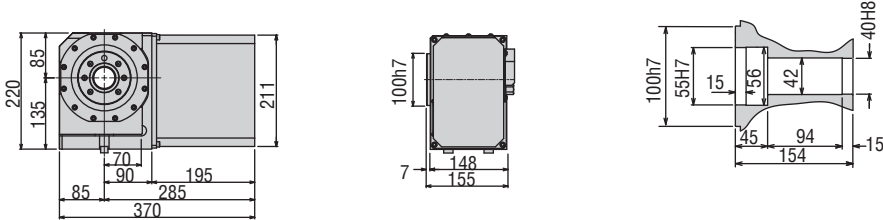
RN-100R



RN-100R



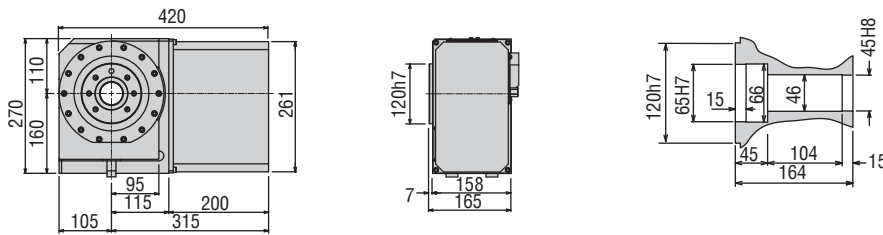
RWA-160R



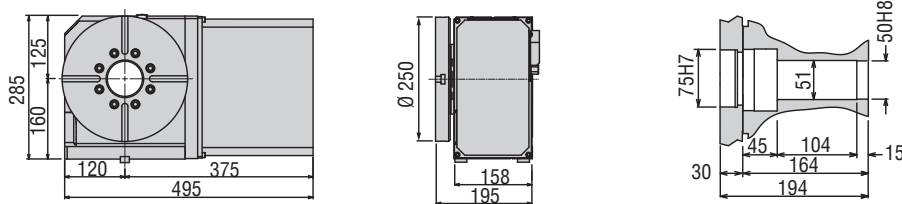
RWA-320



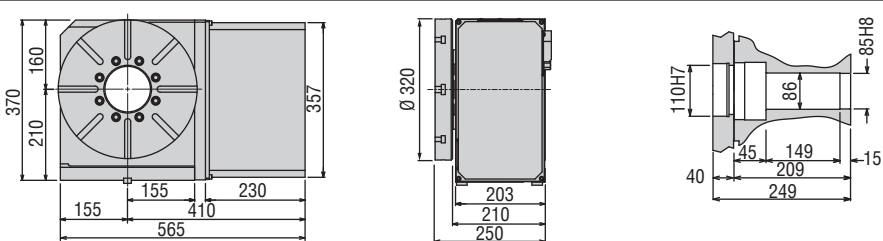
RWA-200R



RWA-250R



RWA-320R



Options & Accessories

TPC NC Controller	p.64
Chucks	p.77
Tailstock	p.78
Support Spindle	p.80
Face Plate	p.80
Encoder / Scale	p.81
Pull Stud Device	p.82
Rotary Joint	p.82
Booster	p.83
PVC or Steel Cables	p.84

The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

Clamping Block and Bolt

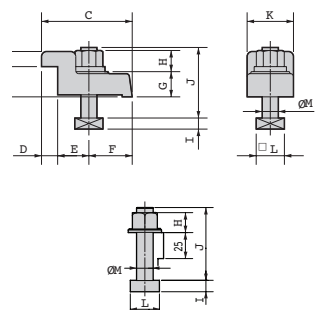
Dimensions = mm

	Type	Q'ty	T-Slot Width	A	B	C	D	E	F	G	H	I	J	K	L	M
RN-100	-	2	14	-	-	-	-	-	-	-	17	8	55	-	23	12
RWA-160	-	2	14	-	-	-	-	-	-	-	17	8	60	-	23	12
RWA-200	-	2	18	-	-	-	-	-	-	-	21	11	65	-	28	16
RWA-250	I	4	18	25	12	80	12	33	35	22	21	11	65	40	28	16
RWA-320	I	4	18	30	15	90	16	31	43	25	21	11	70	46	28	16

Note 1: When using a machine with a T-slot pitch other than the above, use suitable clamping blocks and bolts that are available on the market, or order custom-made ones from KOMA (opt.)

Note 2: Clamping blocks are not included in RN-100, RWA-160 and RWA-200.

Type I



RWA-160, 200, 250, 320R,B | RNCV-401R,B

SUITABLE WHEN Y AXIS INTERFERENCE IS AN ISSUE

The RWA,B-Series tables position the servomotor at the rear of the table casting resulting in a compact footprint. The “B” series tables are suitable when “Y” axis interference is an issue. RWA,B-Series tables utilize a patent pending dual taper pneumatic clamping system which generates massive clamp torque. The RNCV-401R,B features powerful hydraulic clamping.



RWA-250R,B

Table Model			RWA-160R,B	RWA-200R,B	RWA-250R,B	RWA-320R,B	RNCV-401R,B
Spindle outer diameter		mm	100h7	120h7	140h7	180h7	-
Table diameter (optional)		mm	(160, 200)	(200, 250)	250	320	400
Center height		mm	135	160	160	210	255
Center bore	Nose Diameter	mm	55H7	65H7	80H7	115H7	40H7
	Thru Diameter	mm	40	45	50	85	40
Table T-slot width (with face plate)			(12H8)	(12H8)	12H8	14H7	14H7
Guide block width			14h7	18h7			
Servo motor (Fanuc)*			Alpha 2i	Alpha 4i	Alpha 8i	Alpha 8i	Alpha 12i
Maximum motor speed		rpm	5,000	5,000	4,000	4,000	4,000
Speed reduction ratio			1/72	1/72	1/90	1/120	1/180
Maximum table speed		rpm	69.4	69.4	44.4	33.3	22.2
Inertia converted into motor shaft		x 10 ⁻³ kg.m ²	.56	.64	.97	.84	4.01
Clamp system			Pneumatic Dual Taper				Hydraulic
Clamp torque @72psi [500psi]		Nm (ft. lbs.)	500 (369)	800 (590)	1,000 (737)	1,500 (1,106)	[1,746 (1,287)]
Indexing accuracy		arc sec.	±12.5	±10	±10	±10	±7.5
Net Weight		kg (lbs.)	53 (117)	77 (169)	95 (209)	165 (363)	330 (726)
Allowable wheel torque		Nm (ft. lbs.)	206 (152)	288 (212)	596 (439)	939 (692)	1,667 (1,228)
Allowable work inertia		kg.m ²	.64	1.25	1.95	4.48	9.7
Allowable work weight		kg (lbs) [w/ tailstock]	100 (220) [175 (385)]	125 (275) [250 (550)]	125 (275) [250 (550)]	175 (385) [375 (825)]	200 (440) [500 (1,100)]
Allowable load when table clamped		N (lbf)	10,800 (2,419)	14,400 (3,226)	14,400 (3,226)	24,800 (5,555)	39,200 (8,781)
		Nm (ft. lbs.)	500 (369)	800 (590)	1,000 (737)	1,500 (1,106)	1,764 (1,300)
		Nm (ft. lbs.)	780 (575)	1,900 (1,400)	1,900 (1,400)	4,700 (3,464)	2,450 (1,806)

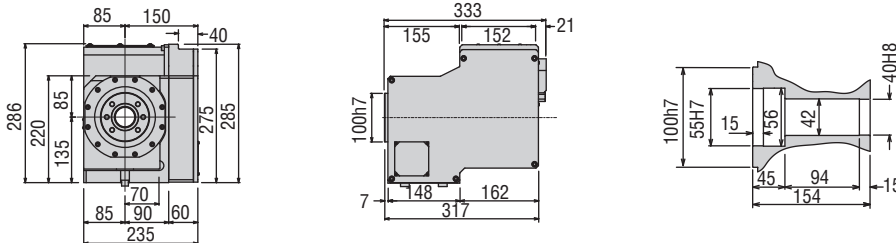
* Other motors & RPM available

Specifications subject to change without notice

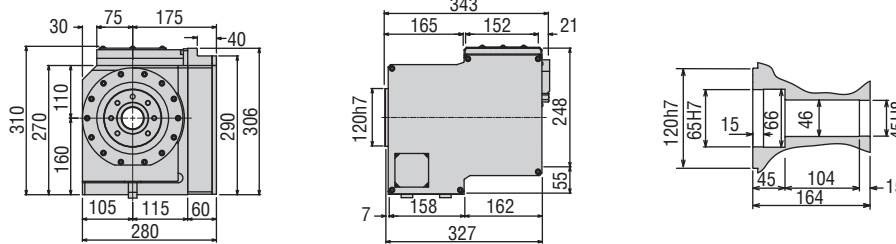
Dimensions

Drawings not to scale • Dimensions = mm

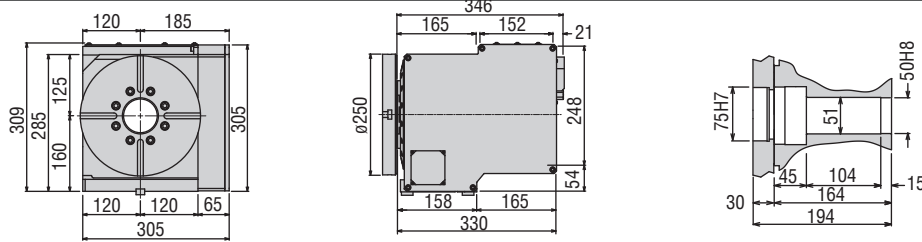
RWA-160R,B



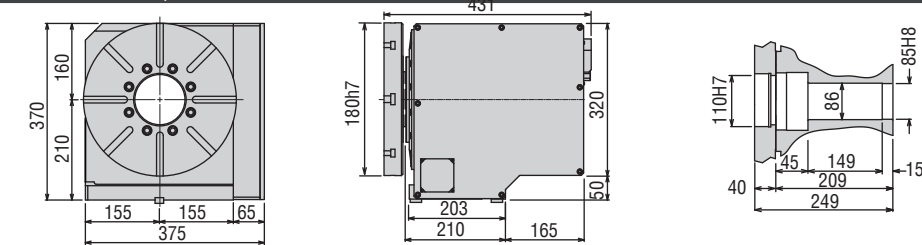
RWA-200R,B



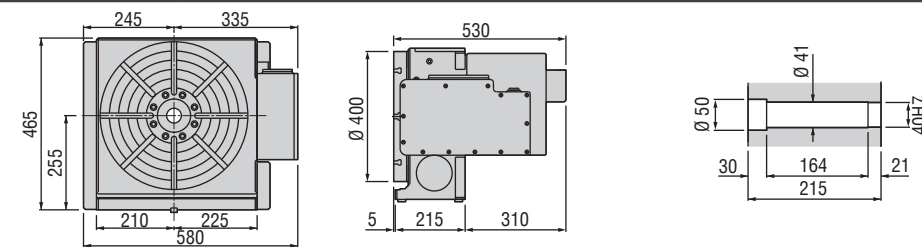
RWA-250R,B



RWA-320R,B



RNCV-401R,B

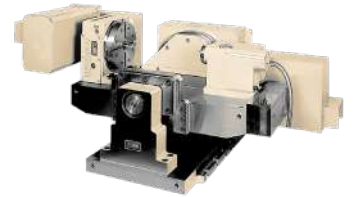


RNCV-401R,B



RT-22

This custom machining system combines (2) RNCV-401 rotary tables with (2) hydraulic tailstocks.



Options & Accessories

TPC NC Controller	p.64
Chucks	p.77
Tailstock	p.78
Support Spindle	p.80
Face Plate	p.80
Encoder / Scale	p.81
Pull Stud Device	p.82
Rotary Joint	p.82
Booster	p.83
PVC or Steel Cables	p.84

The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

Clamping Block and Bolt

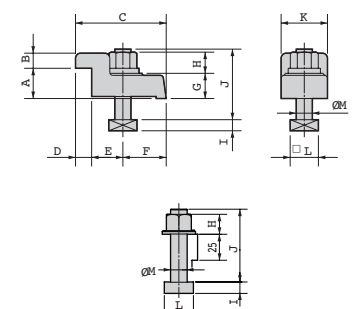
Dimensions = mm

	Type	Q'ty	T-Slot Width	A	B	C	D	E	F	G	H	I	J	K	L	M
RWA-160R,B	-	2	14	-	-	-	-	-	-	-	17	8	60	-	23	12
RWA-200R,B	-	2	18	-	-	-	-	-	-	-	21	11	65	-	28	16
RWA-250R,B	I	4	18	25	12	80	12	33	35	22	21	11	65	40	28	16
RWA-320R,B	I	4	18	30	15	90	16	31	43	25	21	11	70	46	28	16
RNCV-401R,B	I	4	18	30	15	90	16	31	43	25	21	11	70	46	28	16

Note 1: When using a machine with a T-slot pitch other than the above, use suitable clamping blocks and bolts that are available on the market, or order custom-made ones from KOMA (opt.)

Note 2: Clamping blocks are not included in RWA-160R,B and RWA-200R,B.

Type I



RWB-250, 320, 400, 500R

HEAVY DUTY • DUAL DISC HYDRAULIC CLAMPING

The RWB-Series rotary tables are equipped with the finest Tsudakoma technologies. RWB tables utilize a powerful dual disc hydraulic clamping mechanism, and are available with a built-in air/hydraulic booster. RWB-Series worm wheels are manufactured as an assembly consisting of the worm wheel, cross roller bearing, and the main spindle, resulting in unsurpassed accuracy.



RWB-400R

Table Model			RWB-250	RWB-250,S	RWB-320	RWB-320,S	RWB-400	RWB-500
Versions available			R, L	R, L	R, L	R, L	R, L	R, L
Table diameter	mm		250	250	320	320	400	500
Center height	mm		160	160	210	210	255	310
Center bore	Nose Diameter	mm	105	105	150	150	200	220
	Thru Diameter	mm	80	80	120	120	160	181
Table T-slot width			12H7	12H7	14H7	14H7	14H7	18H7
Guide block width			18h7					
Servo motor (Fanuc)*			Alpha 8i	Alpha 8is	Alpha 12i	Alpha 12is	Alpha 12i	Alpha 12i
Maximum motor speed	rpm		4,000	4,000	4,000	4,000	4,000	4,000
Speed reduction ratio			1/90	1/45	1/120	1/45	1/120	1/180
Maximum table speed	rpm		44.4	88.9	33.3	88.9	33.3	22.2
Inertia converted into motor shaft	$\times 10^{-3}\text{kg}\cdot\text{m}^2$		1.27	1.27	3.53	3.53	4.63	4.25
Clamp system**			Hydraulic					
Clamp torque @500psi	Nm (ft. lbs.)		1,300 (958)	1,300 (958)	3,100 (2,284)	3,100 (2,284)	5,500 (3,053)	7,600 (5,601)
Clamp torque @700psi	Nm (ft. lbs.)		2,000 (1,474)	2,000 (1,474)	4,700 (3,463)	4,700 (3,463)	8,000 (5,896)	11,000 (8,107)
Indexing accuracy	arc sec.		± 7					
Net Weight	kg (lbs.)		125 (286)	125 (286)	250 (550)	250 (550)	360 (792)	620 (1,364)
Allowable wheel torque	Nm (ft. lbs.)		1,011 (745)	1,011 (745)	2,127 (1,567)	2,127 (1,567)	3,958 (2,917)	5,601 (4,131)
Allowable work inertia	$\text{kg}\cdot\text{m}^2$		7	7	19	19	36	112
Allowable work weight [w/ tailstock]	 kg (lbs)		175 (385) [350 (770)]	175 (385) [350 (770)]	250 (550) [500 (1,100)]	250 (550) [500 (1,100)]	300 (660) [600 (1,320)]	600 (1,320) [1,200 (2,460)]
	with SSB		900 (1,980)	900 (1,980)	1,500 (3,300)	1,500 (3,300)	1,800 (3,960)	3,600 (7,920)
	 kg (lbs)		350 (770)	350 (770)	500 (1,100)	500 (1,100)	600 (1,320)	1,200 (2,640)
Allowable load when table clamped	 N (lbf)		35,000 (7,700)	35,000 (7,700)	89,000 (19,580)	89,000 (19,580)	109,000 (23,980)	240,000 (52,800)
	 Nm (ft. lbs.)		1,300 (958)	1,300 (958)	3,100 (2,284)	3,100 (2,284)	5,500 (4,053)	7,600 (5,601)
	 Nm (ft. lbs.)		1,500 (1,105)	1,500 (1,105)	5,300 (3,906)	5,300 (3,906)	7,800 (5,748)	17,000 (12,529)

* Other motors & RPM available

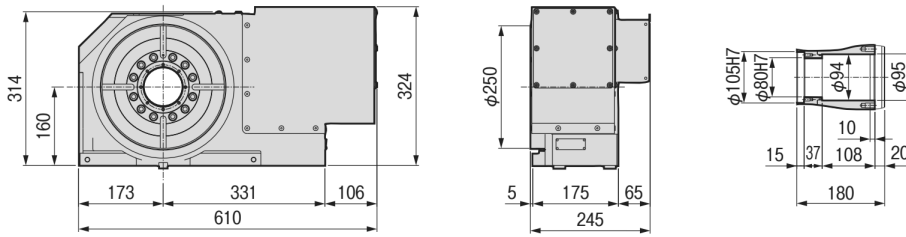
** Booster optional

Specifications subject to change without notice

Dimensions

Drawings not to scale • Dimensions = mm

RWB-250R



RWB-400L with Booster & TC-385F Chuck

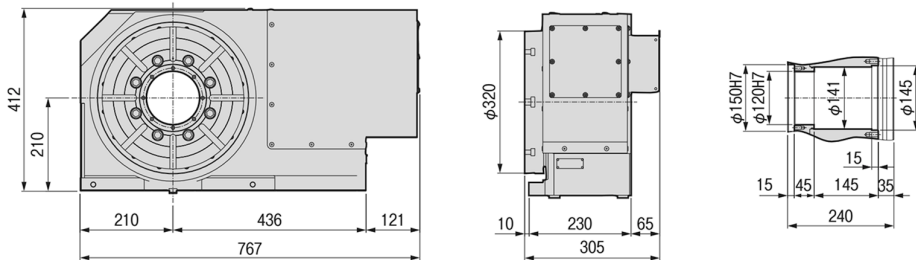


RWB-320R • TSH-210 Support Spindle

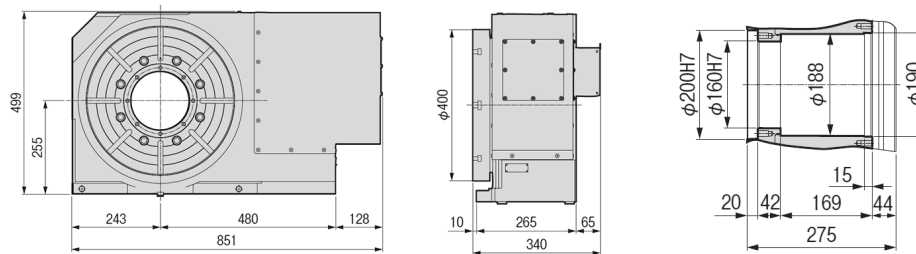
The rotary table and hydraulic support spindle are mounted on a custom baseplate and joined to a specially designed trunnion fixture.



RWB-320R



RWB-400R

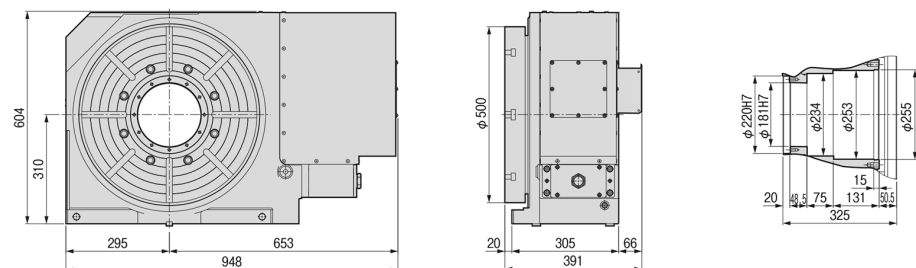


RWB-400R • TSH-210 Support Spindle

The rotary table and hydraulic support spindle are mounted on a custom baseplate and joined to a specially designed trunnion fixture. The support spindle is raised to match the RWB-400 255mm center height.



RWB-500R



Options & Accessories

TPC NC Controller	p.64
Chucks	p.77
Tailstock	p.78
Support Spindle	p.80
Face Plate	p.80
Encoder / Scale	p.81
Pull Stud Device	p.82
Rotary Joint	p.82
Booster	p.83
PVC or Steel Cables	p.84

The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

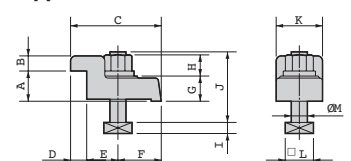
Clamping Block and Bolt

Dimensions = mm

	Type	Q'ty	T-Slot Width	A	B	C	D	E	F	G	H	I	J	K	L	M
RWB-250	I	4	18	25	12	80	12	33	35	22	21	11	65	40	28	16
RWB-320	I	4	18	30	15	90	16	31	43	25	21	11	70	46	28	16
RWB-400	I	4	18	30	15	90	16	31	43	25	21	11	70	46	28	16
RWB-500	I	4	18	40	20	110	18	42	50	25	21	11	70	46	28	16

Note: When using a machine with a T-slot pitch other than the above, use suitable clamping blocks and bolts that are available on the market, or order custom-made ones from KOMA (opt.)

Type I



RCB-350, 450, 550

HIGH RIGIDITY • LARGE BORE

The RCB-Series rotary tables feature a extra large center bore. RCB tables utilize a powerful dual disc hydraulic clamping mechanism. Ideal for Energy manufacturing.

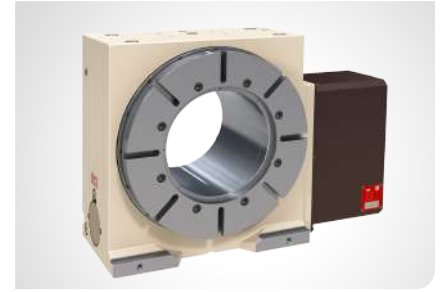


Table Model		RCB-350	RCB-450	RCB-550
Versions available		R, L	R, L	R, L
Table diameter		350	450	550
Center height		255	310	350
Center bore	Nose Diameter	245H7	295H7	345H7
	Thru Diameter	215	265	315
Table T-slot width		14H7	14H7	18H7
Guide block width		18H7	18H7	18H7
Servo motor*		Alpha 12i	Alpha 22i	Alpha 22i
Maximum motor speed rpm		4,000	3,000	3,000
Speed reduction ratio		1/90	1/90	1/120
Maximum table speed rpm		44.4	33.3	25
Inertia converted into motor shaft x 10 ⁻³ kg·m ²		3.48	6.14	6.01
Clamp system**		Hydraulic	Hydraulic	Hydraulic
Clamp torque @500psi Nm (ft. lbs.)		3,300 (2,432)	4,700 (3,464)	6,500 (4,790)
Indexing accuracy arc sec.		±7.5	±7	±7.5
Net Weight kg (lbs.)		400 (880)	520 (1,144)	720 (1,584)
Allowable wheel torque Nm (ft. lbs.)		1,942 (1,431)	3,276 (2,414)	4,716 (3,475)
Allowable work inertia kg·m ²		6.1	17.7	37.8
Allowable work weight	 kg (lbs)	400 (880)	700 (1,540)	1,000 (2,200)
	[w/tailstock]	[800 (1,760)]	[1,400 (3,080)]	[2,000 (4,400)]
	W/SSB Support	1800 (3960)	3600 (7920)	3600 (7920)
Allowable load when table clamped	 N (lbf)	29,400 (6,586)	45,000 (10,080)	54,000 (12,096)
	 Nm (ft. lbs.)	3,300 (2,432)	4,700 (3,464)	6,500 (4,790)
	 Nm (ft. lbs.)	3,626 (2,672)	8,000 (5,896)	15,132 (11,152)

* Other motors & RPM available

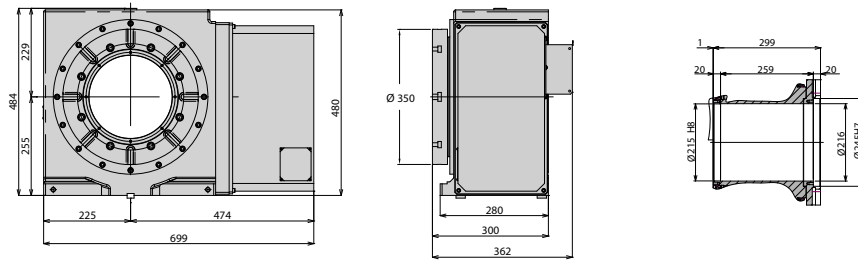
** Booster optional

Specifications subject to change without notice

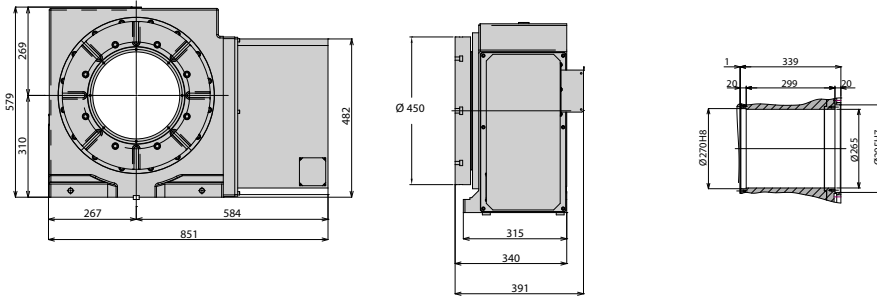
Dimensions

Drawings not to scale • Dimensions = mm

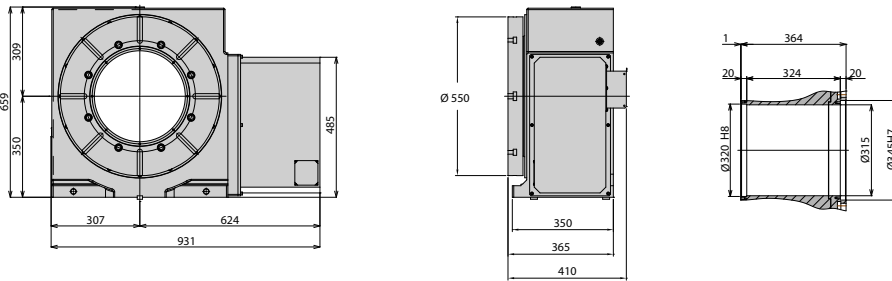
RCB-350



RCB-450



RCB-550



The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

Options & Accessories

TPC NC Controller	p.64
Chucks	p.77
Tailstock	p.78
Support Spindle	p.80
Face Plate	p.80
Encoder / Scale	p.81
Pull Stud Device	p.82
Rotary Joint	p.82
Booster	p.83
PVC or Steel Cables	p.84

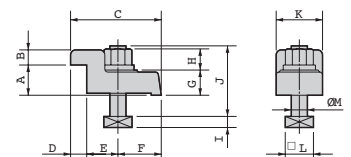
Clamping Block and Bolt

Dimensions = mm

	Type	Q'ty	T-Slot Width	A	B	C	D	E	F	G	H	I	J	K	L	M
RCB-350	I	4	14	30	15	90	16	31	43	25	21	11	70	46	28	16
RCB-450	I	4	14	40	20	110	18	42	50	25	21	11	70	46	28	16
RCB-550	I	4	18	40	20	110	18	42	50	25	21	11	70	46	28	16

Note: When using a machine with a T-slot pitch other than the above, use suitable clamping blocks and bolts that are available on the market, or order custom-made ones from KOMA (opt.)

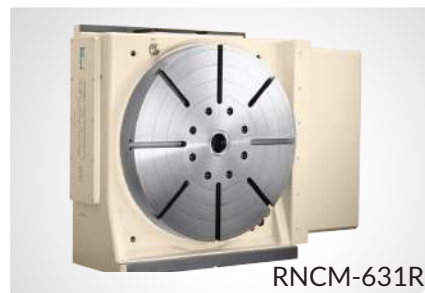
Type I



RNCM-251, 301, 401, 501, 631

SPACE SAVING • POWERFUL HYDRAULIC CLAMPING

The RNCM-Series rotary tables utilize a space saving vertical motor mounting configuration. These tables feature powerful hydraulic clamping and can be accessorized with a variety of options.



RNCM-631R

Table Model			RNCM-251	RNCM-301	RNCM-401	RNCM-501	RNCM-631
Versions available			R, L	R, L	R, L	R, L	R, L
Table diameter	mm		250	320	400	500	630
Center height	mm		160	210	255	310	400
Center bore	Nose Diameter	mm	40H7	40H7	40H7	50H7	60H6
	Thru Diameter	mm	32	40	40	50	60
Table T-slot width			12H7	14H7	14H7	18H7	18H7
Guide block width			18h7				
Servo motor (Fanuc)*			Alpha 8i	Alpha 12i	Alpha 12i	Alpha 12i	Alpha 12i
Maximum motor speed	rpm		4,000				
Speed reduction ratio			1/180				
Maximum table speed	rpm		22.2				
Inertia converted into motor shaft	$\times 10^{-3} \text{kg}\cdot\text{m}^2$		.30	1.76	2.05	3.09	5.55
Clamp system**			Hydraulic				
Clamp torque @500psi	Nm (ft. lbs.)		490 (361)	833 (614)	1,764 (1,300)	2,450 (1,806)	4,410 (3,250)
Indexing accuracy			± 7.5 arc sec.				
Net Weight	kg (lbs.)		75 (165)	200 (440)	300 (660)	450 (990)	800 (1,760)
Allowable wheel torque	Nm (ft. lbs.)		470 (346)	764 (563)	1,666 (1,228)	2,450 (1,805)	4,116 (3,033)
Allowable work inertia	$\text{kg}\cdot\text{m}^2$		1.2	3.7	9.7	18.2	39.7
Allowable work weight	 kg (lbs) [w/ tailstock]		100 (220) [250 (550)]	150 (330) [350 (770)]	200 (440) [500 (1,100)]	250 (550) [600 (1,320)]	400 (880) [1000 (1,760)]
	 kg (lbs)		250 (550)	350 (770)	500 (1,100)	600 (1,320)	1,000 (2,200)
Allowable load when table clamped	 N (lbf)		19,600 (4,390)	29,400 (6,585)	39,200 (8,781)	49,000 (10,976)	49,000 (10,976)
	 Nm (ft. lbs.)		490 (361)	833 (614)	1,764 (1,300)	2,450 (1,806)	4,410 (3,250)
	 Nm (ft. lbs.)		931 (686)	1,568 (1,156)	2,450 (1,806)	3,430 (2,528)	7,840 (5,778)

* Other motors & RPM available

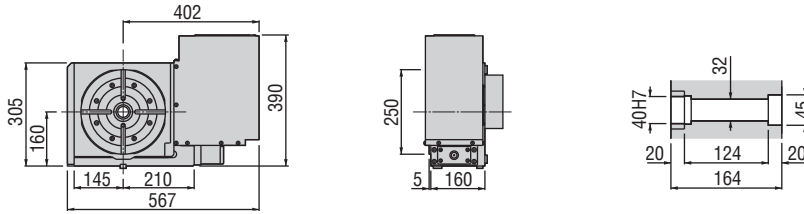
** Booster optional

Specifications subject to change without notice

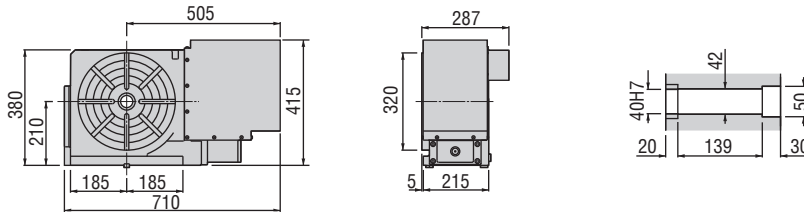
Dimensions

Drawings not to scale • Dimensions = mm

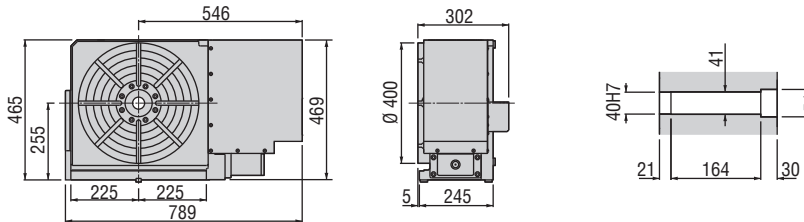
RNCM-251R



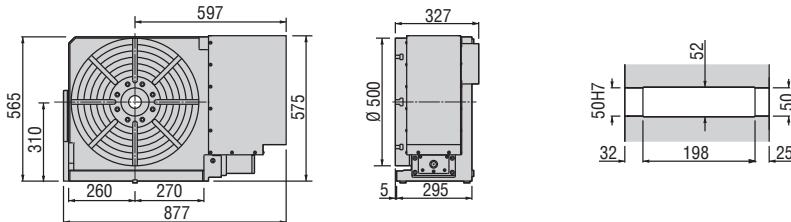
RNCM-301R



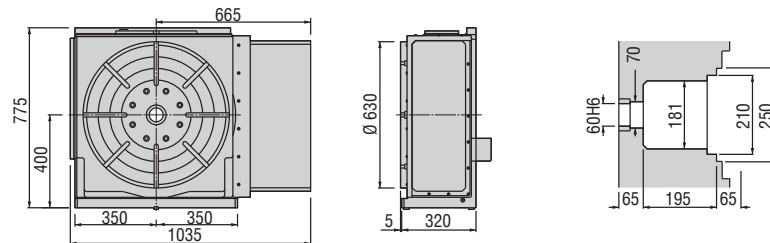
RNCM-401R



RNCM-501R



RNCM-631R



The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

Clamping Block and Bolt

Dimensions = mm

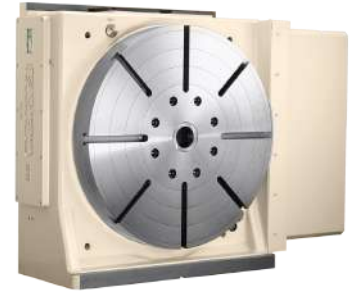
	Type	Q'ty	T-Slot Width	A	B	C	D	E	F	G	H	I	J	K	L	M
RNCM-251	I	4	18	25	12	80	12	33	35	22	21	11	65	40	28	16
RNCM-301	I	4	18	30	15	90	16	31	43	25	21	11	70	46	28	16
RNCM-401	I	4	18	30	15	90	16	31	43	25	21	11	70	46	28	16
RNCM-501	I	4	18	40	20	110	18	42	50	25	21	11	70	46	28	16
RNCM-631	II	4	18	40	18	63	18	15	30	58	21	11	105	60	28	16

Note: When using a machine with a T-slot pitch other than the above, use suitable clamping blocks and bolts that are available on the market, or order custom-made ones from KOMA (opt.)

RNCM-401L



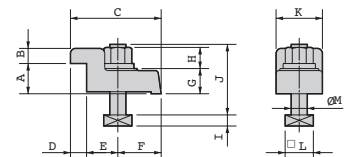
RNCM-631R



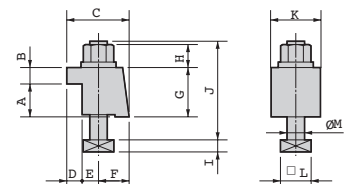
Options & Accessories

TPC NC Controller	p.64
Chucks	p.77
Tailstock	p.78
Support Spindle	p.80
Face Plate	p.80
Encoder / Scale	p.81
Pull Stud Device	p.82
Rotary Joint	p.82
Booster	p.83
PVC or Steel Cables	p.84

Type I



Type II



RN-100/150R-2,3,4 | RWM-160/200/250R-2,3

MULTI-FACE PLATE, MULTI-SPINDLE TABLE • PNEUMATIC CLAMPING

These high speed, multi-spindle rotary tables are particularly suited for multi-spindle vertical machining centers. The compact, multi-spindle RN-100 is ideal for use on drilling and tapping machines.



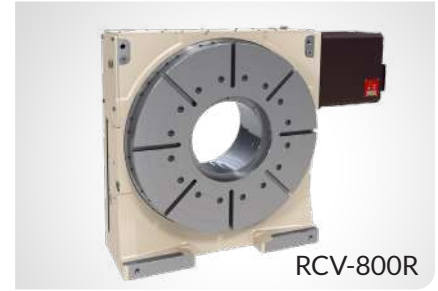
Table Model			RN-100-2,3,4			RN-150-2,3,4			RWM-160R-2		RWM-200R-2,3		RN-300R-2,3	
Versions available			R, L			R			R,L		R,L		R	
Spindle outer diameter		mm	80h7			100h7			100h7		120h7		-	
Table diameter (optional)		mm	(115)			(160)			(160)		(200)		320	
Center height		mm	135			135			135		160		210	
Center bore	Nose Diameter	mm	50H7			55H7			55H7		65H7		110H7	
	Thru Diameter	mm	30			40			40		45		85	
Table T-slot width (with face plate)			(10H8)			(12H8)			(12H8)		(12H8)		14H8	
Minimum spindle center distance			120			215			215		250		380	
Guide block width			18h7			14h7			14h7		18h7		18h7	
Servo motor (Fanuc)*			Alpha 4i			α4i	Alpha 8i		Alpha 4i		Alpha 8i		Alpha 12i	
Maximum motor speed		rpm	5,000			5,000	4,000		5,000		4,000		4,000	
Speed reduction ratio			1/36			1/90		1/180	1/72		1/72		1/120	
Number of spindles			2	3	4	2	3	4	2		2		2	3
Maximum table speed		rpm	138.9			55.5	44.4	22.2	69.4		55		33.3	
Inertia converted into motor shaft x 10 ⁻³ kg·m ²			.64	.92	1.06	.42	.78	.39	.31		.55		2.09	2.63
Clamp system			Pneumatic						Pneumatic				Pneumatic	
Clamp torque @72psi		Nm (ft. lbs.)	80 (59)			156 (115)			500 (368)		800 (590)		880 (649)	
Indexing accuracy		arc sec.	±30			±15			±12.5		±10		±15	
Net Weight [dual spindle]		kg (lbs.)	70-110 (154-242)			[120 (264)]			[105 (231)]		[155 (341)]		[480 (1,056)]	
Allowable wheel torque		Nm (ft. lbs.)	178 (131)			147 (108)			206 (151)		288 (212)		764 (563)	
Allowable work inertia			.10			.48			.64		1.25		3.7	
Allowable work weight		kg (lbs) [w/ tailstock]	25 (55) [50 (110)]			75 (165) [150 (330)]			100 (220) [175 (385)]		125 (275) [250 (550)]		150 (330) [350 (770)]	
		kg (lbs)	50 (110)			150 (330)			-		-		350 (770)	
Allowable load when table clamped		N (lbf)	5,880 (1,317)			7,840 (1,756)			10,800 (2,418)		14,400 (3,211)		19,600 (4,390)	
		Nm (ft. lbs.)	80 (59)			156 (115)			500 (368)		800 (590)		880 (649)	
		Nm (ft. lbs.)	156 (115)			392 (289)			780 (574)		1,900 (1,400)		1,960 (1,444)	

* Other motors & RPM available
Specifications subject to change without notice

RCV-800R, 1000R, 1250R

HIGH CAPACITY • LARGE THRU HOLE

The RCV-Series rotary tables feature an extra large thru hole for accommodating large workpieces. The RCV-800 can be equipped with either an 800mm or an optional 1,000mm face plate, and the RCV-1000 can hold either a 1,000mm or an optional 1,200mm face plate.



RCV-800R

Table Model		RCV-800R	RCV-1000R	RCV-1250R
Table diameter (optional)	mm	800 (1,000)	1,000 (1,200)	1,250 (1500)
Center height	mm	530	625	775
Center bore	Nose Diameter	mm	360H7 x 45	410H7 x 75
	Thru Diameter	mm	310	360
Table T-slot width		18H7	22H7	22H7
Guide block width		22h7		
Servo motor (Fanuc)*		Alpha 12i	Alpha 22i	Alpha 22i
Maximum motor speed	rpm	4,000	3,000	
Speed reduction ratio		1/360		1/720
Maximum table speed	rpm	11.1	8.33	4.16
Inertia converted into motor shaft	$\times 10^{-3} \text{kg} \cdot \text{m}^2$	4.89	12.2	5.04
Clamp system**		Hydraulic		
Clamp torque @500psi	Nm (ft. lbs.)	7,000 (5,159)	20,000 (14,740)	33,000 (24,321)
Indexing accuracy	arc sec.	± 7.5		
Net Weight	kg (lbs.)	1,450 (3,190)	2,500 (5,500)	4,850 (10,670)
Allowable wheel torque	Nm (ft. lbs.)	7,840 (5,778)	13,230 (9,751)	25,000 (18,425)
Allowable work inertia	$\text{kg} \cdot \text{m}^2$	120	874	2,374
Allowable work weight	 kg (lbs) [w/ tailstock]	2,000 (4,400) [4,000 (8,000)]	3,500 (7,700) [7,000 (15,400)]	6,300 (13,860) [13,860(30,492)]
	 kg (lbs)	4,000 (8,800)	7,000 (15,400)	13,860 (30,492)
Allowable load when table clamped	 N (lbf)	100,000 (22,400)	185,000 (41,440)	383,000 (85,792)
	 Nm (ft. lbs.)	7,000 (5,159)	20,000 (14,740)	33,000 (24,321)
	 Nm (ft. lbs.)	11,600 (8,550)	22,900 (16,877)	56,700 (41,788)

* Other motors & RPM available

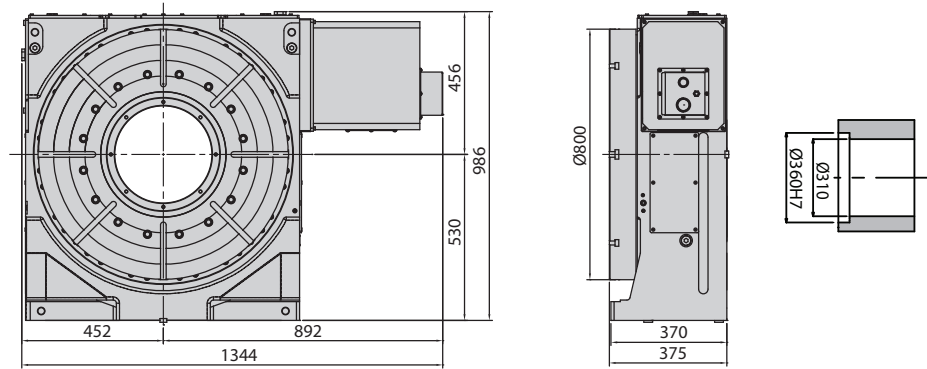
** Booster optional

Specifications subject to change without notice

Dimensions

Drawings not to scale • Dimensions = mm

RCV-800R

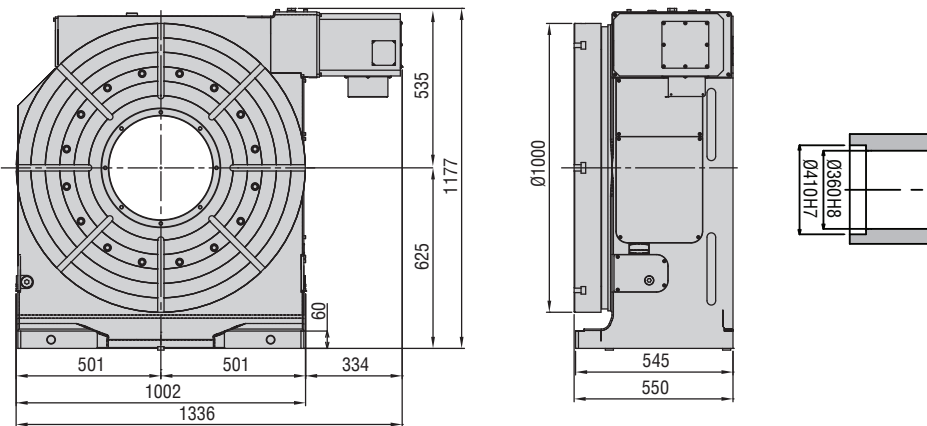


RCV-1000R

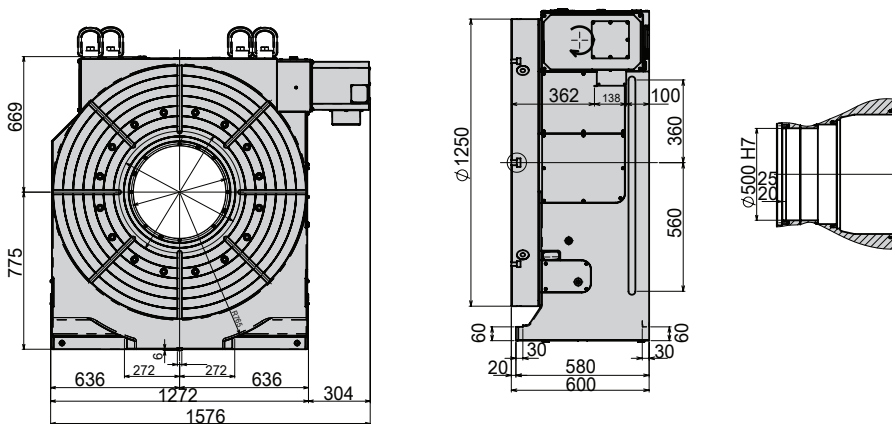
Shown with 1200mm faceplate.



RCV-1000R



RCV-1250R



Options & Accessories

TPC NC Controller	p.64
Chucks	p.77
Tailstock	p.78
Support Spindle	p.80
Face Plate	p.80
Encoder / Scale	p.81
Pull Stud Device	p.82
Rotary Joint	p.82
Booster	p.83
PVC or Steel Cables	p.84

The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

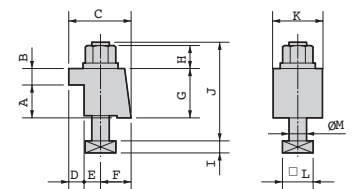
Clamping Block and Bolt

Dimensions = mm

	Type	Q'ty	T-Slot Width	A	B	C	D	E	F	G	H	I	J	K	L	M
RCV-800R	II	4	22	60	28	95	29	16	50	88	27	13	145	100	32	20
RCV-1000R	II	4	22	60	28	95	29	16	50	88	27	13	145	100	32	20
RCV-1250R	II	8	22	60	28	95	29	16	50	88	27	13	145	100	32	70

Note: When using a machine with a T-slot pitch other than the above, use suitable clamping blocks and bolts that are available on the market, or order custom-made ones from KOMA (opt.)

Type II



RNCV-1501L, 1501L-BB

EXTRA LARGE TABLE • POWERFUL HYDRAULIC CLAMPING

The RNCV-Series Big Bore rotary tables feature powerful hydraulic clamping and are available with options including scales, rotary joints, air/hydraulic boosters, and various motor mounting positions.

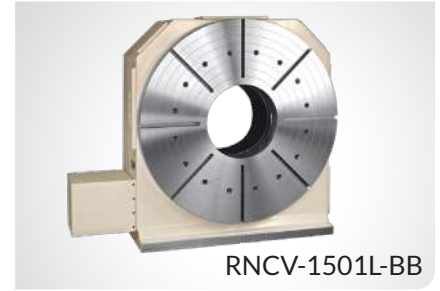


Table Model			RNCV -1501L	RNCV-1501L-BB
Versions available			L	L
Table diameter	mm		1,500	1,000
Center height	mm		950	650
Center bore	Nose Diameter	mm	75H7	Custom
	Thru Diameter	mm	-	Custom
Table T-slot width			28H7	22H7
Guide block width			28h7	22h7
Servo motor (Fanuc)*			Alpha 22i	Alpha 22i
Maximum motor speed	rpm		3,000	3,000
Speed reduction ratio			1/720	1/360
Maximum table speed	rpm		4.17	8.33
Inertia converted into motor shaft	$\times 10^{-3}\text{kg}\cdot\text{m}^2$		12.8	12.8
Clamp system**			Hydraulic	Hydraulic
Clamp torque @500psi	Nm (ft. lbs.)		17,650 (13,008)	5,390 (3,972)
Indexing accuracy	arc sec.		± 7.5	± 7.5
Net Weight	kg (lbs.)		7,000 (15,400)	2,700 (5,940)
Allowable wheel torque	Nm (ft. lbs.)		21,560 (15,889)	13,230 (9,750)
Allowable work inertia	$\text{kg}\cdot\text{m}^2$		2,255	392
Allowable work weight	 kg (lbs) [w/ tailstock]		8,500 (17,000) [18,700 (24,200)]	8,500 (17,000) [18,700 (24,200)]
	 kg (lbs)		17,000 (37,400)	17,000 (37,400)
Allowable load when table clamped	 N (lbf)		265,000 (59,360)	265,000 (59,360)
	 Nm (ft. lbs.)		17,650 (13,008)	17,650 (13,008)
	 Nm (ft. lbs.)		46,800 (34,491)	46,800 (34,491)

* Other motors & RPM available

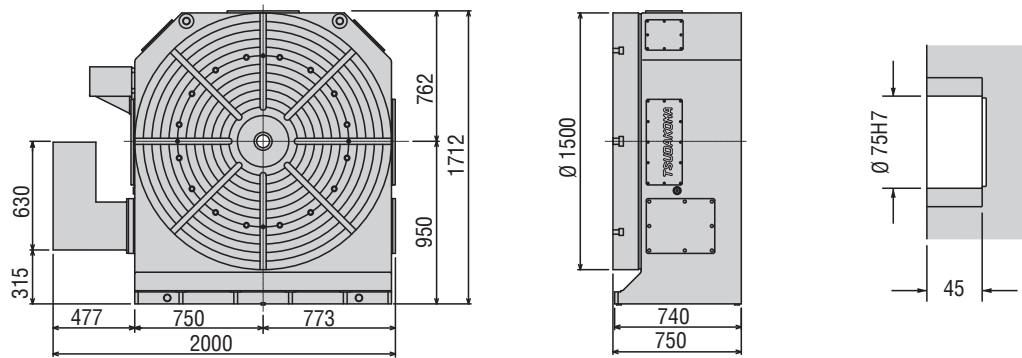
** Booster optional

Specifications subject to change without notice

Dimensions

Drawings not to scale • Dimensions = mm

RNCV-1501L

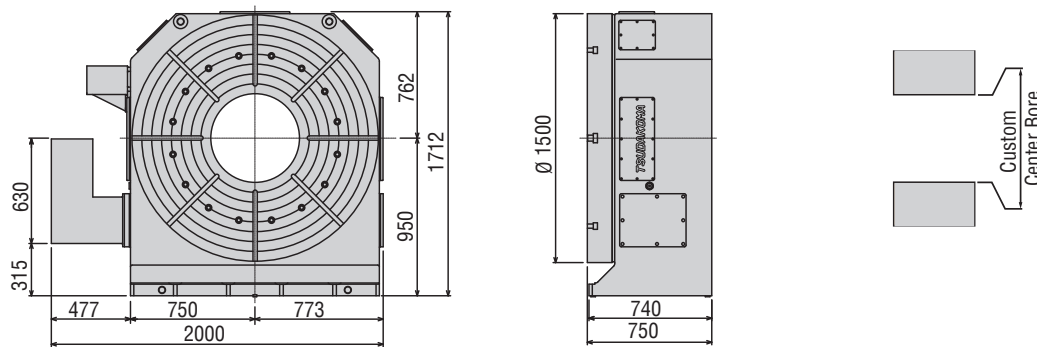


RNCV- 1201L-BB

Scale Installation



RNCV-1501L-BB



The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

Options & Accessories

TPC NC Controller	p.64
Chucks	p.77
Tailstock	p.78
Support Spindle	p.80
Face Plate	p.80
Encoder / Scale	p.81
Pull Stud Device	p.82
Rotary Joint	p.82
Booster	p.83
PVC or Steel Cables	p.84

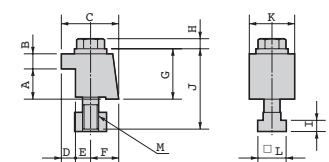
Clamping Block and Bolt

Dimensions = mm

	Type	Q'ty	T-Slot Width	A	B	C	D	E	F	G	H	I	J	K	L	M
RNCV-1501L	IV	8	28	70	35	95	29	16	50	112	15	17.5	160	100	41.3	24
RNCV-1501L-BB	IV	8	28	70	35	95	29	16	50	112	15	17.5	160	100	41.3	24

Note: When using a machine with a T-slot pitch other than the above, use suitable clamping blocks and bolts that are available on the market, or order custom-made ones from KOMA (opt.)

Type IV



RWE-160 TPC, 200 TPC

PACKAGED WITH CONTROLLER FOR PLUG & PLAY OPERATION

RWE-Series indexers are packaged with a TPC-Jr NC controller for plug & play operation. The RWE indexers are attractively priced, yet retain the high performance build characteristics found on full 4th axis Tsudakoma rotary tables.



RWE-160 TPC

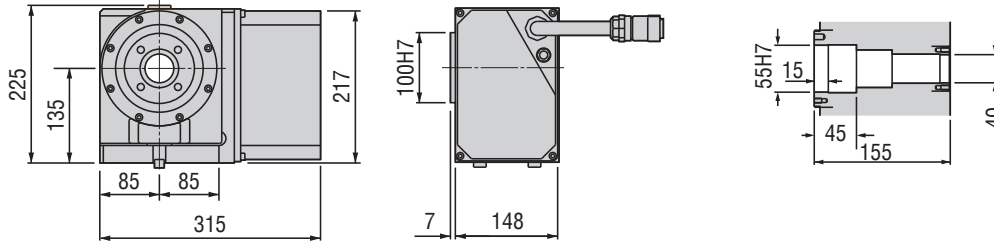
Indexer Model		RWE-160 TPC	RWE-200 TPC	Controller		TPC-Jr			
Spindle outer diameter		100h7	120h7	Control axis		1 axis			
Table diameter (optional)		(160 or 200)	(200 or 250)	Servo motor		AC servo, ABS detector			
Center height		135	160	Command unit		0.001°			
Center bore	Nose Diameter (w/ face plate)	55H7 (50H7)	65H7 (60H7)	Dividing number	Direct indexing	1 to 999999 even indexing			
	Thru Diameter	40	45		Arc indexing	1 to 999 even indexing			
Table T-slot width w/ face plate		12H8	12H8	Max. command angle		± 999.999°			
Guide block width		14h7	18h7	Command system		INC, ABS, Shortcut ABS, INC/ABS mixed system			
Controller (included with table)		TPC-Jr G2	TPC-Jr G3	Input system		Includes MDI & full RS-232 communication			
Maximum motor speed rpm		3,000			Program control		Workpiece No. (W0000 to 9999)		
Speed reduction ratio		1/60	1/72	Program capacity		1000 blocks in main & sub-program together			
Maximum table speed rpm		50	41.7	Cable supplied (Standard)		Between rotary table & TPC-Jr (1 pc.)			
Inertia converted into motor shaft x 10 ⁻³ kg·m ²		.19	.19			For motor : 5m			
Clamp system		Pneumatic				Power cable : 5m			
Clamp torque @72psi Nm (ft. lbs.)		156 (115)	294 (217)			Interlocking cable : 5m			
Indexing accuracy arc sec.		±12.5	±10	Power Requirements (less than 100 ohm ground resistance)		1 Ø 200/220V±10% 50/60Hz (non-CE)			
Net Weight kg (lbs.)		40 (88)	65 (143)			1 Ø 230V±10% 50/60Hz (CE)			
Allowable wheel torque Nm (ft. lbs.)		147 (108)	264 (195)			Model	Power capacity	Fuse Rating	
Allowable work inertia kg·m ²		.48	1.2			Jr H2	1.2KVA	8A	
Allowable work weight	 kg (lbs) [w/ tailstock]	75 (165) [150 (330)]	100 (220) [250 (550)]			Jr H3	2.2KVA	15A	
	 kg (lbs)	150 (330)	250 (550)						
Allowable load when table clamped	 N (lbf)	7,840 (1,756)	13,720 (3,073)						
	 Nm (ft. lbs.)	156 (115)	294 (217)						
	 Nm (ft. lbs.)	392 (289)	980 (722)						

Specifications subject to change without notice

Dimensions

Drawings not to scale • Dimensions = mm

RWE-160 TPC

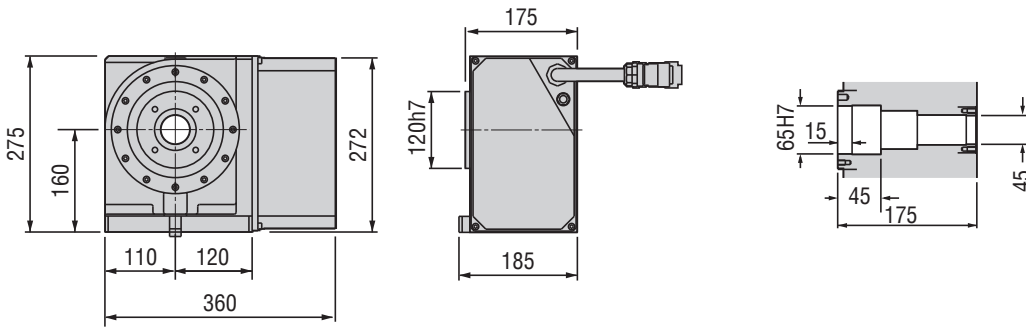


RWE-200 TPC with optional Steel Braided Cable



RWE-160 TPC with 5C Collet

RWE-200 TPC

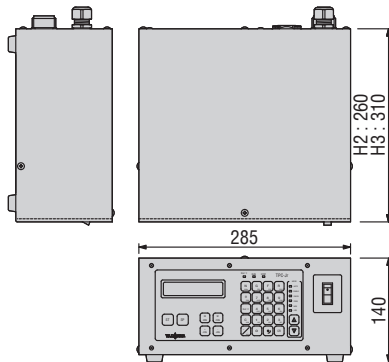


RWE-160 TPC • TS-160 Support Spindle

The rotary table and support spindle are mounted on a baseplate and joined to a specially designed, dual 5C collet trunnion fixture.



TPC-Jr NC CONTROLLER



Options & Accessories

TPC NC Controller	p.64
Chucks	p.77
Tailstock	p.78
Support Spindle	p.80
Face Plate	p.80
Encoder / Scale	p.81
Pull Stud Device	p.82
Rotary Joint	p.82
Booster	p.83
PVC or Steel Cables	p.84

The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

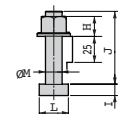
Clamping Block and Bolt

Dimensions = mm

	Q'ty	T-Slot Width	A	B	C	D	E	F	G	H	I	J	K	L	M
RWE-160 TPC	2	14	-	-	-	-	-	-	-	17	8	60	-	23	12
RWE-200 TPC	2	18	-	-	-	-	-	-	-	21	11	65	-	28	16

Note 1: When using a machine with a T-slot pitch other than the above, use suitable clamping blocks and bolts that are available on the market, or order custom-made ones from KOMA (opt.)

Note 2: Clamping blocks are not included in RWE-160 TPC and RWE-200 TPC.



RDS-200

SLIM FOOTPRINT • DIRECT DRIVE MOTOR

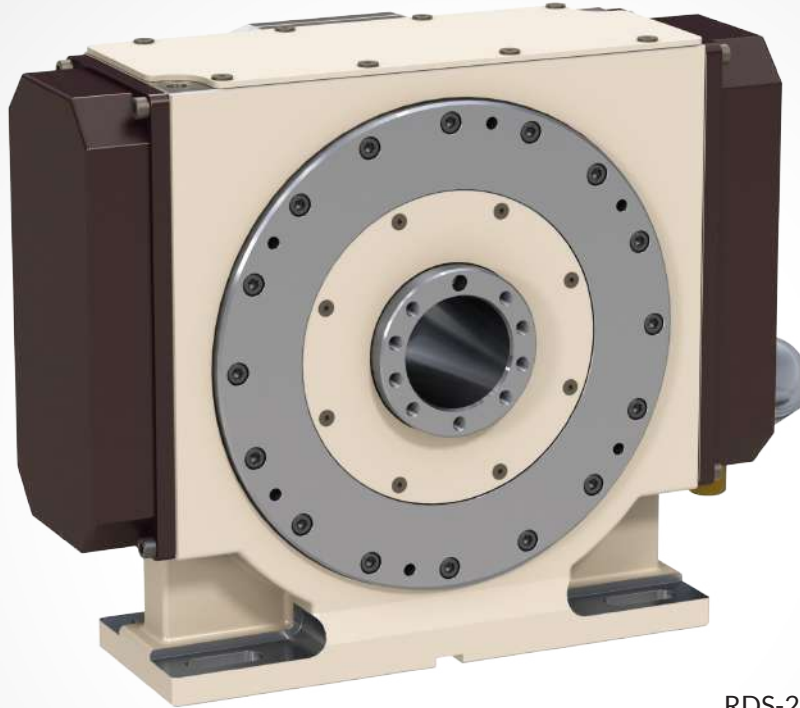
This series utilizes Tsudakoma's proprietary direct drive motor system enabling the rotary table to achieve high speed and acceleration with no backlash. The RDS-200 model is a compact single axis 300 rpm direct drive rotary table with indexing accuracy of ± 10 arc seconds and a strong pneumatic braking system.

Table Model		RDS-200
Spindle outer diameter	mm	83H7
Center height	mm	160
Center bore	Nose Diameter	55H7
	Thru Diameter	45H7
Servo motor (For Fanuc)*		Tsuda-02
Speed reduction ratio		1/1
Maximum table speed	rpm	300
Clamp system		Pneumatic
Holding torque @72psi	Nm (ft. lbs.)	600 (443)
Indexing accuracy	arc sec.	± 10
Net Weight	kg (lbs.)	65 (144)
Allowable work weight	 kg (lbs)	100 (220)
Allowable Load when table clamped	 N	6,860
	 Nm	600
	 Nm	350

* Other motors & RPM available

** Booster optional

Specifications subject to change without notice

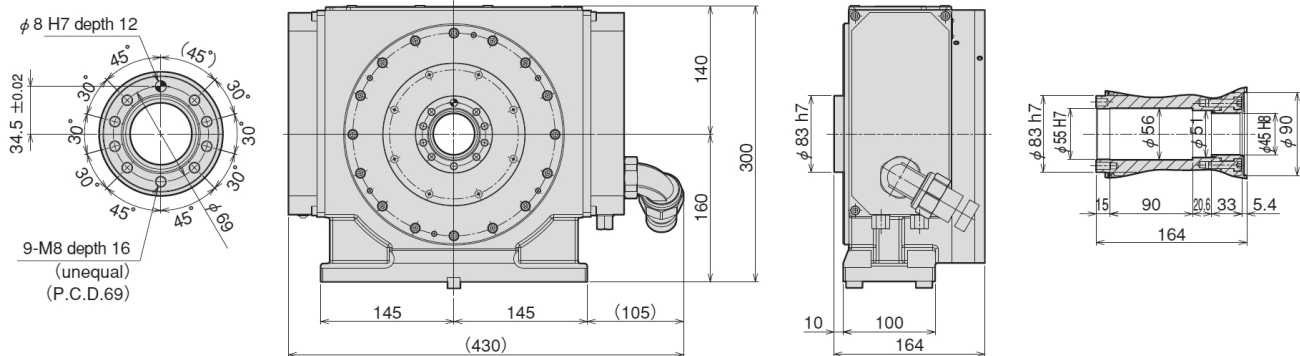


RDS-200

Dimensions

Drawings not to scale • Dimensions = mm

RDS-200



The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

Options & Accessories

TPC NC Controller	p.64
Chucks	p.77
Tailstock	p.78
Support Spindle	p.80
Face Plate	p.80
Encoder / Scale	p.81
Pull Stud Device	p.82
Rotary Joint	p.82
Booster	p.83
PVC or Steel Cables	p.84

RBS-160K, 250K, 320K

PACKAGED WITH CONTROLLER FOR PLUG & PLAY OPERATION

A new line of high accuracy, high rigidity, energy saving and zero maintenance rotary tables from Tsudakoma. The RBS,K Series rotary tables are built using the new ball drive system featuring advantages like zero backlash, improved cycle times, energy conservation and a lifetime adjustment-free transmission system.



RBS-250K

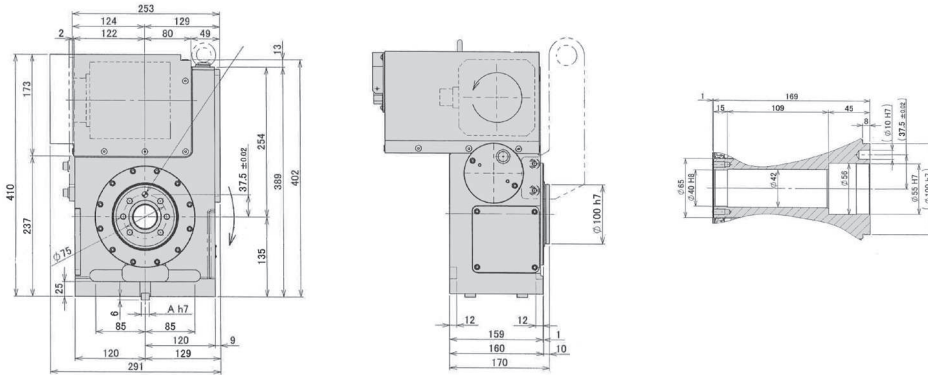
Table Model		RBS-160K	RBS-250K	RBS-320K
Spindle outer diameter	mm	100h7	140h7	180h7
Table diameter (optional)	mm	(160, 200)	250	320
Center height	mm	160	210	255
Center bore	Nose Diameter	55H7	80H7	115H7
	Thru Diameter	40	50	85
Guide block width		14h7	18h7	18h7
Servo motor (For Fanuc)*		Alpha 4i	Alpha 8i	Alpha 12i
Maximum Motor Speed		5,000	4,000	4,000
Speed reduction ratio		1/36	1/36	1/36
Maximum table speed	rpm	138.9	111.1	111.1
Clamp system		Pneumatic	Pneumatic	Pneumatic
Holding torque @72psi	Nm (ft. lbs.)	700 (516)	1480 (1076)	2580 (1901)
Indexing accuracy	arc sec.	±7.5	±7.5	±7.5
Net Weight	kg (lbs.)	55 (121.2)	100 (220)	200 (440)
Allowable work weight	 kg (lbs)	100 (200) [200 (440)]	125 (275) [250 (550)]	175 (385) [350 (770)]
[with tailstock]	 kg (lbs)	200 (440)	250 (550)	350 (770)

*Other motors & rpm available • Dimensions = mm
Specifications subject to change without notice

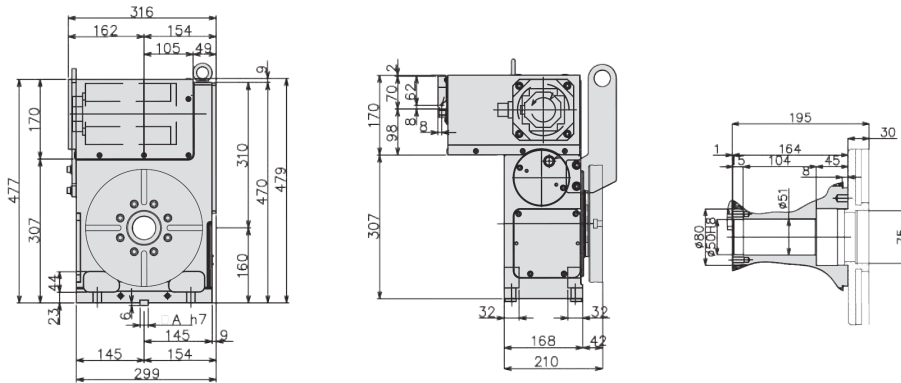
Dimensions

Drawings not to scale • Dimensions = mm

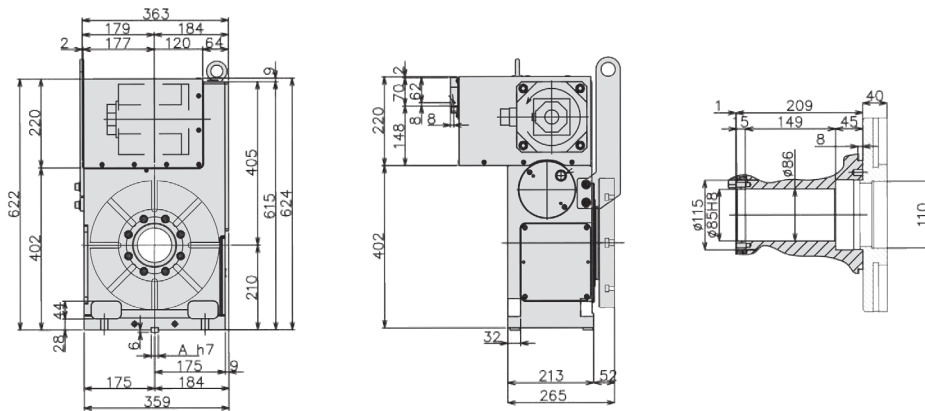
RBS-160K



RBS-250K



RBS-320K



The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

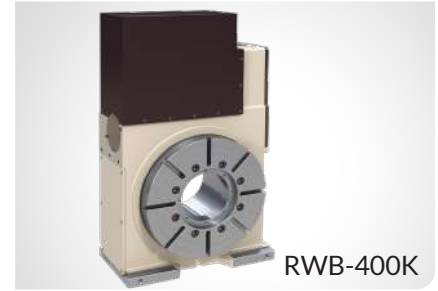
Options & Accessories

TPC NC Controller	p.64
Chucks	p.77
Tailstock	p.78
Support Spindle	p.80
Face Plate	p.80
Encoder / Scale	p.81
Pull Stud Device	p.82
Rotary Joint	p.82
Booster	p.83
PVC or Steel Cables	p.84

RWB-250K, 320K, 400K, 500K

HEAVY DUTY • DUAL DISC HYDRAULIC CLAMPING

The RWB,K-Series rotary tables are designed for use on horizontal machining centers. RWB,K tables utilize a powerful dual disc hydraulic clamping mechanism, and are available with a built-in air/hydraulic booster. RWB,K-Series worm wheels are manufactured as an assembly consisting of the worm wheel, cross roller bearing, and the main spindle, resulting in unsurpassed accuracy.



RWB-400K

Table Model		RWB-250K	RWB-250K,S	RWB-320K	RWB-320K,S	RWB-400K	RWB-500K
Table diameter	mm	250	250	320	320	400	500
Center height	mm	160	160	210	210	255	310
Center bore	Nose Diameter	mm	105	105	150	150	220
	Thru Diameter	mm	80	80	120	120	181
Table T-slot width		12H7	12H7	14H7	14H7	14H7	18H7
Guide block width		18h7					
Servo motor (Fanuc)*		Alpha 8i	Alpha 8is	Alpha 12i	Alpha 12is	Alpha 12i	Alpha 12i
Maximum motor speed	rpm	4,000	4,000	4,000	4,000	4,000	4,000
Speed reduction ratio		1/90	1/45	1/120	1/45	1/120	1/180
Maximum table speed	rpm	44.4	88.9	33.3	88.9	33.3	22.2
Inertia converted into motor shaft	x 10 ⁻³ kg·m ²	1.27	1.27	3.53	3.53	4.63	4.25
Clamp system**		Hydraulic					
Clamp torque @500psi	Nm (ft. lbs.)	1,300 (958)	1,300 (958)	3,100 (2,284)	3,100 (2,284)	5,500 (4,053)	7,600 (5,601)
Clamp torque @700psi	Nm (ft. lbs.)	2,000 (1,474)	2,000 (1,474)	4,700 (3,463)	4,700 (3,463)	8,000 (5,896)	11,000 (8,107)
Indexing accuracy		±7					
Net Weight	kg (lbs.)	125 (286)	125 (286)	250 (550)	250 (550)	360 (792)	620 (1,364)
Allowable wheel torque	Nm (ft. lbs.)	1,011 (745)	1,011 (745)	2,127 (1,567)	2,127 (1,567)	3,958 (2,917)	5,601 (4,131)
Allowable work inertia	kg·m ²	7	7	19	19	36	112
Allowable work weight	kg (lbs.)	175 (385) [250 (550)]	175 (385) [250 (550)]	250 (550) [500 (1,100)]	250 (550) [500 (1,100)]	300 (660) [600 (1,320)]	600 (1,320) [1,200 (2,460)]
Allowable load when table clamped	 N (lbf)	35,000 (7,700)	35,000 (7,700)	89,000 (19,580)	89,000 (19,580)	109,000 (23,980)	240,000 (52,800)
	 Nm (ft. lbs.)	1,300 (958)	1,300 (958)	3,100 (2,284)	3,100 (2,284)	5,500 (4,053)	7,600 (5,601)
	 Nm (ft. lbs.)	1,500 (1,105)	1,500 (1,105)	5,300 (3,906)	5,300 (3,906)	7,800 (5,748)	17,000 (12,529)

* Other motors & RPM available

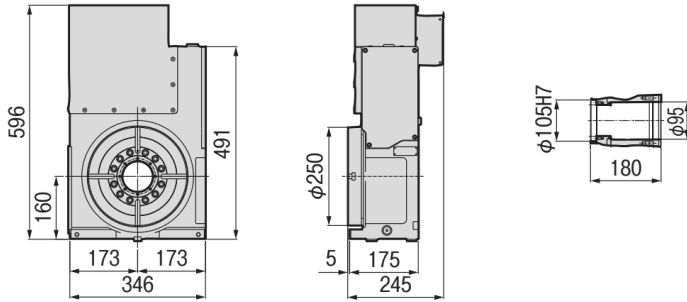
** Booster optional

Specifications subject to change without notice

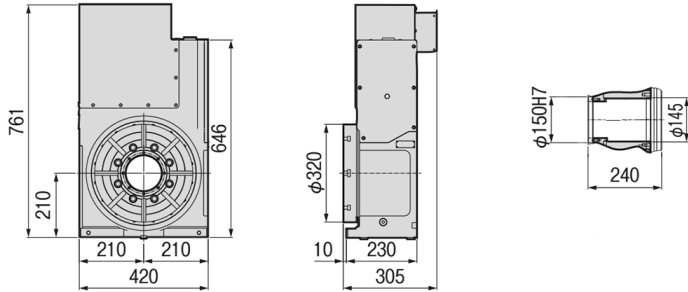
Dimensions

Drawings not to scale • Dimensions = mm

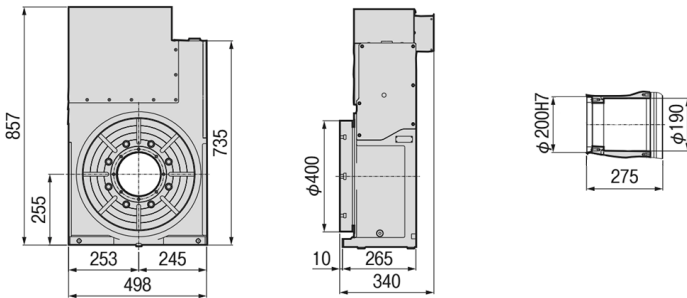
RWB-250K



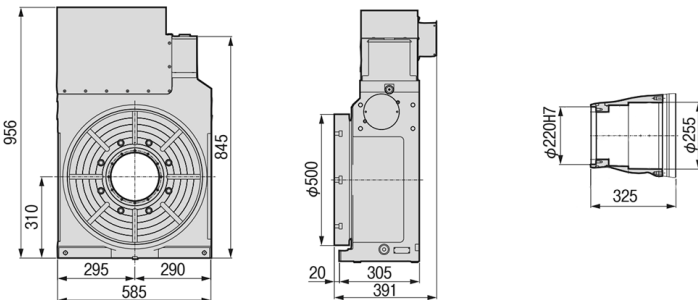
RWB-320K



RWB-400K



RWB-500K



The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

RWB-250K with booster
& Hirschmann chuck



RWB-400K with Custom
Cover & Swivel Box

A swivel connector is used to prevent cables from being entangled when the rotary table is mounted on a pallet.



Options & Accessories

TPC NC Controller	p.64
Chucks	p.77
Tailstock	p.78
Support Spindle	p.80
Face Plate	p.80
Encoder / Scale	p.81
Pull Stud Device	p.82
Rotary Joint	p.82
Booster	p.83
PVC or Steel Cables	p.84

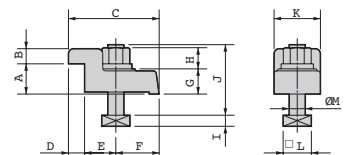
Clamping Block and Bolt

Dimensions = mm

	Type	Q'ty	T-Slot Width	A	B	C	D	E	F	G	H	I	J	K	L	M
RWB-250K	I	4	18	25	12	80	12	33	35	22	21	11	65	40	28	16
RWB-320K	I	4	18	30	15	90	16	31	43	25	21	11	70	46	28	16
RWB-400K	I	4	18	30	15	90	16	31	43	25	21	11	70	46	28	16
RWB-500K	I	4	18	40	20	110	18	42	50	25	21	11	70	46	28	16

Note: When using a machine with a T-slot pitch other than the above, use suitable clamping blocks and bolts that are available on the market, or order custom-made ones from KOMA (opt.)

Type I



RWB-250K-2, 320K-2, 400K-2, 500K-2

HEAVY DUTY • MULTI-FACE PLATE, MULTI-SPINDLE TABLE

The RWB-Series dual face plate rotary tables are designed for use on pallet equipped horizontal machining centers. RWB-K dual face plate tables utilize a powerful dual disc hydraulic clamping mechanism, and are available with a built-in air/hydraulic booster.



RWB-400K-2

Table Model			RWB-250K-2	RWB-250K-2,S	RWB-320K-2	RWB-320K-2,S	RWB-400K-2	RWB-500K-2		
Table diameter			mm	250	250	320	320	400	500	
Center height			mm	160	160	210	210	255	310	
Center bore	Nose Diameter		mm	95H7	95H7	130H7	130H7	190H7	220H7	
Table T-slot width				12H7	12H7	14H7	14H7	14H7	18H7	
Guide block width			18h7							
Servo motor (Fanuc)*			Alpha 8i	Alpha 8is	Alpha 12i	Alpha 22is	Alpha 12i	Alpha 12i		
Maximum motor speed			rpm	4,000	4,000	4,000	4,000	4,000		
Speed reduction ratio				1/90	1/90	1/45	1/90	1/180		
Maximum table speed			rpm	44.4	44.4	88.9	44.4	22.2		
Inertia converted into motor shaft			x 10 ⁻³ kg.m ²	.94	.94	3.04	3.04	4.28	3.00	
Clamp system**			Hydraulic							
Clamp torque @500psi			Nm (ft. lbs.)	1,000 (737)	1,000 (737)	2,450 (1,806)	2,450 (1,806)	4,200 (3,095)	7,600 (5,601)	
Indexing accuracy			arc sec.	±7						
Net Weight			kg (lbs.)	105 (231)	105 (231)	185 (407)	185 (407)	300 (660)	550 (1,210)	
Allowable wheel torque			Nm (ft. lbs.)	581 (428)	581 (428)	939 (692)	939 (692)	1,666 (1,228)	3,276 (2,414)	
Allowable work inertia			kg.m ²	2.34	2.34	5.12	5.12	9.7	18.2	
Allowable work weight per face plate		kg (lbs)	75 (165) [150 (330)]	75 (165) [150 (330)]	100 (220) [200 (440)]	100 (220) [200 (440)]	125 (275) [250 (550)]	250 (550) [600 (1,320)]		
Allowable load when table clamped		N (lbf)	19,600 (4,390)	19,600 (4,390)	29,400 (6,586)	29,400 (6,586)	39,200 (8,781)	49,000 (10,976)		
		Nm (ft. lbs.)	980 (722)	980 (722)	2,450 (1,806)	2,450 (1,806)	4,200 (3,095)	6,100 (4,496)		
		Nm (ft. lbs.)	980 (722)	980 (722)	3,626 (2,672)	3,626 (2,672)	5,880 (4,334)	13,132 (9,678)		

* Other motors & RPM available

** Booster optional

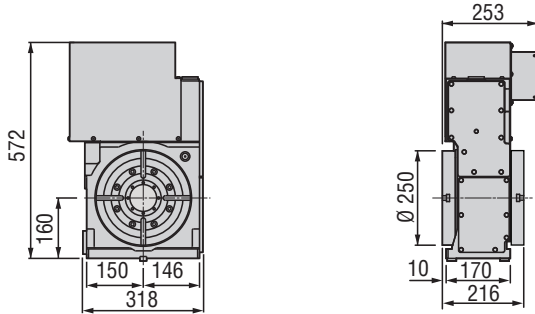
Specifications subject to change without notice

NC Rotary Tables ▶ Multi-Face Plate, Multi-Spindle Models

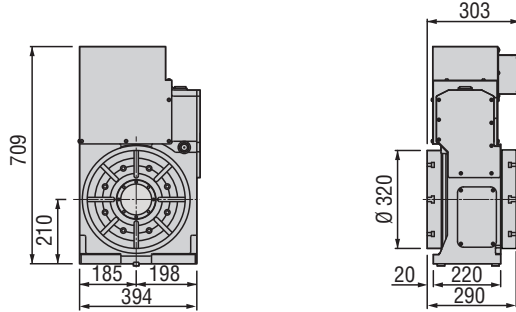
Dimensions

Drawings not to scale • Dimensions = mm

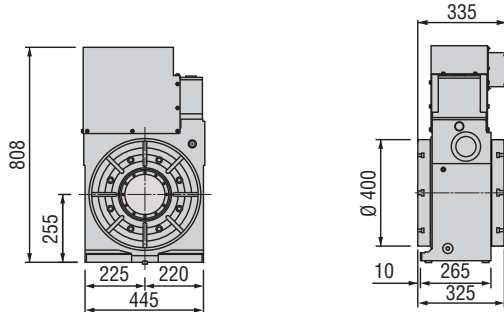
RWB-250K-2



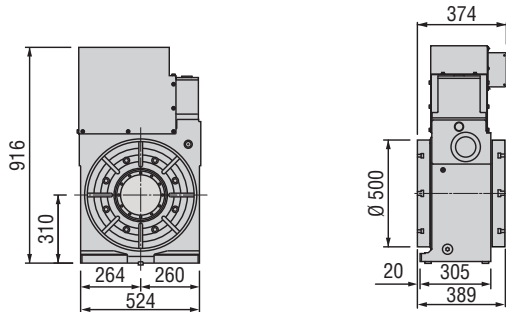
RWB-320K-2



RWB-400K-2



RWB-500K-2



The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

RWB-500K-2 with custom swivel box



RWB-500K-2 with custom swivel box



Options & Accessories

TPC NC Controller	p.64
Chucks	p.77
Tailstock	p.78
Support Spindle	p.80
Face Plate	p.80
Encoder / Scale	p.81
Pull Stud Device	p.82
Rotary Joint	p.82
Booster	p.83
PVC or Steel Cables	p.84

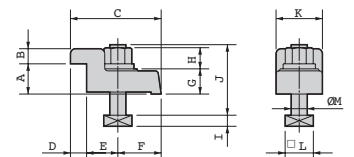
Clamping Block and Bolt

Dimensions = mm

	Type	Q'ty	T-Slot Width	A	B	C	D	E	F	G	H	I	J	K	L	M
RWB-250K-2	I	4	18	25	12	80	12	33	35	22	21	11	65	40	28	16
RWB-320K-2	I	4	18	30	15	90	16	31	43	25	21	11	70	46	28	16
RWB-400K-2	I	4	18	30	15	90	16	31	43	25	21	11	70	46	28	16
RWB-500K-2	I	4	18	40	20	110	18	42	50	25	21	11	70	46	28	16

Note: When using a machine with a T-slot pitch other than the above, use suitable clamping blocks and bolts that are available on the market, or order custom-made ones from KOMA (opt.)

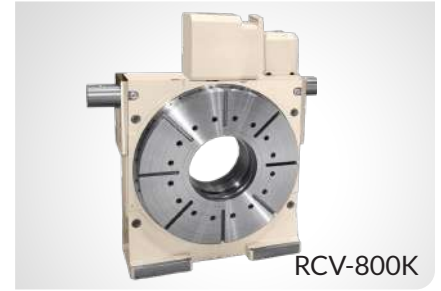
Type I



RCV-800K, 1000K, 1250K

HIGH CAPACITY • LARGE THRU HOLE

The RCV-Series rotary tables feature an extra large thru hole for accommodating large workpieces. The RCV-800 can be equipped with either an 800mm or an optional 1,000mm face plate, and the RCV-1000 can hold either a 1,000mm or an optional 1,200mm face plate.



RCV-800K

Table Model			RCV-800K	RCV-1000K	RCV-1250K
Table diameter (optional)	mm		800 (1,000)	1,000 (1,200)	1,250 (1,500)
Center height	mm		530	625	775
Center bore	Nose Diameter	mm	360H7 x 45	410H7 x 65	500H7 x 25
	Thru Diameter	mm	310	360	450
Table T-slot width			18H7	22H7	22H7
Guide block width			22h7		
Servo motor (Fanuc)*			Alpha 12i	Alpha 22i	Alpha 22i
Maximum motor speed	rpm		4,000	3,000	3,000
Speed reduction ratio			1/360	1/360	1/720
Maximum table speed	rpm		11.1	8.33	4.16
Inertia converted into motor shaft	x 10 ⁻³ kg·m ²		4.89	12.2	5.04
Clamp system**			Hydraulic		
Clamp torque @500psi	Nm (ft. lbs.)		7,000 (5,159)	20,000 (14,740)	33,000 (24,321)
Indexing accuracy	arc sec.		±7.5		
Repeatability	arc sec.		±2		
Net Weight	kg (lbs.)		1,450 (3,190)	2,500 (5,500)	4,850 (10,670)
Allowable wheel torque	Nm (ft. lbs.)		7,840 (5,778)	13,230 (9,751)	25,000 (18,425)
Allowable work inertia	kg·m ²		320	874	2,734
Allowable work weight	 kg (lbs) [w/ tailstock]		2,000 (4,400) [4,000 (8,000)]	3,500 (7,700) [7,000 (15,400)]	7,000 (15,400) [14,000 (30,800)]
	 kg (lbs)		4,000 (8,800)	7,000 (15,400)	14,000 (30,800)
Allowable load when table clamped	 N (lbf)		100,000 (22,400)	185,000 (41,440)	383,000 (85,792)
	 Nm (ft. lbs.)		7,000 (5,159)	20,000 (14,740)	33,000 (24,321)
	 Nm (ft. lbs.)		11,600 (8,550)	22,900 (16,877)	56,700 (41,788)

Dimensions = mm

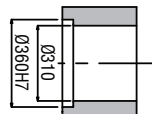
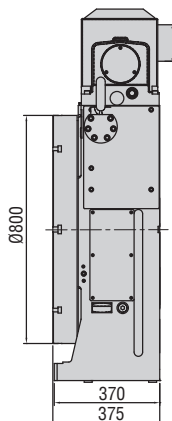
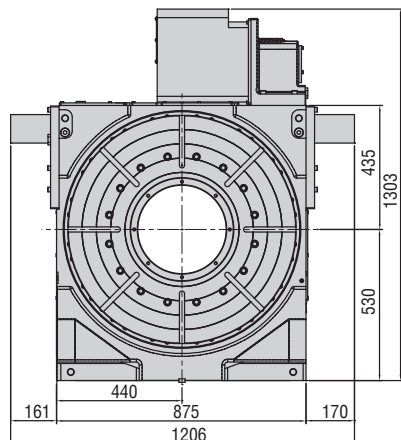
*Other motors & RPM available

**Booster optional

Specifications subject to change without notice

Drawings not to scale • Dimensions = mm

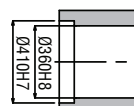
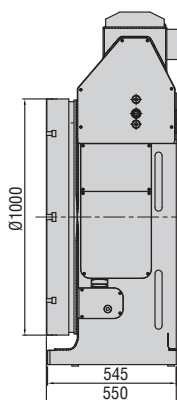
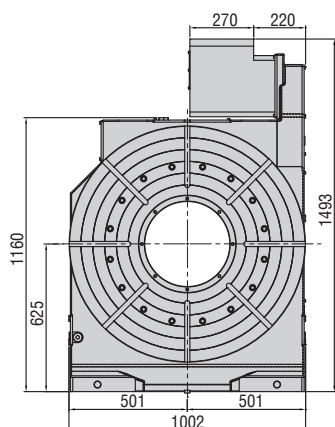
RCV-800K



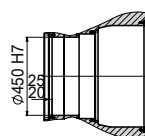
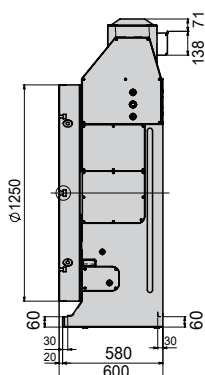
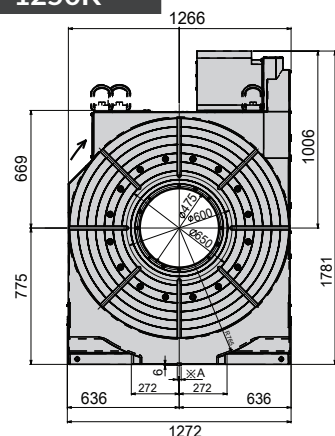
• RCV-800K



RCV-1000K



RCV-1250K



Options & Accessories

TPC NC Controller	p.64
Chucks	p.77
Tailstock	p.78
Support Spindle	p.80
Face Plate	p.80
Encoder / Scale	p.81
Pull Stud Device	p.82
Rotary Joint	p.82
Booster	p.83
PVC or Steel Cables	p.84

The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

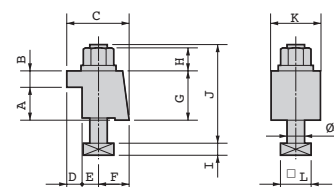
Clamping Block and Bolt

Dimensions = mm

	Type	Q'ty	T-Slot Width	A	B	C	D	E	F	G	H	I	J	K	L	M
RCV-800K	II	4	22	60	28	95	29	16	50	88	27	13	145	100	32	20
RCV-1000K	II	4	22	60	28	95	29	16	50	88	27	13	145	100	32	20
RCV-1250K	II	8	22	60	28	95	29	16	50	88	27	13	145	100	32	20

Note: When using a machine with a T-slot pitch other than the above, use suitable clamping blocks and bolts that are available on the market, or order custom-made ones from KOMA (opt.)

Type II



RT-147, 251

MULTI-FACE PLATE, MULTI-SPINDLE TABLE

The RT-147 and RT-251 have been designed for use on horizontal machining centers. The RT-147 and RT-251 are available with dual or quad face plates and can be accessorized with a swivel box for cable management. These tables are typically equipped with rotary joints for use in high production machining environments.



RT-147

Table Model			RT-147	RT-251
Table diameter		mm	160 x (2,4)	200 x (2,4)
Center height		mm	135 & 315	135 & 385
Center bore	Nose Diameter	mm	55H7	55H7
	Thru Diameter	mm	40	40
Table T-slot width			12H8	12H8
Guide block width			14h7	14h7
Servo motor (Fanuc)*			Alpha 4i	Alpha 4i
Maximum motor speed		rpm	5,000	5,000
Speed reduction ratio			1/90	1/90
Maximum table speed		rpm	55.5	55.5
Inertia converted into motor shaft		x 10 ⁻³ kg·m ²	.25	.25
Clamp system			Pneumatic	Hydraulic**
Clamp torque @72psi		Nm (ft. lbs.)	156 (115)	-
Clamp torque @500psi		Nm (ft. lbs.)	-	210 (154)
Indexing accuracy		arc sec.	±22.5	
Net Weight		kg (lbs.)	100 (220) quad	135 (297) quad
Allowable wheel torque		Nm (ft. lbs.)	147 (108)	264 (194)
Allowable work inertia		kg·m ²	.48	.48
Allowable work weight		kg (lbs)	75/face plate (165/face plate)	75/face plate (165/face plate)
Allowable load when table clamped		Nm (ft. lbs.)	156 (115)	264 (194)
		Nm (ft. lbs.)	392 (289)	392 (289)

* Other motors & RPM available

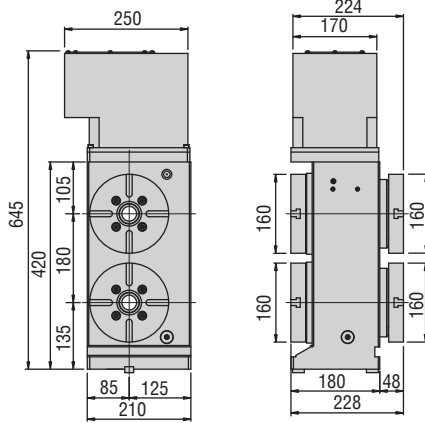
** Booster optional

Specifications subject to change without notice

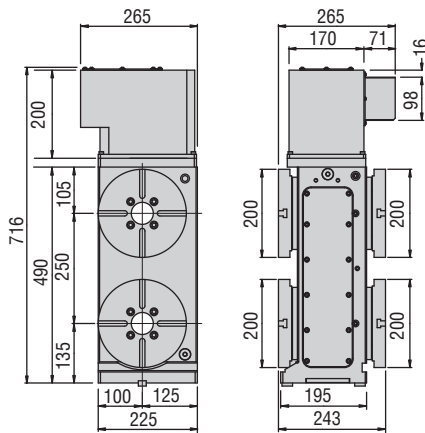
Dimensions

Drawings not to scale • Dimensions = mm

RT-147



RT-251



The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

RT-251

The RT-251 shown below is a twin spindle, quad face plate rotary table typically pallet mounted on a horizontal machining center. This table is equipped with an optional air/hydraulic booster and a swivel box for cable management.



Options & Accessories

TPC NC Controller	p.64
Chucks	p.77
Tailstock	p.78
Support Spindle	p.80
Face Plate	p.80
Encoder / Scale	p.81
Pull Stud Device	p.82
Rotary Joint	p.82
Booster	p.83
PVC or Steel Cables	p.84

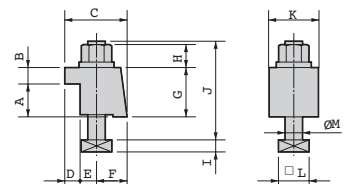
Clamping Block and Bolt

Dimensions = mm

	Type	Q'ty	T-Slot Width	A	B	C	D	E	F	G	H	I	J	K	L	M
RT-147	II	4	18	25	15	52	12	15	25	40	21	11	85	40	28	16
RT-251	II	4	18	25	15	52	12	15	25	40	21	11	85	40	28	16

Note: When using a machine with a T-slot pitch other than the above, use suitable clamping blocks and bolts that are available on the market, or order custom-made ones from KOMA (opt.)

Type II



RNCK-631, 631-BB

POWERFUL HYDRAULIC CLAMPING

The RNCK-Series rotary tables have been designed for use on horizontal machining centers. These tables are typically pallet mounted for use in high production machining environments.



Table Model			RNCK-631	RNCK-631-BB
Table diameter	mm		630	630
Center height	mm		400	400
Center bore	Nose Diameter	mm	60H6	320H7
	Thru Diameter	mm	60	320
Table T-slot width			18H7	18H7
Guide block width			18h7	18h7
Servo motor (Fanuc)*			Alpha 12i	Alpha 12i
Maximum motor speed	rpm		4,000	4,000
Speed reduction ratio			1/180	1/180
Maximum table speed	rpm		22.2	22.2
Inertia converted into motor shaft	$\times 10^{-3}\text{kg}\cdot\text{m}^2$		5.55	5.55
Clamp system**			Hydraulic	
Clamp torque @500psi	Nm (ft. lbs.)		4,410 (3,250)	4,410 (3,250)
Indexing accuracy	arc sec.		± 7.5	± 7.5
Net Weight	kg (lbs.)		800 (1,760)	800 (1,760)
Allowable wheel torque	Nm (ft. lbs.)		4,116 (3,033)	4,116 (3,033)
Allowable work inertia	$\text{kg}\cdot\text{m}^2$		39.7	39.7
Allowable work weight	 kg (lbs) [w/ tailstock]		400 (880) [800 (1,760)]	400 (880) [800 (1,760)]
Allowable load when table clamped	 N (lbf)		49,000 (10,976)	49,000 (10,976)
	 Nm (ft. lbs.)		4,410 (3,250)	4,410 (3,250)
	 Nm (ft. lbs.)		7,840 (5,778)	7,840 (5,778)

* Other motors & RPM available

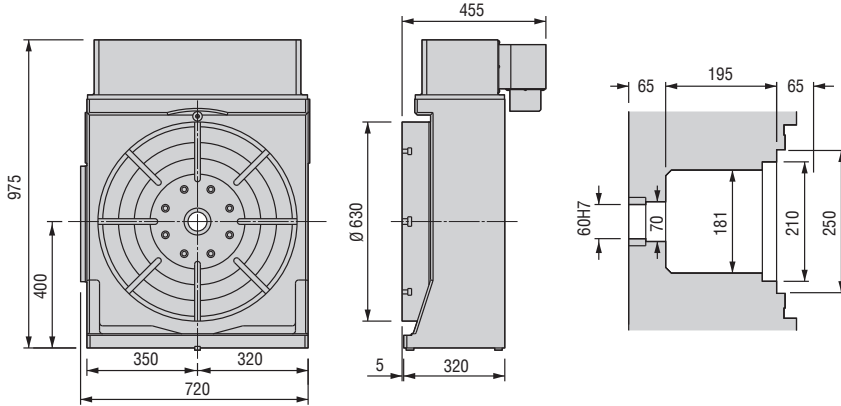
** Booster optional

Specifications subject to change without notice

Dimensions

Drawings not to scale • Dimensions = mm

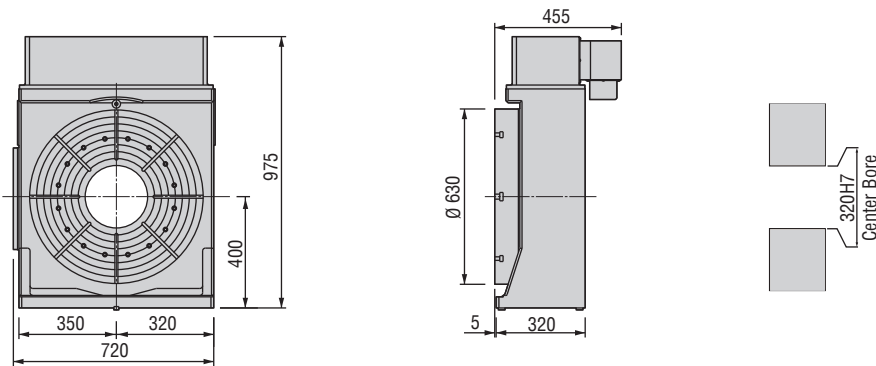
RNCK-631



RNCK-631 Optional Swivel Box



RNCK-631-BB

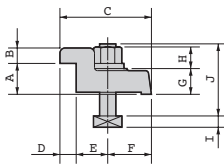


RNCK-631-BB

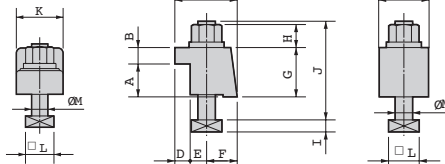


The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

Type I



Type II



Clamping Block and Bolt

Dimensions = mm

	Type	Q'ty	T-Slot Width	A	B	C	D	E	F	G	H	I	J	K	L	M
RNCK-631	II	4	18	40	18	63	18	15	30	58	21	11	105	60	28	16
RNCK-631-BB	II	4	18	40	18	63	18	15	30	58	21	11	105	60	28	16

Note: When using a machine with a T-slot pitch other than the above, use suitable clamping blocks and bolts that are available on the market, or order custom-made ones from KOMA (opt.)

Options & Accessories

TPC NC Controller	p.64
Chucks	p.77
Tailstock	p.78
Support Spindle	p.80
Face Plate	p.80
Encoder / Scale	p.81
Pull Stud Device	p.82
Rotary Joint	p.82
Booster	p.83
PVC or Steel Cables	p.84

TBS-130,H / 160,H / 250,H

TILTING BALL DRIVE SYSTEM ROTARY TABLES

High accuracy, high rigidity, energy saving and zero maintenance rotary tables. TBS Series tilt rotary tables are built using the ball drive system featuring advantages like zero backlash, improved cycle times, energy conservation and a lifetime adjustment-free transmission system.



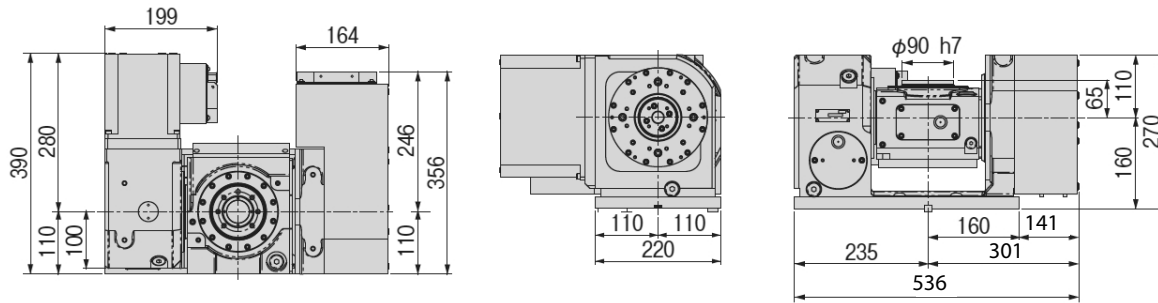
Model		TBS-130,H	TBS-160,H	TBS-250,H
Tilt Range		-30° ~ +110°	-30° ~ +110°	-30° ~ +110°
Spindle outer diameter		90h7	100h7	140H7
Table diameter (optional)		(135)	(160 or 200)	(250)
Table height at 0° position		225 (250 w/ faceplate)	270 (300 w/ faceplate)	290 (320 w/ faceplate)
Center height at 90° position		160	200	235
Center bore	Nose Diameter (w/faceplate)	55H7 (40H7)	55H7 (50H7)	80H7 (75H7)
	Thru Diameter	40	40	50
Table T-slot Width (with faceplate)		(12H8)	(12H8)	(12H8)
Servo motor*	Rotary	Alpha 2i	Alpha 2i	Alpha 2i
	Tilt	Alpha 2i	Alpha 4i	Alpha 8i
Maximum motor speed	rpm	5,000	5,000	5,000
Speed reduction ratio		1/48	1/60	1/60
Maximum table speed	rpm	104.2	83.3	83.3
Inertia converted into motor shaft	x 10 ⁻³ kg·m ²	.074	.072	.17
Clamp system		Pneumatic		
Holding torque @72psi	Nm (ft. lbs.)	700 (516)		1,000 (737)
Indexing accuracy	arc sec.	±10		
Tilting accuracy	arc sec.	±17.5		
Net Weight	kg (lbs.)	125 (276)	160 (353)	280 (617)
Allowable work inertia	kg·m ²	.08	.19	1.05
Allowable work weight kg (lbs)	0° tilt angle	35 (77)	60 (132)	135 (298)
	0° ~ 90° tilt angle	20 (44)	40 (88)	85 (187)
Allowable work moment	Nm (ft. lbs.)	61.1	59.6	186.7 (137)
Allowable load when table clamped	N (lbf)	3,920 (878)	10,800	14,400 (64,054)
	Nm (ft. lbs.)	700 (516)	700 (516)	1,000 (737)
	Nm (ft. lbs.)	700 (516)	700 (516)	1,000 (737)

* Other motors & RPM available • ** Booster optional • Specifications subject to change without notice

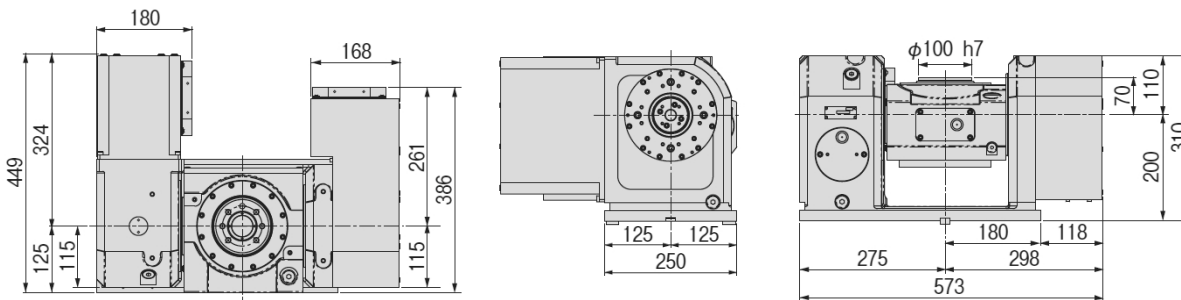
Dimensions

Drawings not to scale • Dimensions = mm

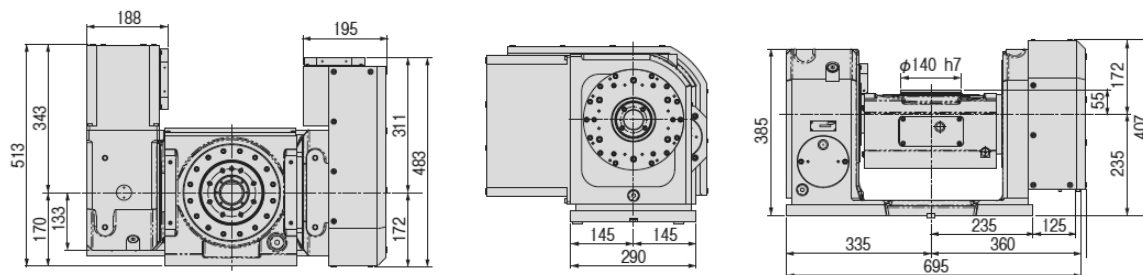
TBS-130,H



TBS-160,H



TBS-250,H



Options & Accessories

TPC NC Controller	p.64
Chucks	p.77
Tailstock	p.78
Support Spindle	p.80
Face Plate	p.80
Encoder / Scale	p.81
Pull Stud Device	p.82
Rotary Joint	p.82
Booster	p. 83
PVC or Steel Cables	p.84

The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

Clamping Block and Bolt

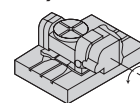
Dimensions = mm

	Type	Q'ty	Layout	T-Slot Width	A	B	C	D	E	F	G	H	I	J	K	L	M
TBS-130	I	4	a b	12	20	12	70	10	35	25	20	17	8	55	35	23	12
TBS-160	I	4	a b	12	20	12	70	10	35	25	17	15	11	55	35	28	16
TBS-250	I	4	a b	12	25	12	80	12	33	35	22	21	11	65	40	28	16

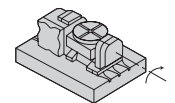
Note 1: In the case of layout B, contact us for details about mounting.

Note 2: When using a machine with a T-slot pitch other than the above, use suitable clamping blocks and bolts that are available on the market, or order custom-made ones from KOMA (opt.)

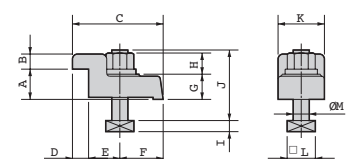
Layout a



Layout b



Type I



TN-101, 320 / TWA-130, 160, 200

POWERFUL, HIGH SPEED TILTING TABLES

The TWA-Series tables are top of the line, high speed, high power, high accuracy tilting rotary tables. The TN-101 and TWA-130 are ideal for use on drilling and tapping machines.

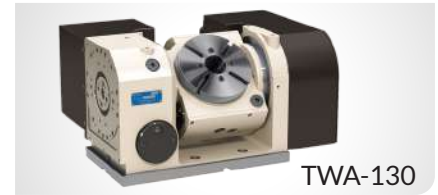
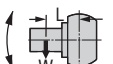


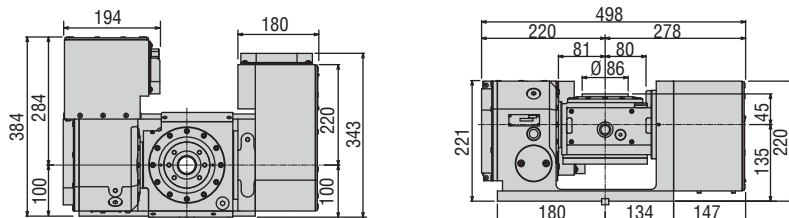
Table Model			TN-101		TWA-130		TWA-160		TWA-200		TN-320	
Tilt Range			-17° ~ +107°		-17° ~ +107°		-30° ~ +110°		-30° ~ +110°		-30° ~ +110°	
Spindle outer diameter		mm	86h7		90h7		100h7		120h7		-	
Table diameter (optional)		mm	(135)		(135)		(160 or 200)		(200 or 250)		320	
Table height at 0° position		mm	180 (205 w/face plate)		210 (235 w/face plate)		235 (260 w/face plate)		270 (300 w/face plate)		355	
Center height at 90° position		mm	135		150		180		210		255	
Center bore	Nose Diameter (w/ face plate)	mm	55H7 (40H7)		55H7 (40H7)		55H7 (50H7)		65H7 (60H7)		105H7	
	Thru Diameter	mm	35		35		40		45		102	
Table T-slot width			12H8 (w/ face plate)		12H8 (w/ face plate)		12H8 (w/ face plate)		12H8 (w/ face plate)		14H7	
Guide block width			14h7		14h7		18h7		18h7		18h7	
Servo motor (Fanuc)*			Rotary	Tilt	Rotary	Tilt	Rotary	Tilt	Rotary	Tilt	Rotary	Tilt
			Alpha 2i	Alpha 2i	Alpha 2i	Alpha 2i	Alpha 2i	Alpha 2i	Alpha 4i	Alpha 4i	Alpha 8i	Alpha 8i
Maximum motor speed		rpm	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	4,000	4,000
Speed reduction ratio			1/60	1/120	1/60	1/120	1/72	1/120	1/45	1/90	1/120	1/240
Maximum table speed		rpm	83.3	41.7	83.3	41.7	69.4	41.7	111.1	55.5	33.3	16.7
Inertia converted into motor shaft		x 10 ⁻³ kg·m ²	.072	.078	.074	.072	.17	.18	.38	.45	.82	.45
Clamp system			Pneumatic	Pneumatic	Pneumatic Dual Taper	Pneumatic Dual Taper	Pneumatic Dual Taper	Pneumatic Dual Taper	Pneumatic Dual Taper	Pneumatic Dual Taper	Hydraulic @500 psi**	Hydraulic @500 psi**
Clamp torque @72psi [500 psi]		Nm (ft. lbs.)	200 (147)	300 (221)	500 (369)	500 (369)	500 (369)	800 (590)	800 (590)	1,000 (737)	[2,200] [(1,621)]	[2,200] [(1,621)]
Indexing accuracy		arc sec.	±20	-	±20	-	±15	-	±15	-	±10	-
Tilting accuracy		arc sec.	-	±22.5	-	±22.5	-	±22.5	-	±22.5	-	±22.5
Net Weight		kg (lbs.)	65 (143)		76 (167)		127 (279)		190 (418)		440 (968)	
Allowable wheel torque - rotary		Nm (ft. lbs.)	152 (112)		152 (112)		200 (147)		450 (332)		931 (686)	
Allowable work inertia		kg·m ²	.08		.08		.19		.59		1.53	
Allowable work weight	0° tilt angle 	kg (lbs)	35 (77)		35 (77)		60 (132)		120 (264)		150 (330)	
	0° ~ 90° tilt angle 	kg (lbs)	20 (44)		20 (44)		40 (88)		70 (154)		100 (220)	
Allowable work moment		Nm (ft. lbs.)	24 (17.7)		24 (17.7)		39.2 (28.9)		53.7 (39.6)		163.3 (120.4)	
Allowable load when table clamped		N (lbf)	3,920 (878)		3,920 (878)		7,840 (1,756)		13,720 (3,073)		19,600 (4,390)	
		Nm (ft. lbs.)	200 (147)		500 (369)		500 (369)		800 (590)		2,200 (1,621)	
		Nm (ft. lbs.)	300 (221)		500 (369)		800 (590)		1,000 (737)		2,200 (1,621)	

* Other motors & RPM available • ** Booster optional • Specifications subject to change without notice

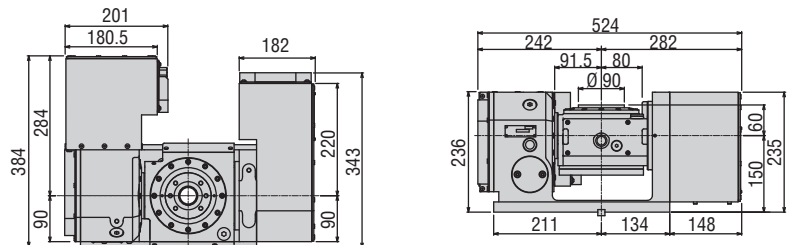
Dimensions

Drawings not to scale • Dimensions = mm

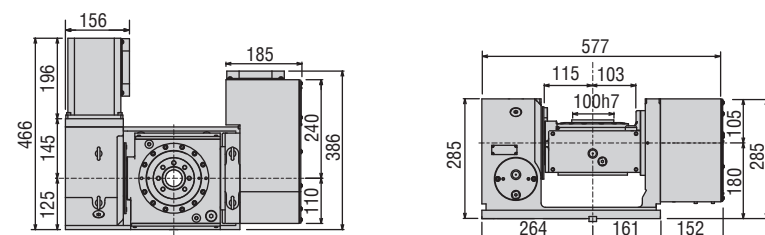
TN-101



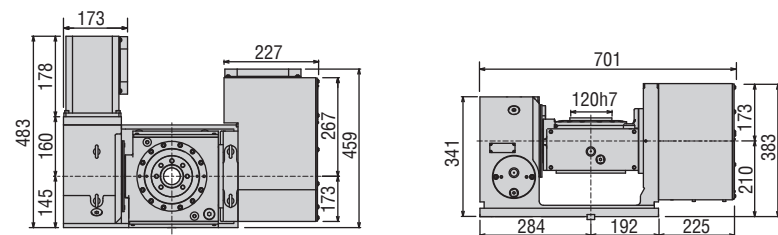
TWA-130



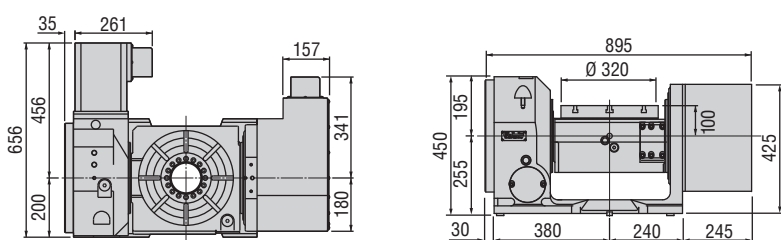
TWA-160



TWA-200



TN-320



The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

Clamping Block and Bolt

Dimensions = mm

	Type	Q'ty	Layout	T-Slot Width	A	B	C	D	E	F	G	H	I	J	K	L	M
TN-101	I	4	a b	14	20	12	70	10	35	25	20	12	8	50	35	23	12
TWA-130	I	4	a b	14	20	12	70	10	35	25	20	17	8	55	35	23	12
TWA-160	I	4	a b	18	20	12	70	10	35	25	17	15	11	55	35	28	16
TWA-200	I	4	a b	18	25	12	80	12	33	35	22	21	11	65	40	28	16
TN-320	I	4	a b	18	25	12	80	12	33	35	22	21	11	65	40	28	16

Note 1: In the case of layout B, contact us for details about mounting.

Note 2: When using a machine with a T-slot pitch other than the above, use suitable clamping blocks and bolts that are available on the market, or order custom-made ones from KOMA (opt.)

WORKPIECE MOUNTING SPACE FOR TILTING ROTARY TABLES

	0° ~ +90°	0° ~ +107°	-17° ~ 0°
TN-101			
TWA-130			
TWA-160			
TWA-200			
TN-320			

Note: To ensure workpiece, rotary table, and machine tool integration, contact KOMA for 3D CAD support.

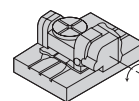
TWA-130 Pull Stud Option



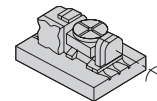
Options & Accessories

TPC NC Controller	p.64
Chucks	p.77
Tailstock	p.78
Support Spindle	p.80
Face Plate	p.80
Encoder / Scale	p.81
Pull Stud Device	p.82
Rotary Joint	p.82
Booster	p.83
PVC or Steel Cables	p.84

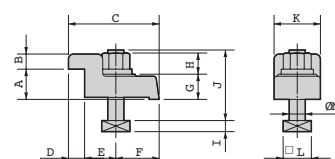
Layout a



Layout b



Type I



RTT-111,CA

DROP TRUNNION • EQUIPPED TO UTILIZE A VARIETY OF WORKHOLD SYSTEMS

For five axis machining, the RTT with its pallet system allows for unprecedented access (five sides) to the part. Parts that are held with vises, chucks, and clamps limit the access (up to four sides), thus decreasing the efficiency of the process. Because the RTT turns on center, shorter tools and less spindle travel is required. The uniqueness of the pallet system also creates a lower profile than parts that are held with vises, chucks, and clamps thus increases the rigidity. Two pneumatic rotary joints on the rotary axis allow automated clamping/un-clamping of a number of chuck & pallet system.



RTT-111,CA

RTT-111,CA

Drop Trunnion Rotary Table

HIGH SPEED
SMALL FOOTPRINT



3R Chuck & Pallet



Erowa Chuck & Pallet



Northfield 5C



Northfield 2 Jaw Chuck
Northfield 3 Jaw Chuck



Hirschmann Chuck



Standard Faceplate

Equipped to utilize a variety of workhold systems.

system 3R

EROWA 

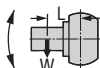
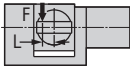
NORTHFIELD
Precision Instrument Corporation

HIRSCHMANN

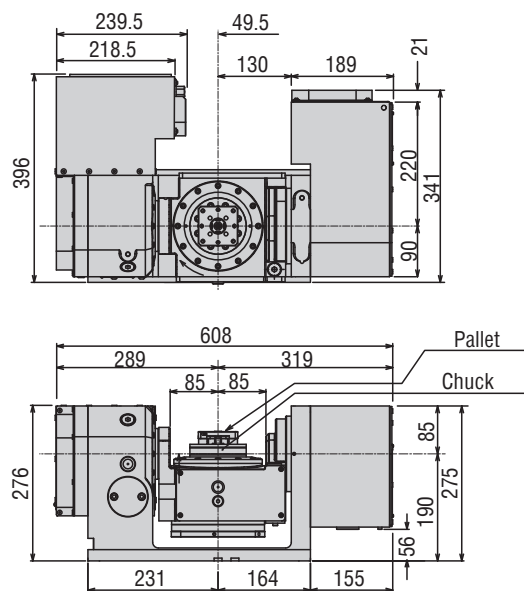
Dimensions

Drawings not to scale • Dimensions = mm

RTT-111, CA

Model		RTT-111,CA	
Tilt Range		-17° ~ +107°	
Spindle Output		See Options & Accessories	
Height at 0° position (w/out chuck)	mm	190	
Center height at 90° position	mm	190	
Guide block width		14h7	
Servo motor (Fanuc)*		Rotary	Tilt
		Alpha 2i	Alpha 2i
Maximum motor speed	rpm	5,000	5,000
Speed reduction ratio		1/60	1/120
Maximum table speed	rpm	83.3	41.7
Inertia converted into motor shaft	x 10 ⁻³ kg·m ²	.074	.072
Clamp system		Pneumatic Dual Taper	Pneumatic Dual Taper
Clamp torque @72psi	Nm (ft. lbs.)	500 (369)	500 (369)
Indexing accuracy	arc sec.	±20	-
Tilting accuracy	arc sec.	-	±30
Net Weight	kg (lbs.)	98 (216)	
Allowable wheel torque - rotary	Nm (ft. lbs.)	152 (112)	
Allowable work inertia		kg·m ²	
Allowable work weight kg (lbs)		0° tilt angle	35 (77)
		0° ~ 90° tilt angle	20 (44)
Allowable work moment		Nm (ft. lbs.)	57 (42)
Allowable load when table clamped		N (lbf)	3,920 (878)
		Nm (ft. lbs.)	500 (369)
		Nm (ft. lbs.)	500 (369)

* Other motors & RPM available
Specifications subject to change without notice



The dimensions above are for tables with a FANUC servo motor.
Other motors available (dimensions may increase).

Options & Accessories

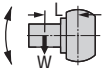
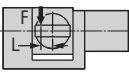
3R Chuck, Pallet & Draw Bar System	
Chuck	3R-600.86-30
70mm x 70mm Pallet	3R-601.7E-P
Draw Bar	3R-605.1
Erowa Chuck & Pallet System	
Chuck	ER-007625
Pallet	ER-032731
Northfield	
5C	TA-02900-00
4"-2 Jaw Chuck	call
4"-3 Jaw Chuck	TA-02970-00
Hirschmann	
Chuck	H6.11.10
Koma	
Face Plate	call

TTNC-102-2, 101-4, 151-2, 201-2

MULTI-SPINDLE FOR HIGH PRODUCTION

Multiple spindle tilting rotary tables for high production 4th & 5th axis machining. These tables are suitable for simultaneous machining of multiple workpieces with complex shapes or five faces.



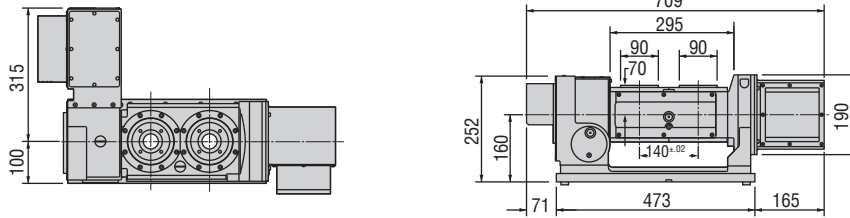
Table Model			TTNC-102-2		TTNC-101-4		TTNC-151-2		TTNC-201-2	
Tilt Range			-17° ~ +107°		-110° ~ +110°		-110° ~ +110°		-110° ~ +110°	
Minimum table center distance			140		120		250		304.8	
Spindle outer diameter mm			90h7		80h7		-		-	
Table diameter (optional) mm			(135)		(115)		160		225	
Table height at 0° position (w/ face plate) mm			230 (255)		275 (300)		270		350	
Center height at 90° position mm			160		200		200		260	
Center bore	Nose Diameter (w/ face plate) mm		55H7 (40H7)		50H7 (50H7)		35H7		40H7	
	Thru Diameter mm		35		30		35		32	
Table T-slot width (w/ face plate)			(12H8)		(10H8)		12H7		12H7	
Guide block width			14h7		18h7		18h7		18h7	
Servo motor (Fanuc)*			Rotary	Tilt	Rotary	Tilt	Rotary	Tilt	Rotary	Tilt
			Alpha 2i	Alpha 2i	Alpha 8i	Alpha 8i	Alpha 4i	Alpha 8i	Alpha 8i	Alpha 12i
Maximum motor speed rpm			5,000	5,000	4,000	4,000	5,000	4,000	4,000	4,000
Speed reduction ratio			1/90	1/180	1/60	1/90	1/90	1/90	1/90	1/120
Maximum table speed rpm			55.6	27.8	66.7	44.4	55.5	44.4	44.4	33.3.
Inertia converted into motor shaft x 10 ⁻³ kg·m ²			.20	.06	.52	1.08	.45	1.09	.48	3.2
Clamp system			Pneumatic	Pneumatic	Pneumatic	Hydraulic**	Pneumatic	Hydraulic**	Hydraulic**	Hydraulic**
Clamp torque @72psi [500 psi] Nm (ft. lbs.)			127 (94)	284 (209)	80 (59)	[980] [(722)]	78 (57)	[1,000] [(737)]	[490] [(361)]	[2,450] [(1,806)]
Indexing accuracy arc sec.			±20	-	±30	-	±15	-	±7.5	-
Tilting accuracy arc sec.			-	±22.5	-	±30	-	±30	-	±30
Net Weight kg (lbs.)			100 (220)		370 (814)		340 (748)		550 (1,210)	
Allowable wheel torque - rotary Nm (ft. lbs.)			93 (69)		176 (130)		147 (108)		470 (346)	
Allowable work inertia kg·m ²			0.08		0.05		0.19		0.63	
Allowable work weight	0° tilt angle		Kg (lbs)	35 (77)	25 (55)		40 (88)		50 (110)	
	0° ~ 90° tilt angle		kg (lbs)	20 (44)	25 (55)		40 (88)		50 (110)	
Allowable work moment		Nm (ft. lbs.)	54.8 (40.4)	176 (129.7)		156.8 (115.6)		254.8 (187.8)		
Allowable load when table clamped		N (lbf)	1,960 (439)	1,960 (439)		6,860 (1,537)		9,800 (2,195)		
		Nm (ft. lbs.)	127 (93.6)	80 (59)		78 (57.5)		490 (361)		
		Nm (ft. lbs.)	284 (209)	980 (722)		980 (722)		2,450 (1,806)		

* Other motors & RPM available • ** Booster optional • Specifications subject to change without notice

Dimensions

Drawings not to scale • Dimensions = mm

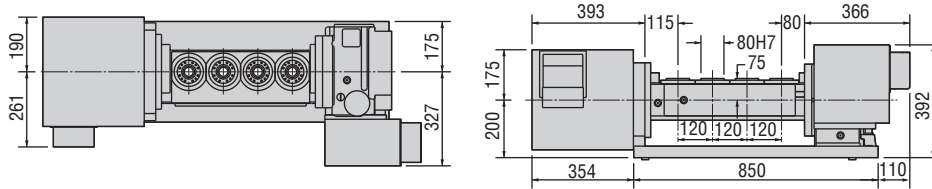
TTNC-102-2



TTNC-101-4 5C Collet Option



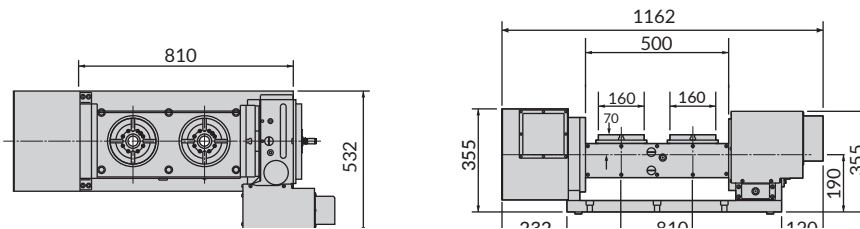
TTNC-101-4



TTNC-151-2 RJ Rotary Joint Option



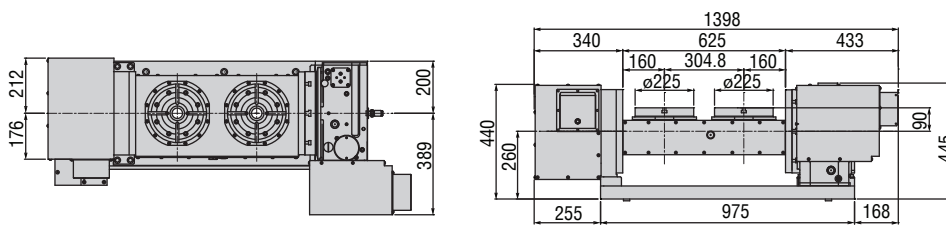
TTNC-151-2



TTNC-201-2



TTNC-201-2



Options & Accessories

TPC NC Controller	p.64
Chucks	p.77
Tailstock	p.78
Support Spindle	p.80
Face Plate	p.80
Encoder / Scale	p.81
Pull Stud Device	p.82
Rotary Joint	p.82
Booster	p.83
PVC or Steel Cables	p.84

The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

Clamping Block and Bolt

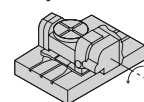
Dimensions = mm

	Type	Q'ty	Layout	T-Slot Width	A	B	C	D	E	F	G	H	I	J	K	L	M
TTNC-102-2	I	4	a b	14	20	12	70	10	35	25	20	17	8	55	35	23	12

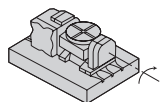
Note 1: In the case of layout b, contact us for details about mounting.

Note 2: When using a machine with a T-slot pitch other than the above, use suitable clamping blocks and bolts that are available on the market, or order custom-made ones from KOMA (opt.)

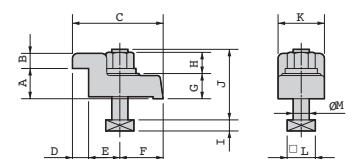
Layout a



Layout b



Type I



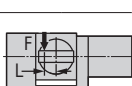
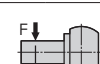
TN-450 | TTNC- 631, 1001, 1500

LARGE, HIGH POWER TILTING TABLE

These large tilting tables feature massive hydraulic clamping torque and enable 5-face and slanted-hole machining with single chucking of workpiece. They are suitable for machining of component parts for heavy industries such as aerospace, power generator and construction.



TTNC-1500

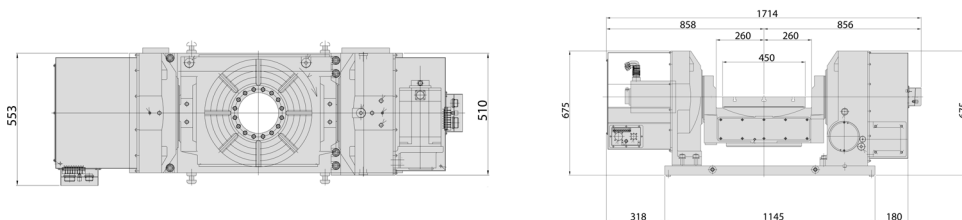
Table Model			TN-450		TTNC-631		TTNC-1001		TTNC-1500	
Tilt Range			-10° ~ +95°		-10° ~ +95°		-20° ~ +110°		-30° ~ +95°	
Table diameter		mm	450		630		1,000		1,500	
Table height at 0° position		mm	425		585		900		1,155	
Center height at 90° position		mm	325		450		700		1,055	
Center bore	Nose Diameter	mm	140H7		180H6		75H7		75H7	
	Thru Diameter	mm	140		180		-		-	
Table T-slot width			14H7		18H7		22H7		28H7	
Guide block width			18h7		18h7		-		-	
Servo motor (Fanuc)*			Rotary	Tilt	Rotary	Tilt	Rotary	Tilt	Rotary	Tilt
			Alpha 12i	Alpha 12i	Alpha 12i	Alpha 12i	Alpha 22i	Alpha 30i	Alpha 30i	Alpha 30i
Maximum motor speed		rpm	4,000	4,000	4,000	4,000	3,000	2,000	2,000	2,000
Speed reduction ratio			1/180	1/360	1/180	1/360	1/360	1/1,440	1/720	1/1,440
Maximum table speed		rpm	22.2	11.1	22.2	11.1	8.3	1.4	2.7	1.4
Inertia converted into motor shaft		x 10 ⁻³ kg.m ²	1.98	2.7	5.42	3.77	4.37	4.1	5.37	7.46
Clamp system**			Hydraulic @500psi	Hydraulic @500psi	Hydraulic @500psi	Hydraulic @500psi	Hydraulic @1,000psi	Hydraulic @1,000psi	Hydraulic @500psi	Hydraulic @500psi
Clamp torque		Nm (ft. lbs.)	980 (722)	980 (722)	4,410 (3,250)	2,352 (1,733)	9,800 (7,223)	19,600 (14,445)	12,000 (8,844)	12,500 x (2) (9,213) x (2)
Indexing accuracy		arc sec.	±7.5	-	±7.5	-	±7.5	-	±10	-
Tilting accuracy		arc sec.	-	±30	-	±30	-	±30	-	±22.5 (scale)
Net Weight			kg (lbs.)		780 (1,716)		1,700 (3,740)		4,600 (10,120)	
Allowable wheel torque - rotary			Nm (ft. lbs.)		1,666 (1,228)		3,284 (4,420)		13,230 (9,751)	
Allowable work inertia			kg.m ²		5.1		29.7		312.6	
Allowable work weight	0° tilt angle	 kg (lbs)	200 (440)		600 (1,320)		2,500 (5,500)		2,500 (5,500)	
	0° ~ 90° tilt angle	 kg (lbs)	150 (330)		300 (660)		1,500 (3,300)		1,500 (3,300)	
Allowable work moment	 Nm (ft. lbs.)	294 (217)		980 (722)		7,840 (5,778)		7,840 (5,778)		
Allowable load when table clamped	 N (lbf)	19,600 (4,390)		24,500 (5,488)		29,400 (6,587)		49,000 (10,976)		
	 Nm (ft. lbs.)	980 (722)		4,410 (3,250)		9,800 (7,223)		12,000 (8,844)		
	 Nm (ft. lbs.)	980 (722)		2,352 (1,733)		19,600 (14,445)		12,500 x (2) (9,213) x (2)		

* Other motors & RPM available • ** Booster optional • Specifications subject to change without notice

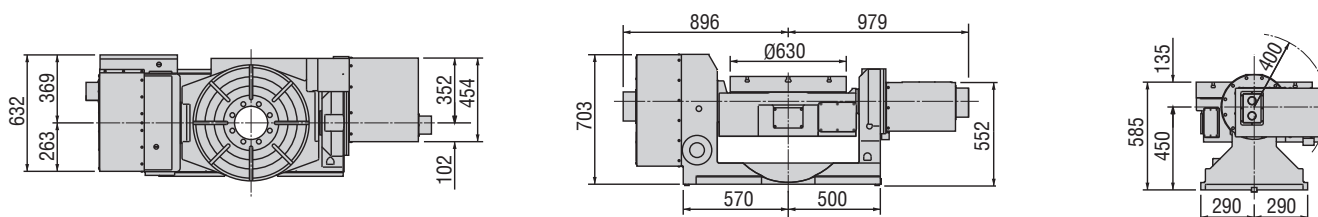
Dimensions

Drawings not to scale • Dimensions = mm

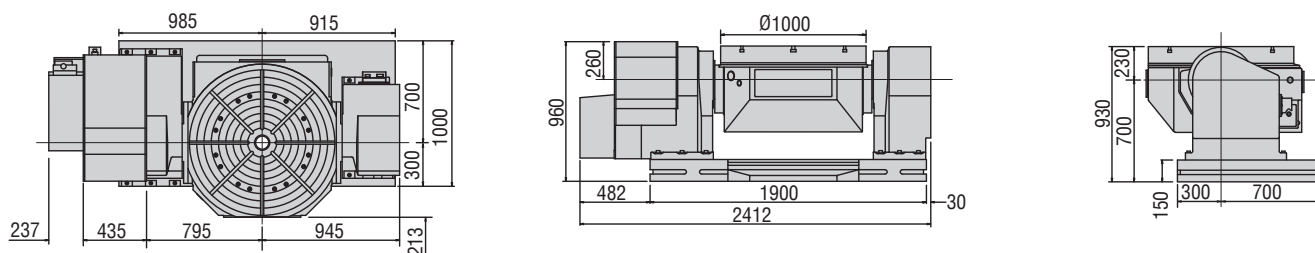
TN-450



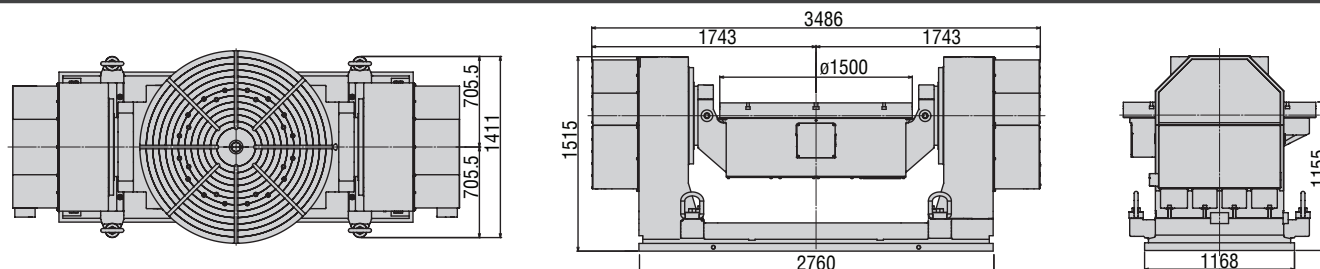
TTNC-631



TTNC-1001

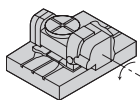


TTNC-1500

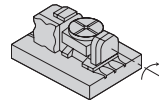


The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

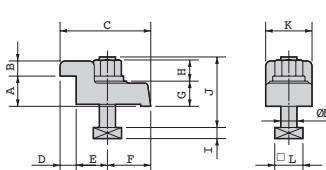
Layout a



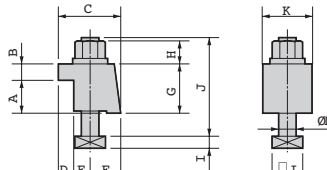
Layout b



Type I



Type II



Clamping Block and Bolt

Dimensions = mm

	Type	Q'ty	Layout	T-Slot Width	A	B	C	D	E	F	G	H	I	J	K	L	M
TTNC-451	I	4	a b	18	40	20	109	18	42	50	25	21	11	70	46	28	16
TTNC-631	I	4	a b	18	40	20	110	18	42	50	25	21	11	70	46	28	16
TTNC-1001	II	8	-	24	50	20	74	20	18	36	70	29	16	130	70	40	22
TTNC-1500	II	10	-	28	60	28	95	29	16	50	95	22	17.5	146	100	41.3	24

Note 1: In the case of layout b, contact us for details about mounting.

Note 2: When using a machine with a T-slot pitch other than the above, use suitable clamping blocks and bolts that are available on the market, or order custom-made ones from KOMA (opt.)

Options & Accessories

TPC NC Controller	p.64
Chucks	p.77
Tailstock	p.78
Support Spindle	p.80
Face Plate	p.80
Encoder / Scale	p.81
Pull Stud Device	p.82
Rotary Joint	p.82
Booster	p.83
PVC or Steel Cables	p.84

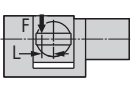
THNC-251, 301

ROTARY/TILT TABLE WITH MANUAL TILT

The THNC-Series tables have a NC controlled rotary axis and a manual tilt axis. The highly rigid body incorporates a powerful hydraulic clamp mechanism.



THNC-301

Table Model			THNC-251		THNC-301	
Tilt Range			0° ~ +93°			
Table diameter		mm	250		320	
Table height at 0° position		mm	230		265	
Center height at 90° position		mm	210		235	
Center bore	Nose Diameter	mm	40H7		40H7	
	Thru Diameter	mm	32		40	
Table T-slot width			12H7		14H7	
Guide block width			18h7		18h7	
Servo motor (Fanuc)*			Rotary	Tilt	Rotary	Tilt
			Alpha 4i	Manual	Alpha 8i	Manual
Maximum motor speed		rpm	5,000	-	4,000	-
Speed reduction ratio			1/180	-	1/180	-
Maximum table speed		rpm	33.3	-	22.2	-
Inertia converted into motor shaft		x 10 ⁻³ kg·m ²	.24	-	.34	-
Clamp system			Hydraulic** @500psi	Manual @19.6 Nm (14.4 ft.lbs.)	Hydraulic** @500psi	Manual @35.3 Nm (26 ft.lbs.)
Clamp torque		Nm (ft. lbs.)	490 (361)	490 (361)	833 (614)	1,862 (1,372)
Indexing accuracy		arc sec.	±7.5	±30	±7.5	±30
Net Weight		kg (lbs.)	125 (275)		180 (396)	
Allowable wheel torque - rotary		Nm (ft. lbs.)	470 (346)		764 (563)	
Allowable work inertia		kg·m ²	.62		2.25	
Allowable work weight	0° tilt angle	 kg (lbs)	80 (176)		200 (440)	
	0° ~ 90° tilt angle	 kg (lbs)	40 (88)		100 (220)	
Allowable load when table clamped		 N (lbf)	6,860 (1,537)		9,800 (2,195)	
		 Nm (ft. lbs.)	490 (361)		833 (614)	
		 Nm (ft. lbs.)	490 (361)		1,862 (1,372)	

* Other motors & RPM available

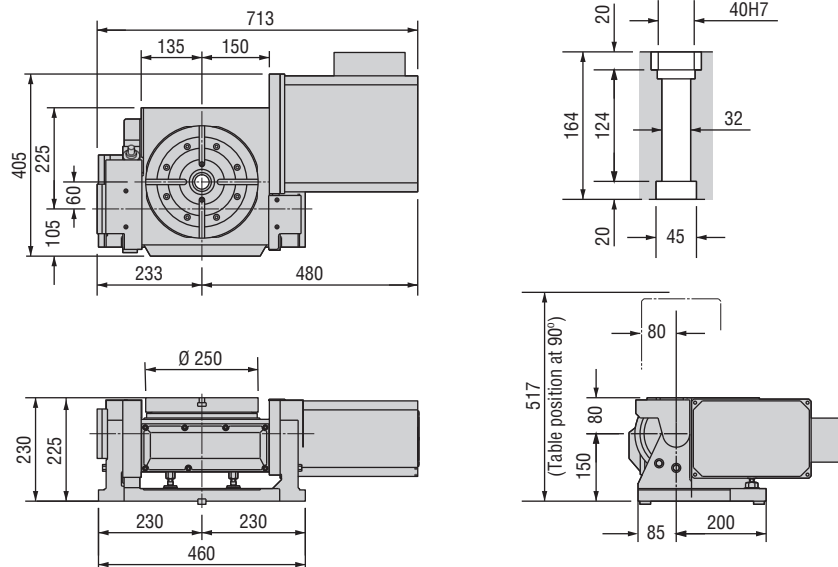
** Booster optional

Specifications subject to change without notice

Dimensions

Drawings not to scale • Dimensions = mm

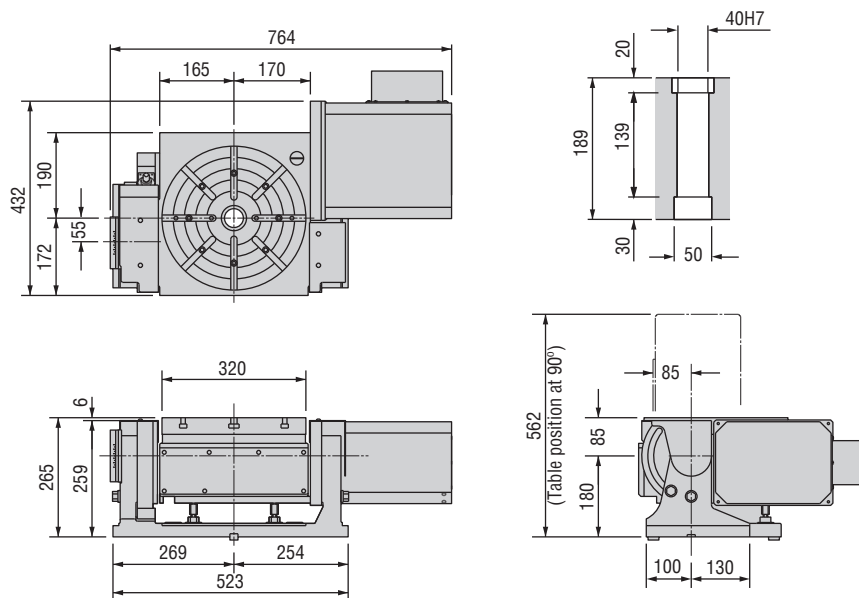
THNC-251



OPTIONAL TPC5 SERIES NC Controller



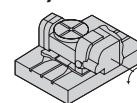
THNC-301



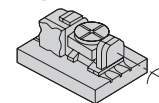
Options & Accessories

TPC NC Controller	p.64
Chucks	p.77
Tailstock	p.78
Support Spindle	p.80
Face Plate	p.80
Encoder / Scale	p.81
Pull Stud Device	p.82
Rotary Joint	p.82
Booster	p.83
PVC or Steel Cables	p.84

Layout a



Layout b



The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

Clamping Block and Bolt

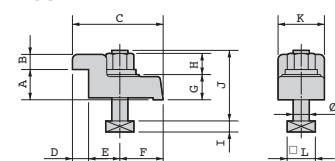
Dimensions = mm

	Type	Q'ty	Layout	T-Slot Width	A	B	C	D	E	F	G	H	I	J	K	L	M
THNC-251	I	4	a b	18	25	12	80	12	33	35	22	21	11	65	40	28	16
THNC-301	II	4	a b	18	25	15	52	12	15	25	40	21	11	85	40	28	16

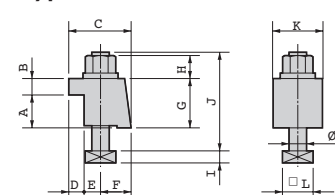
Note 1: In the case of layout b, contact us for details about mounting.

Note 2: When using a machine with a T-slot pitch other than the above, use suitable clamping blocks and bolts that are available on the market, or order custom-made ones from KOMA (opt.)

Type I



Type II



RCH-800L, 1000L, 1250L | RNC-1501L, 2001L

HEAVY DUTY TABLES • LARGE PART CAPACITY

The RNC-Series extra large, high capacity rotary tables are designed for horizontal use only. The RNC tables feature high rigidity and massive clamp torque for extremely accurate machining of heavy workpieces.



RNC-1250L

Table Model		RCH-800	RCH-1000	RCH-1250	RNC-1501	RNC-2001
Versions Available		L	L	L	L	L
Table diameter	mm	800	1,000	1,250	1,500	2,000
Table height	mm	320	330	410	400	620
Center bore	Nose Diameter mm	60H7	75H7	75H7	75H7	225H7
Table T-slot width		18H7	22H7	22H7	28H7	28H7
Guide block width		22h7	-	-	-	-
Servo motor (Fanuc)*		Alpha 12i	Alpha 22i	Alpha 22i	Alpha 22i	Alpha 30i
Maximum motor speed	rpm	4,000	3,000	3,000	3,000	2,000
Speed reduction ratio		1/360	1/360	1/720	1/720	1/720
Maximum table speed	rpm	11.1	8.3	4.2	4.2	2.8
Inertia converted into motor shaft	$\times 10^{-3}\text{kg}\cdot\text{m}^2$	4.3	12.8	5.2	5.6	17.2
Clamp system**		Hydraulic				
Clamp torque @500psi	Nm (ft. lbs.)	7,000 (5,056)	20,000 (14,740)	33,000 (24,321)	9,800 (7,223)	19,600 (14,445)
Indexing accuracy	arc sec.	± 7.5				
Net Weight	kg (lbs.)	1,200 (2,640)	1,500 (3,300)	3,100 (6,820)	3,600 (7,920)	8,000 (17,600)
Allowable wheel torque	Nm (ft. lbs.)	7,840 (5,778)	13,230 (9,751)	21,560 (15,890)	21,560 (15,890)	49,000 (36,113)
Allowable work inertia	$\text{kg}\cdot\text{m}^2$	120	392	2,255	2,255	4,900
Allowable work weight	 kg (lbs)	3,000 (6,600)	7,000 (15,400)	14,000 (30,800)	14,000 (30,800)	36,000 (79,200)
Allowable load when table clamped	 N (lbf)	83,000 (18,592)	164,000 (36,736)	383,000 (50,400)	265,000 (59,360)	397,000 (88,928)
	 Nm (ft. lbs.)	6,860 (5,056)	20,000 (14,740)	33,000 (24,321)	9,800 (7,223)	19,600 (14,445)
	 Nm (ft. lbs.)	10,400 (7,664)	19,700 (14,518)	33,400 (24,615)	46,800 (34,491)	93,100 (68,614)

* Other motors & RPM available

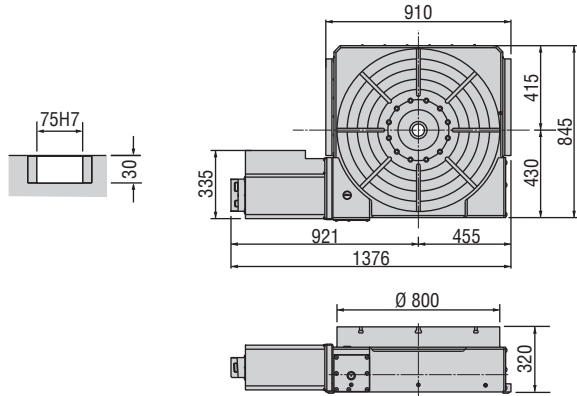
** Booster optional

Specifications subject to change without notice

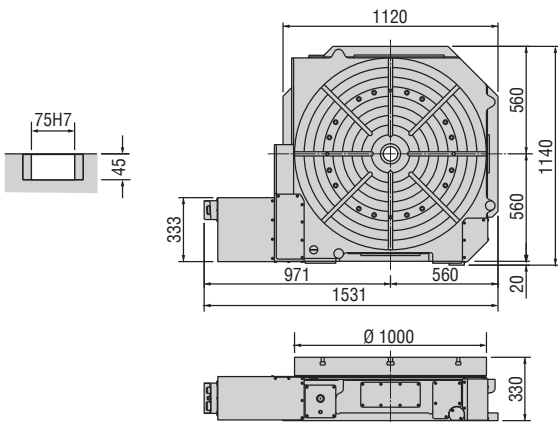
Dimensions

Drawings not to scale • Dimensions = mm

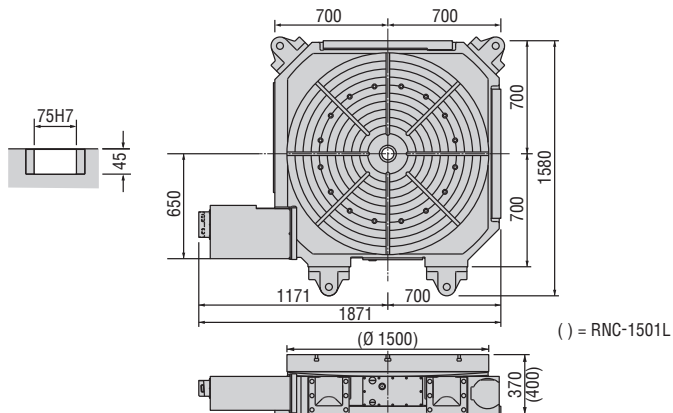
RCH-800L



RCH-1000L



RNC-1501L



The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

Clamping Block and Bolt

Dimensions = mm

	Type	Q'ty	T-Slot Width	A	B	C	D	E	F	G	H	I	J	K	L	M
RCH-800L	II	4	22	40	20	85	24	20	41	60	27	13	115	80	32	20
RCH-1000L	II	4~8	22	40	20	85	24	20	41	60	27	13	115	80	32	20
RCH-1250L	II	4~8	22	50	20	74	20	18	36	70	27	13	130	70	32	20
RNC-1501L	IV	4~8	28	50	20	74	20	18	36	77	15	17.5	120	70	41	24
RNC-2001L	IV	4~8	28	50	20	74	20	18	36	76	22	24	120	70	41	24

Note: When using a machine with a T-slot pitch other than the above, use suitable clamping blocks and bolts that are available on the market, or order custom-made ones from KOMA (opt.)

RNC-2001L



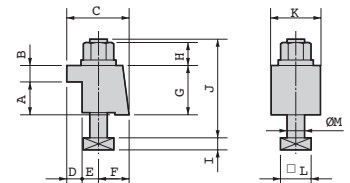
OPTIONAL TPC5 SERIES NC Controller



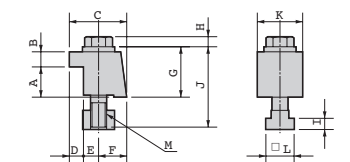
Options & Accessories

TPC NC Controller	p.64
Chucks	p.77
Tailstock	p.78
Support Spindle	p.80
Face Plate	p.80
Encoder / Scale	p.81
Pull Stud Device	p.82
Rotary Joint	p.82
Booster	p.83
PVC or Steel Cables	p.84

Type II



Type IV



RC-250, 300, 400, 500

HORIZONTAL SETTING WITH ROTARY JOINT

RC-Series rotary tables are designed for integration into a specialized machine tool or transfer line. RC-Series tables feature extra rigid castings for heavy duty applications. Standard equipment for RC-Series tables includes a built-in (8) port hydraulic/pneumatic rotary joint unit and (1) coolant port.



RC-300

Table Model		RC-250	RC-300	RC-400	RC-500
Table diameter	mm	250	320	400	500
Table height	mm	230	250	260	270
Servo motor (Fanuc)*		Alpha 8i	Alpha 12i	Alpha 22i	Alpha 22i
Maximum motor speed	rpm	4,000	4,000	3,000	3,000
Speed reduction ratio		1/36	1/45	1/45	1/90
Maximum table speed	rpm	111.1	88.8	66.7	33.3
Inertia converted into motor shaft	$\times 10^{-3}\text{kg}\cdot\text{m}^2$	.68	1.36	2.30	3.60
Clamp system**		Hydraulic			
Clamp torque @500psi	Nm (ft. lbs.)	540 (398)	900 (663)	1,900 (1,400)	3,400 (2,506)
Indexing accuracy	arc sec.	± 12.5			
Net Weight	kg (lbs.)	130 (286)	200 (440)	290 (638)	390 (858)
Allowable wheel torque	Nm (ft. lbs.)	660 (486)	966 (712)	1,535 (1,131)	2,815 (2,075)
Allowable work inertia	$\text{kg}\cdot\text{m}^2$	2.36	7.1	10.9	33.5
Allowable work weight	 kg (lbs.)	300 (660)	450 (990)	650 (1,430)	650 (1,430)
Allowable eccentric load	 Nm (ft. lbs.)	350 (258)	700 (516)	960 (708)	960 (708)
Allowable load when table clamped	 N (lbf)	19,600 (4,390)	29,400 (6,586)	39,200 (8,781)	39,200 (8,781)
	 Nm (ft. lbs.)	540 (398)	900 (663)	1,900 (1,400)	3,400 (2,506)
	 Nm (ft. lbs.)	931 (686)	2,000 (1,474)	4,000 (2,948)	4,000 (2,948)

* Other motors & RPM available

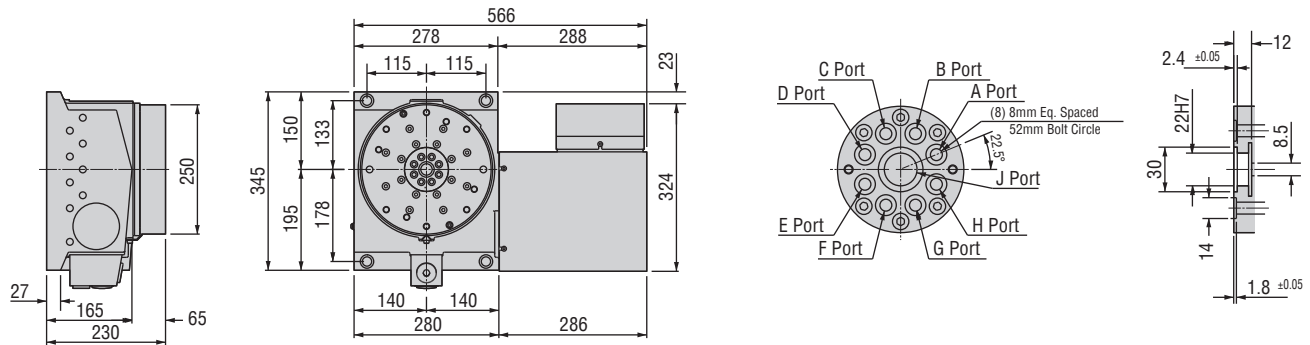
** Booster optional

Specifications subject to change without notice

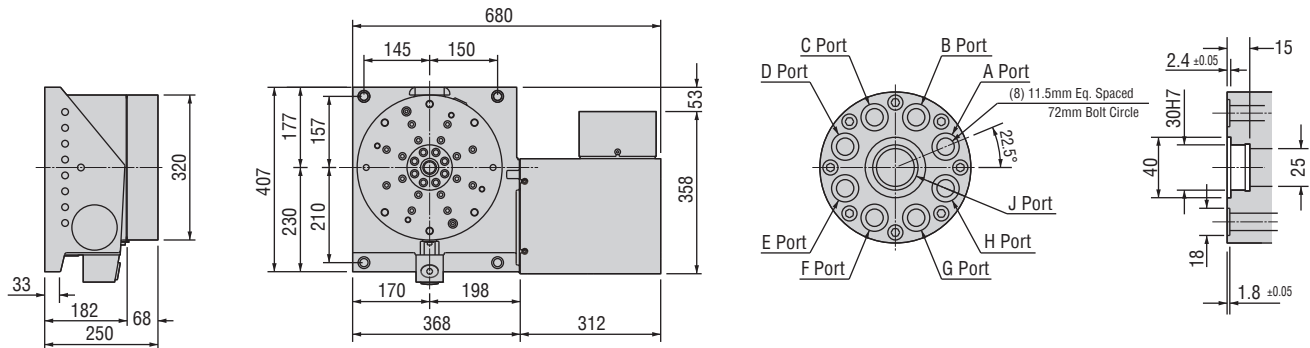
Dimensions

Drawings not to scale • Dimensions = mm

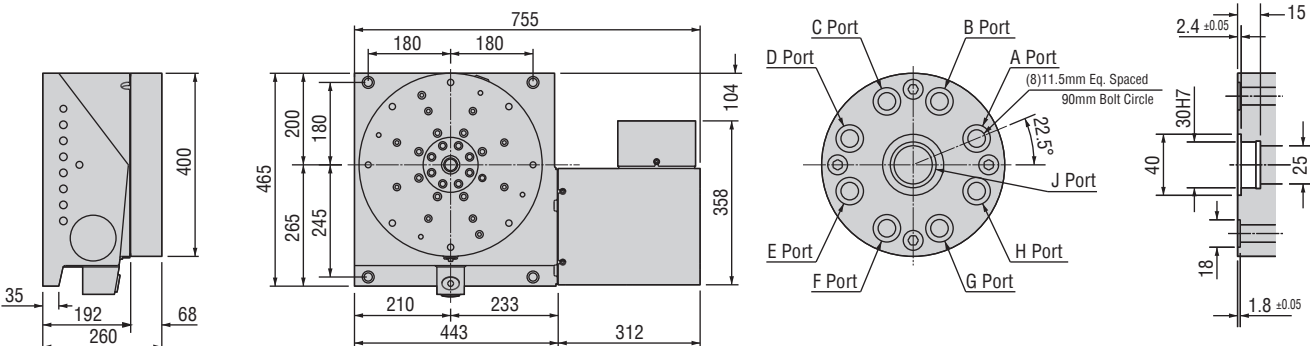
RC-250



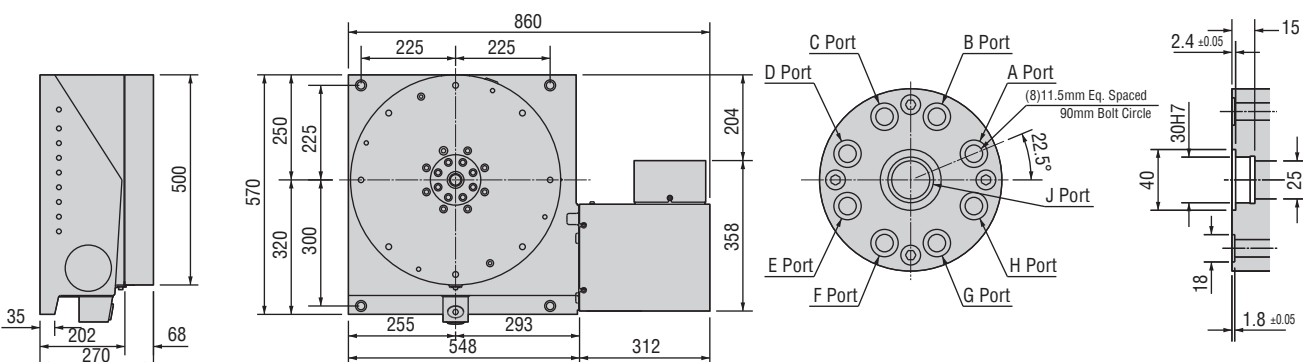
RC-300



RC-400



RC-500



The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

RC-250, 300, 400, 500

MACHINE TOOL / TRANSFER LINE INTEGRATED TABLES

RC-Series rotary tables are designed for integration into a specialized machine tool or transfer line. RC-Series tables feature extra rigid castings for heavy duty applications. Standard equipment for RC-Series tables includes a built-in (8) port hydraulic/pneumatic rotary joint unit and (1) coolant port.



RC-300

RH-400, 500, 600

MACHINE TOOL / TRANSFER LINE INTEGRATED TABLES

RH-Series rotary tables are available for horizontal setting only and are used mainly for rotating and positioning operations on items such as cradle jigs which have a comparably large turning radius. They feature excellent allowable work weight and moment rigidity, and a powerful hydraulic clamp mechanism.



RH-600

RUA-250, 320, 400, 500

MACHINE TOOL / TRANSFER LINE INTEGRATED TABLES

RUA-Series vertical rotary tables are used mainly as a tilting device. Standard features include a powerful dual disc clamp mechanism and excellent eccentric load rigidity, powerful wheel torque and cutting resistance. A (10) port rotary joint is a typical RUA-Series option.

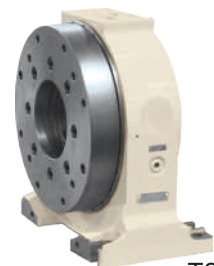


RUA-320

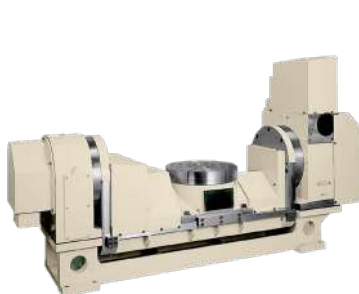
TSUA-170, 210, 255, 310

MACHINE TOOL / TRANSFER LINE SUPPORT SPINDLES

TSUA-Series support spindles are used in conjunction with RUA-Series rotary tables to create a tilting fixture surface. Options include an (8) port rotary joint and a balancer to support an eccentric load. A powerful dual disc clamp mechanism is incorporated.



TSUA-170



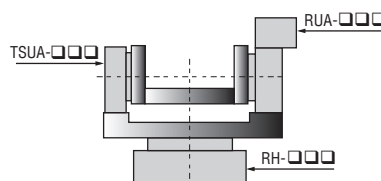
Turn & Tilt System



Tilt & Turn System

Integrated Rotary Tables

Tsudakoma integrated rotary tables are designed to be incorporated into machine tools to create a "Flexible Transfer Line" for machining automobile parts. The overall rigidity and clamp torque of these rotary tables and support spindles allows smaller models to be selected resulting in a more compact transfer line.



Cradle System

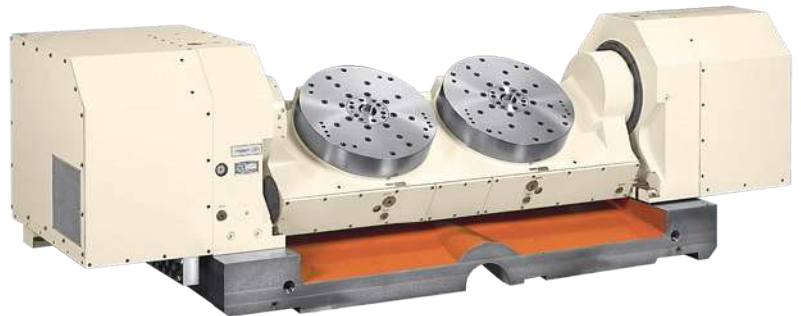
CUSTOM BASEPLATE ASSEMBLY

(3) RNCV-401L rotary tables are mounted on a custom designed fabricated baseplate. This assembly was installed at an aircraft components manufacturer.



TWIN SPINDLE TILTING TABLE

(12) of the RT-244 twin surface tilting tables were built for integration into custom designed twin spindle vertical machining centers. Two complete automotive suspension components are manufactured with each machining cycle.



AUTOMATED CLAMPING TABLE

This TWA-130 is equipped with a Hirschmann pneumatic chuck. Pneumatic rotary joints on the rotary axis allow automated clamping and un-clamping of the chuck and pallet system.



CUSTOM SLIDE ASSEMBLY

Two RWA-320R,B tables were incorporated into a project for making helicopter parts. One RWA-320R,B was mounted on the pictured slide assembly, and one RWA-320R,B was mounted opposite the slide assembly and utilized as a pneumatic clamping tailstock.



CUSTOM OUTPUTS

CAPTO C8 PULL STUD

This custom RWB-400K is equipped with a hydraulic rotary joint especially designed for actuating a Capto C8 pull stud front end.



CUSTOM FIXTURE PLATE

RWB-320 & TSH-210

The RWB-320 rotary table and TSH-210 hydraulic support spindle are mounted on a custom baseplate and joined to a specially designed trunnion fixture manufactured by KOMA Precision, Inc.



CUSTOM FIXTURE PLATE

RWB-400 & TSH-210

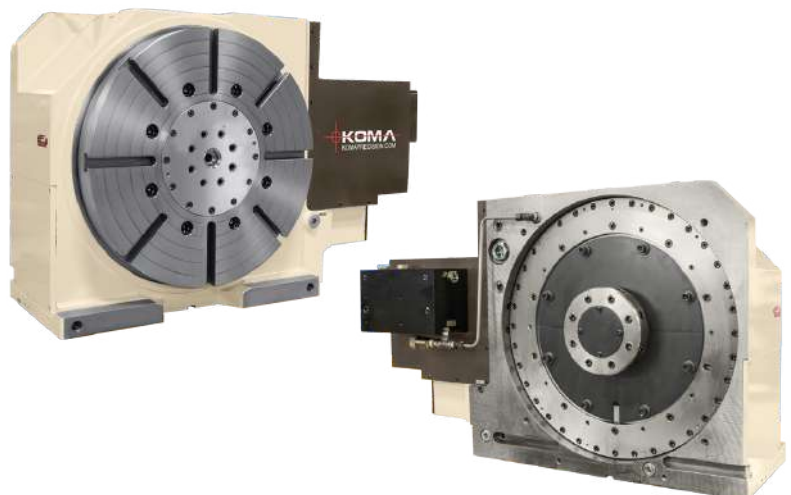
The RWB-400 rotary table and TSH-210 hydraulic support spindle are mounted on a custom baseplate and joined to a specially designed trunnion fixture manufactured by KOMA Precision, Inc.



CUSTOM ROTARY JOINTS

RWB-500R WITH ROTARY JOINT

This RWB-500R is equipped with a custom (8) port rotary joint and an ultra booster.



TTNC-101-4

(4) SPINDLE TILTING TABLE

This TTNC-101-4 is equipped with (4) HSK-A100 clamping pods with a cylinder force of 1,434lbf @500psi. This table was installed on a twin spindle vertical machining center.



SWIVEL BOXES & ARMS

CABLE MANAGEMENT

Pictured are RWB-250K, RWB-320K, and RWB-400K rotary tables each equipped with custom designed swivel boxes or swivel arms to facilitate cable management on a pallet equipped horizontal machining center.



RTT-303,AA

(2) SPINDLE TILTING TABLE

Each spindle of the RTT-303,AA has a 350mm diameter work surface with a load capacity of 220lbs. The spindles can be geared to rotate in opposite directions to each other or in the same direction. The cradle assembly tilts -33° to +113°.



TPC-Jr SERIES NC CONTROLLERS

SINGLE AXIS NC CONTROLLER

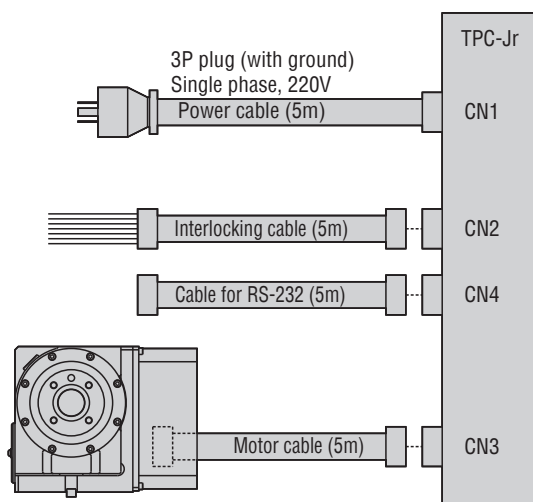
The TPC-Jr is an “M” code triggered single axis NC controller package which includes a servomotor, amplifier, and cables. The TPC-Jr has a Remote Mode M+ feature which allows the downloading of program commands from a Fanuc, Mitsubishi, Yasnac, or Okuma machine tool control via an RS-232 port.

TPC MODEL SELECTION

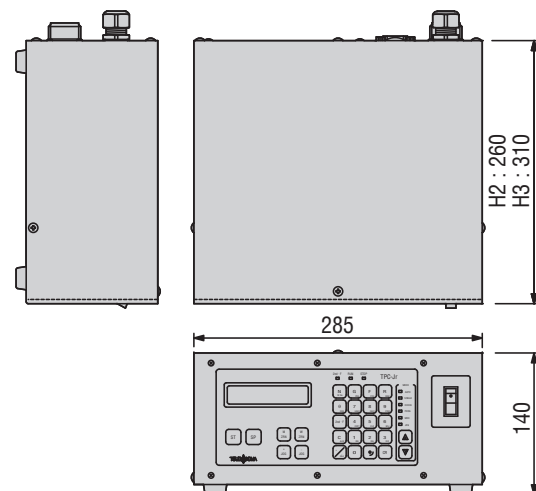
NC Rotary Table		TPC-Jr Model	
		K2	K3
RN-100		●	
RWA-160		●	
RWA-200			●
RWA-250			●
RWA-320			●
RN-100,2/3/4			●
RN-150R,2			●
TN-101	Rotary & Tilt	●	
TWA-130	Rotary & Tilt	●	
TWA-160	Rotary & Tilt	●	
TWA-200	Rotary & Tilt		●
TBS-130		●	
TBS-160		●(R)	●(T)



TPC CABLES



TPC DIMENSIONS



Subject to Change Without Notice

TPC5 SERIES NC CONTROLLERS

SINGLE AXIS NC CONTROLLER

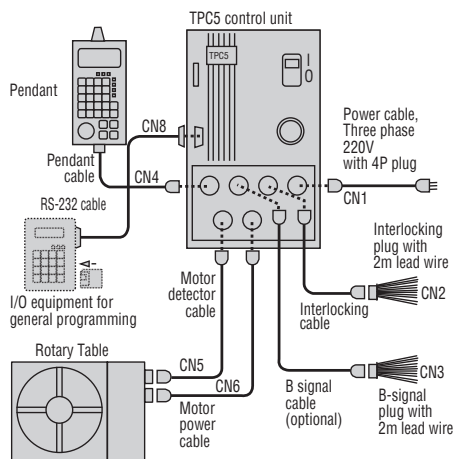
The TPC5 has all of the features of the TPC-Jr with the addition of a hand pendant for easy set-up. An available TPC5 option allows a machine tool control to call up a work number, block number, and rotary angle command from the TPC5 via a binary signal.

TPC5 MODEL SELECTION

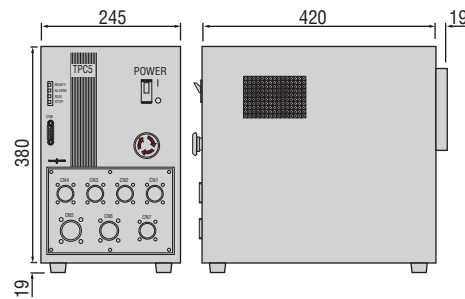
NC Rotary Table	TPC5 Model		
	SR6	SR12	SR30
RNCM-251	●		
RNCM-301 ~ 631		●	
RWB-250	●		
RWB-320, 400, 500		●	
RNC (V,K) - 401 ~ 801		●	
RNC (V,K) - 1001 ~ 2001			●
TN-320	●		
THNC-251, 301	●		
TTNC-451, 631		●	
TTNC-1001			●
RBS-160, 250	●		
RBS-320		●	
TBS-250	●		



TPC5 CABLES



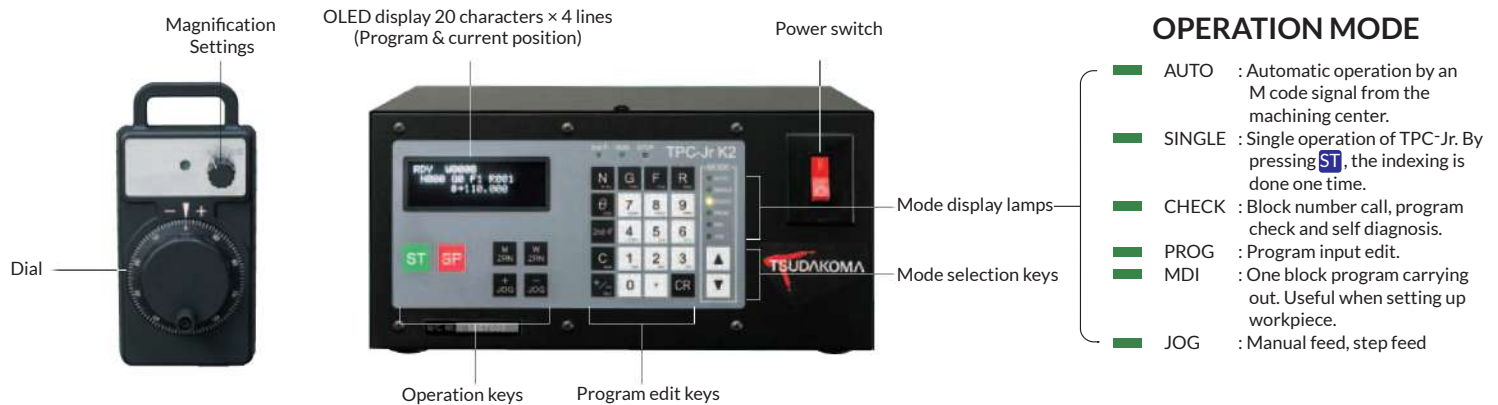
TPC5 DIMENSIONS



Subject to Change Without Notice

TPC-Jr FUNCTIONS

OPERATION PANEL



PROGRAM EDIT KEYS

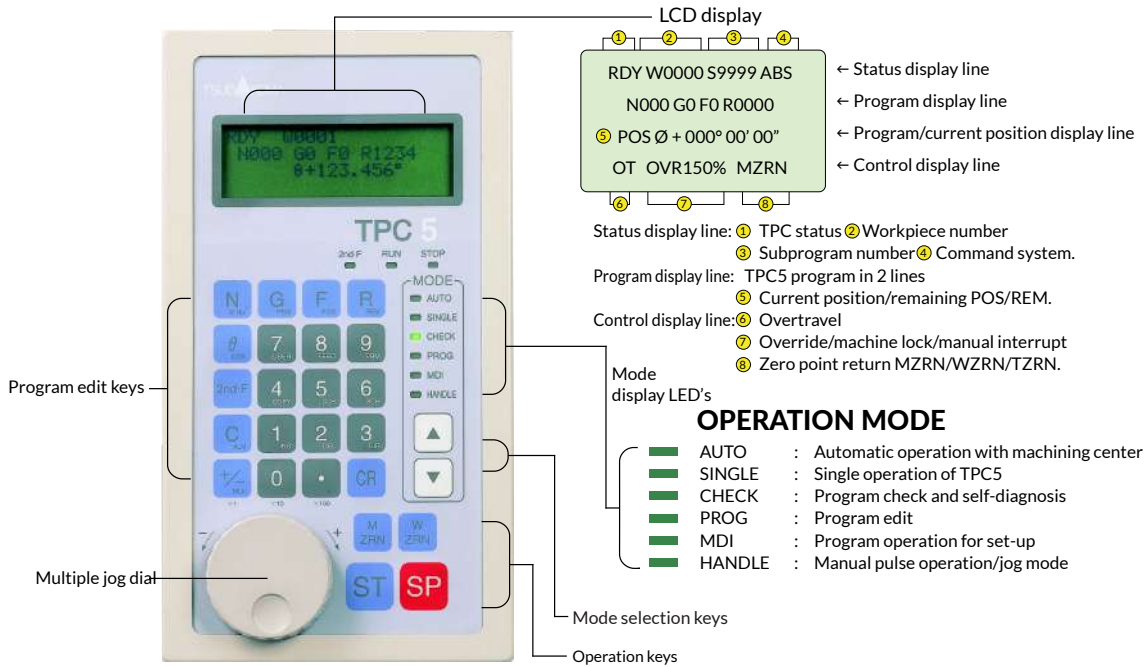
2nd+F + N WNo	Workpiece No. (Program No.)	0000 ~ 9999 100 programs registrable
N WNo	Block No.	000 ~ 999
G PRG	Operation command	G0 ~ G4: Movement command G5 ~ G9: Secondary functions
F POS	Feedrate select command	F0: Rapid positioning speed F1 ~ F9: Cutting feedrate
R REM	Defines "G" code function	
θ DGN	Movement amount command (angle value, divisions, or repetition #)	

G code		R code		θ code	
No.	Command	No.	Command	Command	Setting
G0	Direct angle command	001~999	Number of repetitions (INC)	Command angle	±000.000° ~ ±999.999°
		000	(ABS)	Command angle	±000.000° ~ ±360.000°
G1	Direct indexing number command	001~999	Number of repetitions	# of divisions for 360°	±1 ~ ±999,999 div.
G2	Arc-indexing number command	001~999	Number of divisions/repetitions	Arc-angle indexed	±000.001° ~ ±360.000°
G3	Lead cutting command	000~045	Number of table rotations	Command angle	±0° ~ ±360.000°
G4	Zero point return command	000	1st zero point return (mechanical zero point)	Not required	
		001	2nd zero point return		
		002	3rd zero point return		
G5	Sub-program call command	000~999	Number of repetitions	Sub-program No.	0000~ 9999
G6	Sub-program return command	Not required		Not required	
G7	Program end command	Not required		Target address	000~999
G8	Workpiece coordinate system setting command	Not required		Reference coordinate	±0° ~ ±360.000°
G9	Declaration command	000	No operation	Not required	
		001/002	Clamp OFF/ON		
		003/004	Dowe I OFF/ON		
		005/006	Indexing group control OFF/ON	Not required	
		007/008	Directional positioning OFF/ON		
		009/010	Completion signal control command OFF/ON		
		011	Program display selection command	Not required	
		012	Current position display selection command		
		013	Remaining angle display selection command		

Subject to Change Without Notice

TPC5 FUNCTIONS

OPERATION PANEL



PROGRAM EDIT KEYS

2nd+F	N WNo	Workpiece No. (Program No.)	0000 ~ 9999 100 programs registrable
	N WNo	Block No.	000 ~ 999
	G PRG	Operation command	G0 ~ G4: Movement command G5 ~ G9: Secondary functions
	F POS	Feedrate select command	F0: Rapid positioning speed F1 ~ F9: Cutting feedrate
	R REM	Defines "G" code function	
	θ DGN	Movement amount command (angle value, divisions, or repetition #)	

G code		R code		θ code	
No.	Command	No.	Command	Command	Setting
G0	Direct angle command	0001~9999	Number of repetitions (INC)	Command angle	±000.000° ~ ±999.999°
		0000	(ABS)	Command angle	±000.000° ~ ±360.000°
G1	Direct indexing number command	0001~9999	Number of repetitions	# of divisions for 360°	±1 ~ ±999,999 div.
G2	Arc-indexing number command	0001~9999	Number of divisions, Number of divisions/ repetitions	Arc-angle indexed	±000.001° ~ ±360.000°
G3	Lead cutting command	0000~0045	Number of table rotations	Command angle	±0° ~ ±360.000°
G4	Zero point return command	0000	1st zero point return (mechanical zero point)	Not required	
		0001	2nd zero point return		
		0002	3rd zero point return		
G5	Sub-program call command	0000~9999	Number of repetitions	Sub-program No.	0000 (0001) ~ 9999
G6	Sub-program return command		Not required	Not required	
G7	Program end command		Not required	Target address	000~999
G8	Workpiece coordinate system setting command		Not required	Reference coordinate	±0° ~ ±360.000°
G9	Declaration command	0000	No operation	Not required	
		0001/0002	Clamp OFF/ON		
		0003/0004	Dwell OFF/ON	Dwell time	000 ~ 999 (x10msec)
		0005/0006	Indexing group control OFF/ON	Not required	
		0007/0008	Directional positioning OFF/ON		
		0009/0010	Completion signal control command OFF/ON	Completion signal selection	
		0011	Program display selection command	Not required	
		0012	Current position display selection command		
		0013	Remaining angle display selection command		

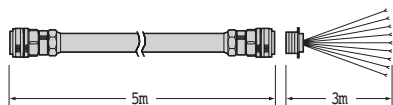
Subject to Change Without Notice

SPECIFICATIONS OF TPC

		TPC-Jr	TPC5
Control Axis		1 axis	
Servo Motor		AC Servo: ABS Detector	
Command Unit		0.001° (Decimal)	1 sec, 0.001°/0.0001° (Decimal)
Indexing Number	Direct Indexing	1~999999 even indexing	
	Arc-Indexing	1~999 even indexing	1~9999 even indexing
Max. Command Angle		±999.999°	±999°59'59"±999.999°±999.9999
Command System		INC, ABS, Shortcut ABS, INC/ABS mixed system	
Input System		MDI	
Program Control		Workpiece No. (W0000 to 9999)	
Program Capacity		1,000 blocks (total of main & sub programs)	2,000 blocks (total of main & sub programs)
Positioning Speed		Max. motor rotation speed: 3,000rpm	Max. motor rotation speed: 3,000rpm
Operation Mode		AUTO: Operation interlocked w/ mach. ctr.	AUTO: Operation interlocked w/ mach. ctr.
		SINGLE: Single operation of TPC	SINGLE: Single operation of TPC
		CHECK: Program check & call	CHECK: Program check & call
		PROG: Program edit	PROG: Program edit
		MDI: Set-up operation	MDI: Set-up operation
		JOG: Manual feed, step feed	JOG: Manual pulse operation
Display		LCD screen: 20 figures x 2 lines	LCD screen: 20 figures x 4 lines
Direct Indexing # Command		Move angle is directly commanded	
Repetition		Command of # of move amount repetitions 999 (TPC-Jr) 1~9999 (TPC5)	
Direct Indexing # Command		Indexing number of 6 digits for 360°	
Arc-Indexing # Command		Command of arbitrary 3-digit angle (TPC-Jr) or 4-digit angle (TPC5)	
Lead Cutting Command		Interlocked operation with one axis of the machining center in the open loop status	
Zero Point Return Command		Allows return to the first, second or third-zero point	
Feedrate Command		F0: positioning speed F1~9: cutting feedrate	
Feedrate Setting		1. By radius and surface speed setting 2. By move amount per second	
Sub-Program		Up to 8 levels of nesting are possible	
Workpiece coordinate System Setting		Allows a workpiece coordinate to be set at any point	
Dwell		Allows output of a positioning completion signal to be delayed	
Single Directional Positioning		Allows positioning of one direction	
Backlash Compensation		In increments of 0.001°	In increments of detecting unit
Soft Limit Function		Sets a soft limit measured from the 1 st zero position	
Automatic Setting at power ON		1. Mode selection, AUTO/CHECK 2. Workpiece number setting 3. Block number setting	
Edit Function		1. Insert 2. Delete 3. Copy	
Alarm		1. Program format errors 2. Program memory errors 3. Communication Errors 4. Soft limit alarms 5. Overtravel 6. Servo motor alarms 7. Overheat in the cabinet (TPC5)	
Override Function		X	5~200% 5% steps
JOG/HANDLE Feeding		Jog feed, step feed	Manual pulse feed, jog feed
Overtravel		The rotation range of the rotary table can be limited by limit switches. (Std. tilting axis)	
Manual 2 nd Zero Setting		Enables the 2 nd zero position to be set and changed at any point in the JOG (HANDLE) mode	
Input/Output Signal Check			
Contrast		The concentration on the LCD screen can be adjusted	
Power Earth (less than 100 ohm earth resistance)		1ø200/220V±10% 50/60Hz	
		Model	Pwr Capacity
		Jr G2	1.2KVA
		Jr G3	2.2KVA
Environmental Conditions		3ø200/220V±10% 50/60Hz	
		Model	Pwr Capacity
		TPC5-SR6	2.3KVA
		TPC5-SR12	4.3KVA
		TPC5-SR30	5.9KVA
External Dimensions		Ambient temperature: 0-40° • Relative humidity: 20-80% (no condensation) Vibration: 0.3G or less, no corrosive gas	
External Dimensions		Jr H2 Unit Weight: 7.2kg/16lbs 285mm (w) x 260mm (d) x 128mm (h)	
		Control Unit Weight: 22kg/48lbs 245mm (w) x 420mm (d) x 380mm (h)	
External Dimensions		Jr H3 Unit Weight: 8.1kg/18lbs 285mm (w) x 310mm (d) x 128mm (h)	
		MDI Unit Weight: 0.5kg/1lb 111mm (w) x 30mm (d) x 1998mm (h)	
External Output Signal		From TPC to machining center Contact ratings: 24VDC, 0.5A or less	

TPC OPTION

TPC5 Full-Featured Interlocking Cable

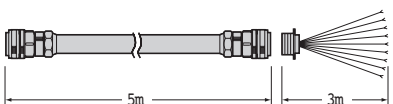


Required for the following functions:

- Stop or interlock input signal
- Positioning completion 2,3,4
- AUTO mode
- Positioning
- Alarm signal

- Full-featured interlocking cable (Standard length: 5m)

TPC5 B Signal Cable



Required for the following functions:

- External input of workpiece numbers
- External input of angles
- Fixed indexing angle input system by M-signal

- Full-featured interlocking cable (Standard length: 5m)

TPC-Jr RS-232 Cable

TPC5



Input and output of program, parameter and feed data for TPC5 and TPC-Jr, and data printout are carried out through external equipment, which is to be prepared by the customer.

- RS-232 cable (Standard length: 5m)
- RS-422 cable (Standard length: 5m)

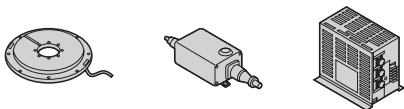
TPC5 High Resolution Capability Rotary Encoder Type



Fully-closed loop control is possible by the feed-back from the rotary encoder.

- Rotary encoders
- IBV unit (by HEIDENHAIN)
- TPC5 RE

TPC5 High Resolution Capability MP Scale Type



Fully-closed loop control is possible by the feed-back from the MP scale.

- MP scale
- Pre-amplifier
- A/D converter (Mitsubishi Heavy Industries)
- TPC5 RE

TPC-Jr "Remote Mode" Specification

TPC5



Available for measuring system construction. To be connected with a personal computer using serial channel.

- RS-232 cable

TPC-Jr "Remote Mode + M" Specification

TPC5



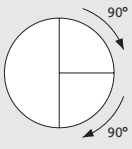
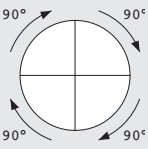
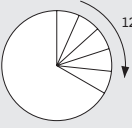
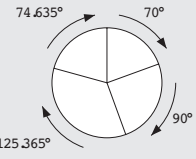
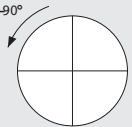
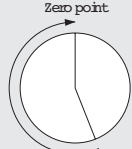
A function to unify the program to start the rotary table by M-signal, by feeding a command for the indexing angle from the RS-232 port at the NC controller of the machining center.

Note: This function may not be available for some machining centers.

- RS-232 cable

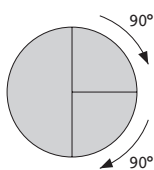
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TPC MACHINING PROGRAM EXAMPLES

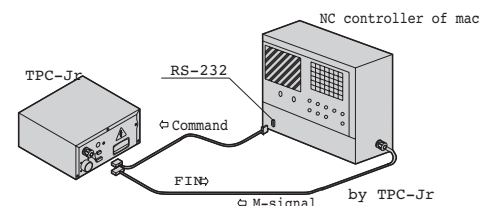
Direct angle command: G0  <pre> N 000 G 0 F 0 R 002 θ 90.000 CR WNo PRG POS REM DGN Quick Repetition # Indexing angle/time N 001 G 7 θ 000 CR WNo PRG DGN End of program </pre>	Positioning at 90° twice Return to N 000 at the program end
Direct indexing number command: G1 (even indexing)  <pre> N 000 G 1 F 0 R 004 θ 000004d CR WNo PRG POS REM DGN Dividing 360° by 4 N 001 G 7 θ 000 CR WNo PRG DGN </pre>	Dividing 360° by 4, four times Return to N 000 at the program end
Arc-indexing number command: G2 (even indexing by an arbitrarily-set angle)  <pre> N 000 G 2 F 0 R 005 θ 120.000 CR WNo PRG POS REM DGN Division # Arc-angle for dividing N 001 G 7 θ 000 CR WNo PRG DGN </pre>	Dividing 120° by 5, five times Return to N 000 at the program end
Uneven indexing  <pre> N 000 G 0 F 0 R 001 θ 70.000 CR WNo PRG POS REM DGN N 001 G 0 F 0 R 001 θ 90.000 CR WNo PRG POS REM DGN N 002 G 0 F 0 R 001 θ 125.365 CR WNo PRG POS REM DGN N 003 G 0 F 0 R 001 θ 74.635 CR WNo PRG POS REM DGN N 004 G 7 θ 000 CR WNo PRG DGN </pre>	Positioning at 70° once Positioning at 90° once Positioning at 125.365° once Positioning at 74.635° once Return to N 000 at the program end
(-) direction indexing  <pre> N 000 G 0 F 0 R 001 θ -90.000 CR WNo PRG POS REM DGN Reverse N 001 G 7 θ 000 CR WNo PRG DGN </pre>	Positioning at -90° once Return to N 000 at the program end
Zero point return command: G4  <pre> N 000 G 4 R 000 WNo PRG Zero return To 1st zero position </pre>	Return to 1st zero position

REMOTE MODE + M SPECIFICATION

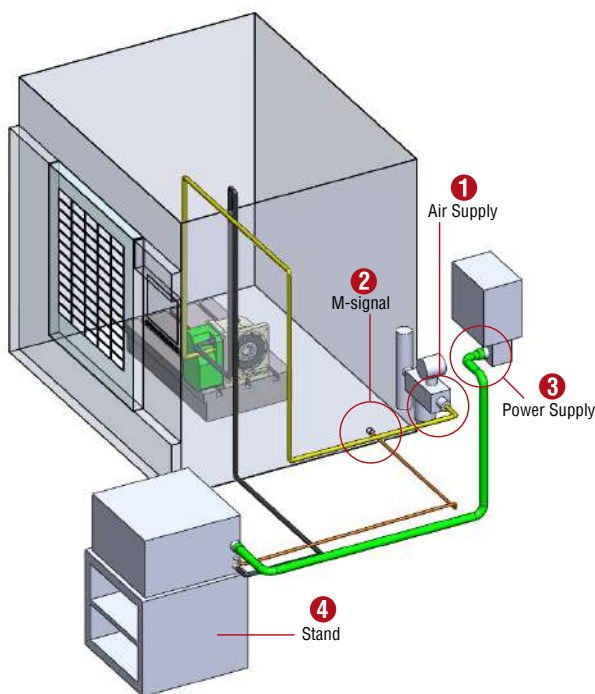
The TPC control is capable of receiving indexing information from the machining center control via the RS-232 ports. An “M” code is required to execute the move command. An RS-232 cross cable is provided with the TPC control. Machining center requirements: an RS-232 connector and Custom Macro B (optional) (for FANUC).



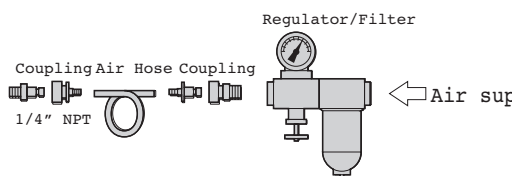
POPEN: = RS-232 port opens
 DPRINT[/MOVA90.]: = Command of absolute positioning at 90° is transmitted to TPC
 M70: = Positioning starts
 GO1Z100.F200: = Machining center in operation
 DPRINT[/MOVA180.]: = Command of absolute positioning at 180° is transmitted to TPC
 M70: = Positioning starts
 GO1Z100.F200: = Machining center in operation
 PCLOS: = RS-232 port closes



INSTALLATION OF TPC CONTROLLER



1 Air Supply

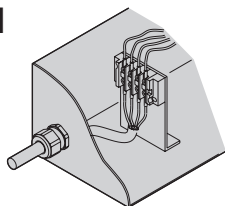


A pneumatic or air/hydraulic clamp system is available for an NC rotary table mounted with the TPC5 or TPC-Jr controller, and air supply is required.

The following are to be provided by customers.

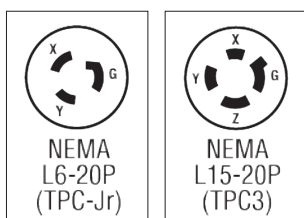
- Air filter and regulator (Air pressure: 72 psi)
- Air hose
- Joint coupler (1/4" NPT fitting for the table)

2 M-signal



When a machining center controls the rotary table, the command is normally made by M-signal. All machine tool M-signal cables must be connected to a terminal block in the machine tool cabinet. For connection with an interlocking cable, see examples on page 73.

3 Power supply



The TPC-Jr controller is supplied with a NEMA L6-20P plug (20 amp, 1 phase, 250V). The TPC5 controller is supplied with a NEMA L15-20P plug (20 amp, 3 phase, 250V).

If connectors other than the above are used, they are to be supplied by the customer. For the power requirements of TPC controllers, refer to the TPC specifications page.

The TPC controller should be connected to the machine tool emergency stop circuit. If the available power supply voltage is different from the required voltage, a transformer must be used. See the TPC specifications page for complete power requirements.

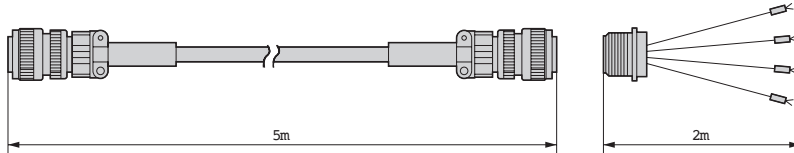
4 Stand

A stand for the TPC controller should be provided by the customer. For the dimensions and weight of the controller, refer to the TPC specifications page.

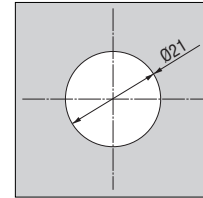
TPC CONTROLLERS TO INTERLOCK WITH MACHINING TOOLS

TPC-Jr

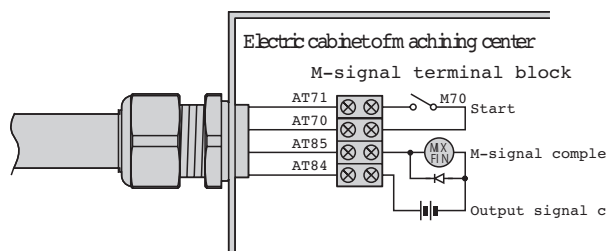
Interlocking cable (Standard length: 5m)



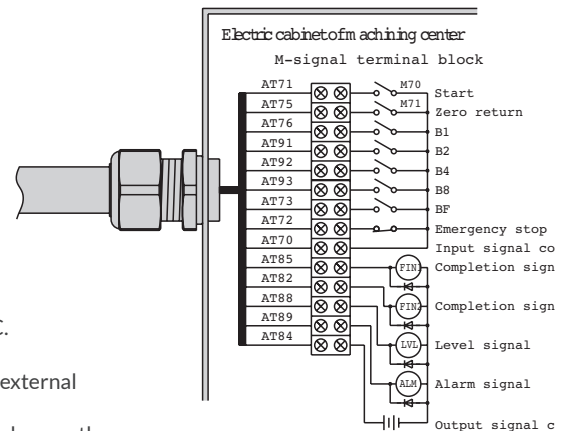
Connector hole diameter for machining center cabinet



Standard interlocking cable set-up: when a start signal and an indexing completion signal are used.



All features cable set-up: when the signals available on an interlocking cable are used.



Note 1: When completion signals are received by a relay, the power supply should be 24VDC.

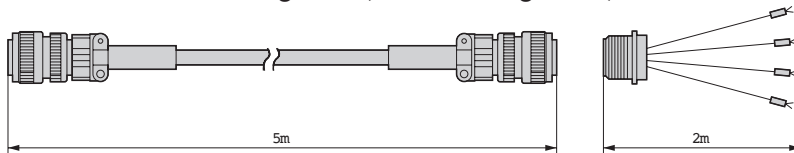
Do not use AC100V or 200V.

2: By changing the switch in the controller, a start signal is also available with a 24VDC external power supply.

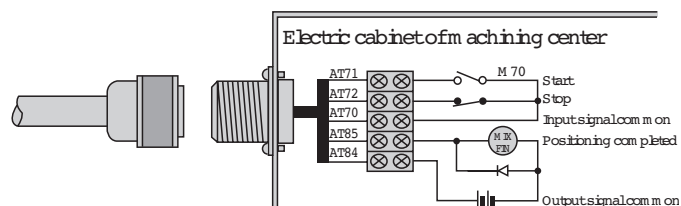
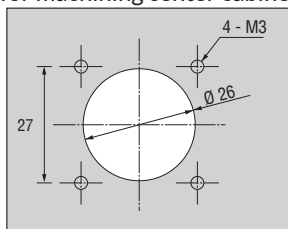
3: Be sure to take countermeasures against electric noise by attaching surge killers to relays on the machining center.

TPC5

Interlocking cable (Standard length: 5m)



Connector hole diameter for machining center cabinet



Standard interlocking cable set-up: for interlocking only with M-signal and the completion signal.

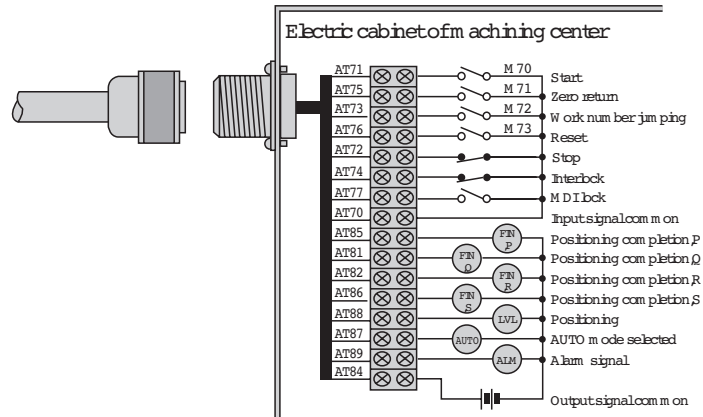
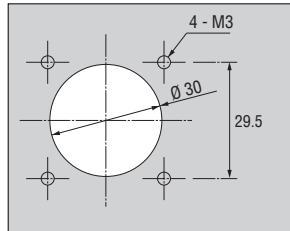
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TPC CONTROLLERS TO INTERLOCK WITH MACHINING TOOLS (cont.)

All features interlocking cable set-up (optional)

A variety of signals, such as a stop or interlock input signal and a level or alarm output signal are available with this cable. A "B" signal cable is required with the setting functions for the workpiece number and angle data are used, or when the fixed indexing angle input system by an M-signal is used. Contact KOMA for complete information.

Connector hole diameter
for machining center cabinet

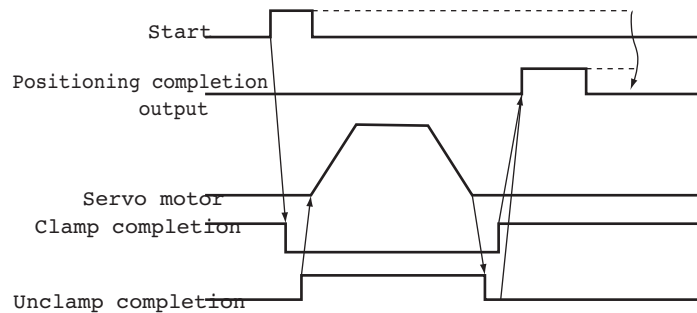


Note 1: When completion signals are received by a relay, the power supply should be 24VDC. Do not use AC100V or 200V.

2: By changing the switch in the controller, a start signal is also available with a 24VDC external power supply.

3: Be sure to take countermeasures against electric noise by attaching surge killers to relays on the machining center.

TIME CHART



Note 1: A start input signal, in the form of either a pulse signal (of more than 10 msec) or level signal can be accepted.

2: During an interlock operation with a machining center by means of an M-signal, the positioning completion should coincide with the M-signal completion.

RN-100, RWA-160, 200, 250, 320 / TPC CONTROL SPECIFICATIONS

TPC MODEL / TABLE & MOTOR SPEED

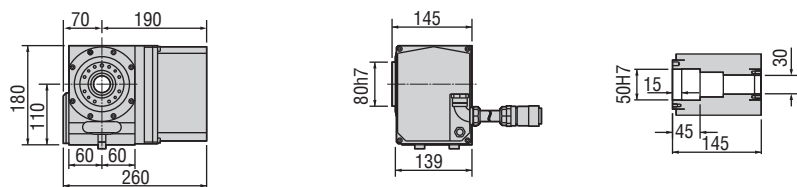
Table Model	RN-100	RWA-160	RWA-200	RWA-250	RWA-320	RN-100,2	RN-100,3	RN-100,4
TPC Model	TPC-Jr K2	TPC-Jr K2	TPC-Jr K3	TPC-Jr K3	TPC-Jr K3	TPC-Jr K3	TPC-Jr K3	TPC-Jr K3
Speed reduction ratio	1/36	1/72	1/72	1/120	1/180	1/36	1/60	1/60
Table/Motor RPM	66.7/2,400	41.7/3,000	41.7/3,000	25/3,000	16.7/3,000	55.6/2,000	50/3,000	50/3,000

Complete table specifications on pages 14 & 18 • Contact KOMA Precision for TPC use with continuous cutting or eccentric load applications.

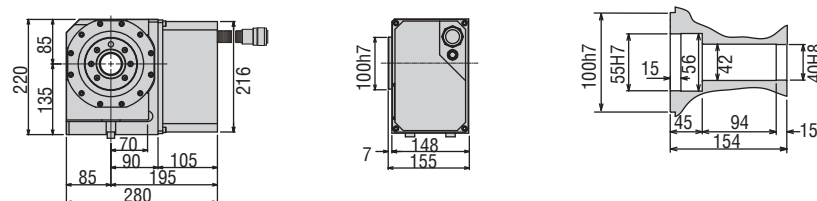
Dimensions

Drawings not to scale • Dimensions = mm

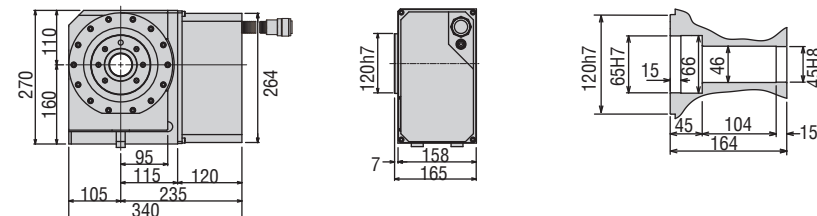
RN-100R/TPC-Jr K2



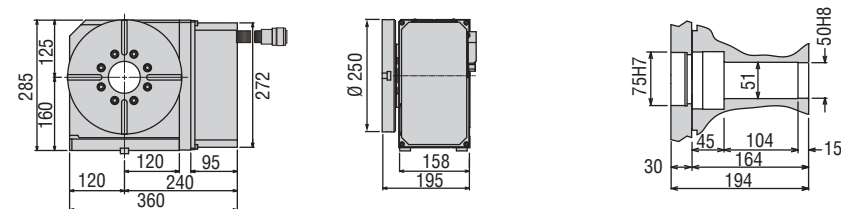
RWA-160R/TPC-Jr K2



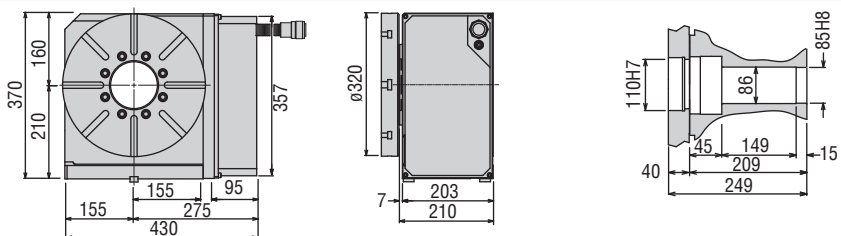
RWA-200R/TPC-Jr K3



RWA-250R/TPC-Jr K3



RWA-320R/TPC-Jr K3



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TN-101/320 | TWA-130/160/200 TPC CONTROL SPECIFICATIONS

TPC MODEL / TABLE & MOTOR SPEED

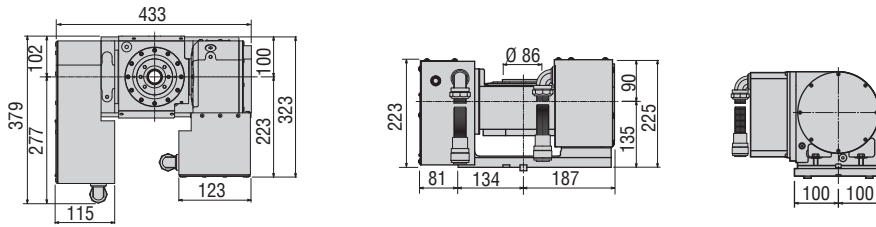
Table Model	TN-101		TWA-130		TWA-160		TWA-200		TN-320	
Table axis	Rotary	Tilt	Rotary	Tilt	Rotary	Tilt	Rotary	Tilt	Rotary	Tilt
TPC model	TPC-Jr K2		TPC-Jr K2		TPC-Jr K2		TPC-Jr K3		TPC5 SR6	
Speed reduction ratio	1/60	1/120	1/60	1/120	1/72	1/120	1/45	1/90	1/120	1/240
Table rpm (motor @2,000)	33.3	16.7	33.3	16.7	27.8	16.7	44.4	27.8	16.7	8.3

Complete table specifications on page 48 • Contact KOMA Precision for TPC use with continuous cutting or eccentric load applications.

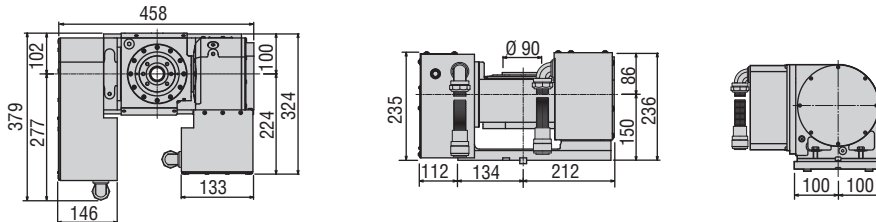
Dimensions

Drawings not to scale • Dimensions = mm

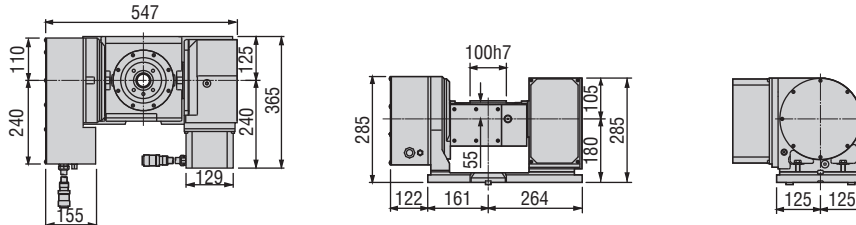
TN-101/TPC-Jr K2



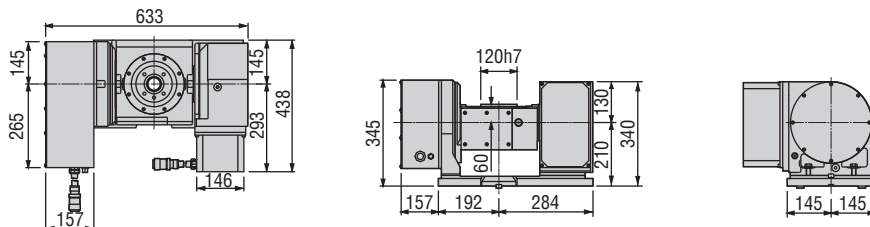
TWA-130/TPC-Jr K2



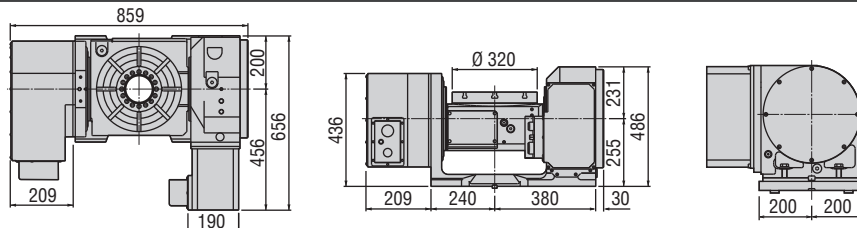
TWA-160/TPC-Jr K2



TWA-200/TPC-Jr K3



TN-320/TPC5 SR6

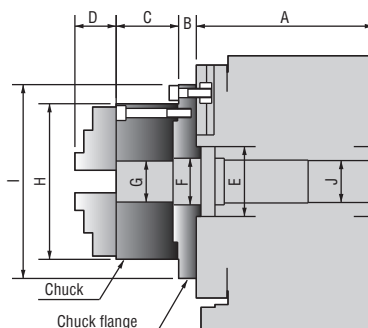


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CHUCKS

SCROLL CHUCKS



Scroll Chucks	
Chuck Size (inches)	Chucking Range (mm)
6" Manual 3-Jaw Chuck	3 ~ 127
8" Manual 3-Jaw Chuck	5 ~ 165
10" Manual 3-Jaw Chuck	10 ~ 200
12" Manual 3-Jaw Chuck	11 ~ 254
15" Manual 3-Jaw Chuck	15 ~ 380

Notes 1. The values in the table above are dimensions with hardened jaw (soft blank jaw is optional).
 2. Occasionally a workpiece within the chucking range can not be chucked due to jaw configuration.

SCROLL CHUCK MOUNTING DIMENSIONS

Dimensions = mm

Rotary Table Model	Chuck Size (inches)	A	B	C	D	E	F	G	H	I	J
RN-100	5	145	15	60	37.3	50	50	32	132	132	30
TWA-130	5	210	18	60	37.3	55	45	32	132	132	35
RWE-160, RWA-160 RWE-160 TPC	6	155	-	60	39	55	40	39	152	-	40
TWA-160	6	235	-	60	39	55	45	39	152	-	40
RWE-200 RWA-200 RWE-200 TPC	8	165 175 (RWE-200 TPC)	-	80	53	65	45	60	210	-	45
TWA-200	8	270	-	80	53	65	55	60	210	-	45
RWE-250 RWA-250	10	190	-	86	66	75	50	73	254	-	50
RWB-250	10	195	-	86	66	70	71	73	254	-	71
RNCM-251	10	165	-	86	66	40	32	73	254	-	32
RWE-320 RWA-320	12	250	-	102	66	110	82	83	305	-	82
TN-320	12	355	-	102	66	105	95	83	305	-	102
RNCM-301	12	220	-	102	66	40	40	83	305	-	40
RWB-320	12	250	-	102	66	130	101	83	305	-	101
RNCM-401 RNCV-401	15	250 220 (RNCV-401)	-	147	90	40	40	108	381	-	40
RWB-400	15	257	35	100	70	190	151	150	385	400	151
RWB-500	18	325	35	114	79.8	220	165	180	460	500	220

Notes 1. The dimensions above are for reference only.
 2. Specifications subject to change without notice.

TAILSTOCKS & SUPPORT SPINDLES

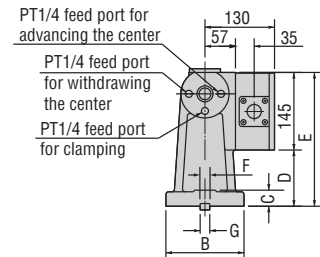
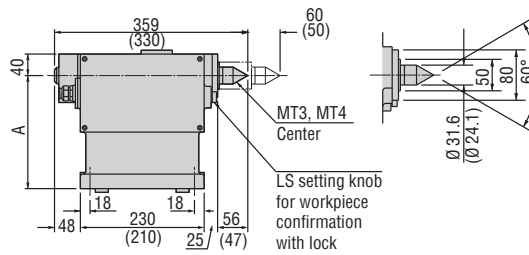
Rotary Table Model	Tailstock Model (Number = Center Height)			Support Spindle Model (Number = Center Height)		
	Manual (M)	Hydraulic (H)	Pneumatic (P)	No Clamping	Pneumatic (P)	Hydraulic (H)
						
RN-100	TL-110M	-	-	-	-	-
RWE-160, RWA-160, RWE-160 TPC	TL-135M TTJ-135M	TLH-135	TLP-135 ATTJ-135P	TS-135	TS-135P	-
RWE-200, RWE-250, RWA-200, RWA-250, RNCM-251, RWB-250, RWE-200 TPC	TL-160M TTJ-160M		TLP-160 ATTJ-160P			
RWE-320, RWA-320, RNCM-301, RWB-320, TWA-200	TL-210M TTJ-210M	TLH-210	*	TS-210	TS-210P	SSB-210 RTA-210H
RNCM/RNCV-401, RWB-400	TL-255M					SSB-255 RTA-255H
RWB-500, RNCM-501 RNCM/RNCK-631	TL-310M TL-400M	*	*	*	*	SSB-310 *
RNCV-801	TL-530M	*	*	*	*	*
TWA-320	TL-255M	TLH-255	*	*	*	*
THNC-251	TL-210M	TLH-210	*	*	*	SSB-210
THNC-301	TL-235M	*	*	*	*	*

*All tailstocks & support spindles can be mounted on risers to match the required table center height.

HYDRAULIC TAILSTOCK DIMENSIONS

► TLH -

TLH-160

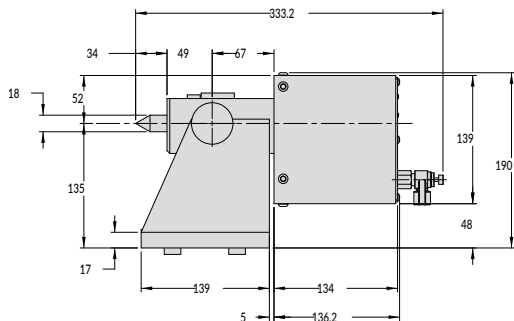


Tailstock Model	A	B	C	D	E	F	Carbide center	Hydraulic pressure PSI	Center thrust force N (lbf.)	Clamp torque N (lbf.)	Weight kg (lbs.)
TLH-135	135	110	25	30	175	19	MT3	218 ~ 986	1,666 (373)	2,450 (549)	28 (62)
TLH-160	160	130	30	55	200		MT4		2,352 (527)		33 (73)
TLH-210	210	146		105	250	23					40 (88)
TLH-255	255	170	35	150	295						

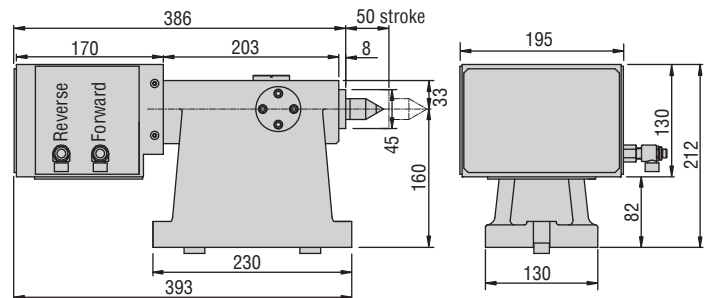
The above table shows the center thrust force and clamp torque when hydraulic pressure is 500 PSI.

PNEUMATIC TAILSTOCK DIMENSIONS

► TLP-135



► TLP-160

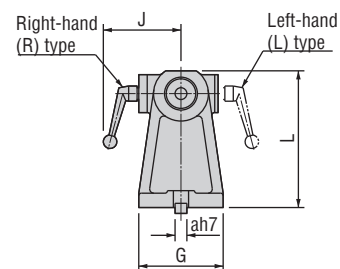
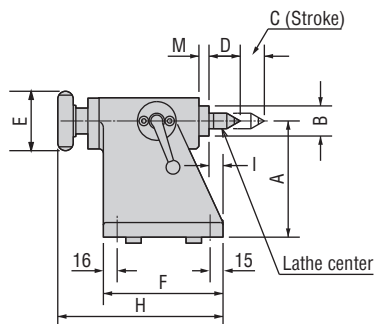
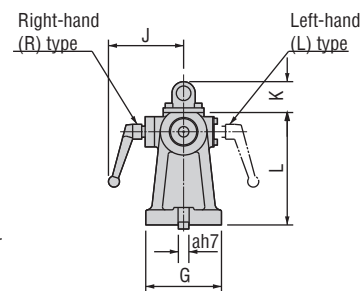
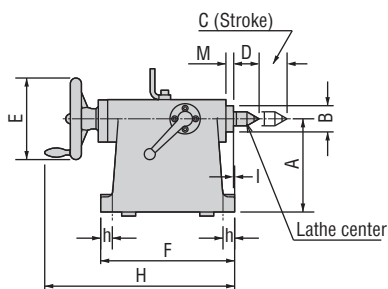


Tailstock Model	Stroke	Morse Taper	Forward thrust force @72 psi	Reverse thrust force @72 psi
TLP-135	30mm	MT2	1,557 N (349 lbf)	1,400 N (314 lbf)
TLP-160	50mm	MT3		

MANUAL TAILSTOCK DIMENSIONS

Tailstock Model	Morse taper	A Center height	B Center dia.	C Stroke	D Lathe center	E Handle dia.	F x G Base Dimension	H	I	J	K	L	M	a	b	c	d	e	g	h	Weight kg (lbs.)	
TL-110M	MT2	110	35	28	36	69	139 x 100	192	16	92	-	137	12	14	12	55	8	23	20	-	8 (18)	
TL-135M	MT2	135	35	28	36		139 x 100					162									9 (20)	
TL-160M	MT3	160	45	48	44	140	230 x 130	326	2	129	53	193	13			75			30	17.5	22 (48)	
TL-180M	MT3	180					230 x 140					223									24 (53)	
TL-210M	MT3	210					230 x 146					243									26 (57)	
TL-235M	MT4	235	50	53	52.5	160	270 x 160	383	12	131	65	270	8	18	16	80	11	28	35	40	20	30 (66)
TL-255M	MT4	255					270 x 170					290										38 (84)
TL-280M	MT4	280	60	53	52.5	180	315 x 220	417	15	154	65	350	10			85			40	20	63 (139)	
TL-310M	MT4	310																			315 x 240	440
TL-350M	MT4	350																				
TL-400M	MT4	400	80	68	52.5	225	410 x 290	532	30	164	65	590	5	22	18	90		32			138 (304)	
TL-530M	MT4	530																				

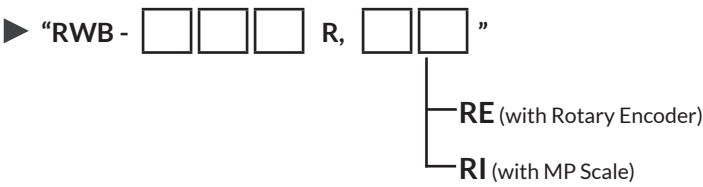
TL-110M/135M

TL - M

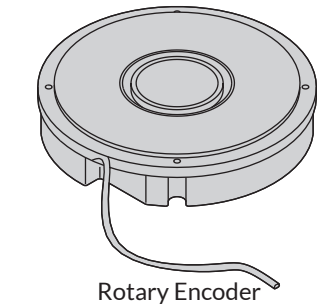
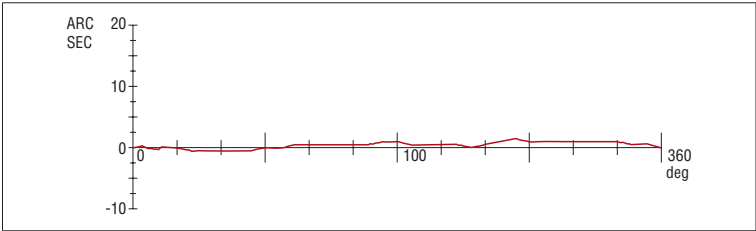
HIGH RESOLUTION ENCODERS & SCALES

The accuracy of a rotary table can be greatly enhanced with the use of an optional rotary scale. The scale (Heidenhain or MP) is mounted directly to the back of the rotating spindle on the rotary table, providing exact position movements from the machine NC control. The model and accuracy of the scale will determine the guaranteed positioning accuracy of the table. **CZi Fanuc scales also available. Call for more information.**

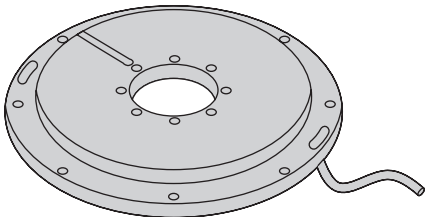
Rotary table model designation



Example of indexing accuracy measurement with encoders or scales.



Rotary Encoder



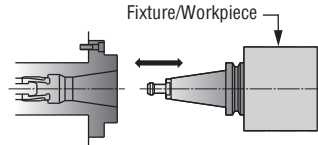
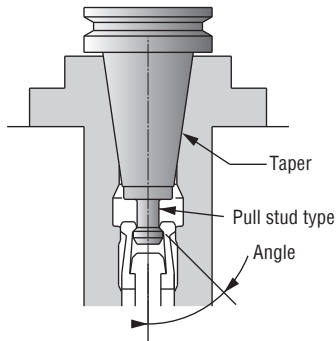
MP Scale

TABLE ACCURACIES WITH SCALES / ENCODERS

Rotary Table		Mitsubishi MP Scales		Heidenhain Rotary Encoders			
		Model	Accuracy with scale	Model	Accuracy with encoder		
RWE-160, RWE-200, RWA-160, RWA-200	Rotary axis	MPI 536A	±7.5 arc sec.	RCN-2590	±5 arc sec.		
RWE-250, RWE-320, RWA-250, RWA-320		MPI 736B	±5 arc sec.	RCN-2590	±3 arc sec.		
RNCM-251, 301							
RWB-250(K)		MPI 1072B	±4 arc sec.				
RWB-320(K)							
RWB-400(K)		MPI 1272B					
RWB-500(K)							
RNCM-401 ~ 631							
RCV-800 ~ 1000							
RNCV-801 ~ 1501							
TWA-130	Rotary axis	MPI 536A	±7.5 arc sec.	RCN-2590	±7.5 arc sec.		
	Tilt axis						
TWA-160	Rotary axis						
	Tilt axis						
TWA-200	Rotary axis			RCN-8590	±3 arc sec.		
	Tilt axis						
TN-320	Rotary axis					MPI 736B	±5 arc sec.
	Tilt axis						
TTNC- 631	Rotary axis	MPI 736B	±5 arc sec.				
	Tilt axis		±7.5 arc sec.				
TTNC-1001	Rotary axis	MPI 1272B	±4 arc sec.				
	Tilt axis		±7.5 arc sec.				

PULL STUD DEVICES

A pull stud device positions and mounts a fixture/workpiece on a rotary table by using the taper shank with a pull stud. Combining a pull stud unit and a robot/work loader allows for an unmanned machining system.



Knob Angle	Pull Stud Type
45°	I
60°	II
90°	Other



TWA-130 with CAT-40 Pull Stud

PULL STUD MODELS

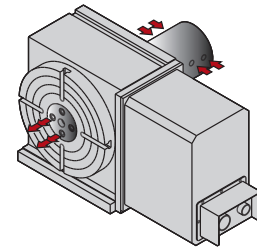
Rotary Table Model	Taper shank	Pull stud clamp force N (lbf.)	Hydraulic pressure PSI	Pneumatic pressure for air blow PSI
RWE-160, 200, 250, 320 RWA-160, 200, 250, 320	CAT/BT-40	11,000 (2,464)	500	30 ~ 60
TN-101 TWA-130, 160				
RWE-200, 250, 320 RWA-200, 250, 320	CAT/BT-50			
RWB-250(K)				
TWA-200, 320				
RWB-320(K), 400(K), 500(K)	CAT/BT-50	15,000 (3,360)		

ROTARY JOINTS

A rotary joint unit is used to supply hydraulic or pneumatic pressure to a workpiece or a fixture/actuator mounted to the rotary table. A rotary joint enables automatic loading and unloading of a workpiece. Custom designed rotary joints are available for most tables.

TYPICAL TABLE / ROTARY JOINT SPECIFICATIONS

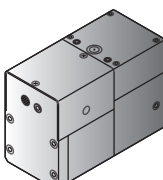
Rotary Table Model	Maximum number of ports	Typical supplied pressure PSI
RWE-160, RWA-160, 200, 250	6	3000 (Custom designs available)
RWE-320, RWA-320	6	
RNCM-251, 301, 401	6	
RNCM-501	6	
RCV-Series	Varies	
RNCV-Series	Varies	
RWB-250(K), 320(K)	12	
RWB-400(K), 500(K)	16	
RNCK-631	8	
RC/RNC-Series	Varies	
SSB 160-210	12	
SSB-255-310	16	

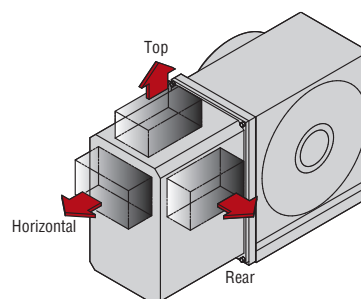


RWB-400K with Capto C8 Pull Stud and custom rotary joint

AIR/HYDRAULIC BOOSTERS

Several models of Tsudakoma rotary tables utilize a high power hydraulic clamping system. For machine tools that lack a hydraulic source, hydraulic clamping rotary tables may be equipped with an optional air/hydraulic booster unit. An air/hydraulic booster unit converts pneumatic pressure into hydraulic output for table clamping.

Booster Type	Table models	Booster
External (enclosure size varies)	Hydraulic Clamping Rotary table diameter is 250mm or more	



Booster Mounting Locations

Specify the following when ordering a booster: 1. Mounting position of the air-hydraulic booster unit. 2. Control voltage for the solenoid of the booster unit.

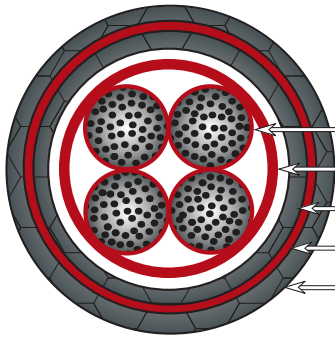
*If the machine tool does not have a hydraulic source to power the rotary table clamp mechanism, a Tsudakoma air/hydraulic booster is used to power the clamping. An air source is plumbed to the inlet port of the booster, and the outlet port of the booster is plumbed to the rotary table hydraulic inlet port. Air/hydraulic boosters are either built-in internal units (for RWB-Series tables) or compact externally mounted units.

Table	Support	Booster
RWB/RWU-250	-	TB-80
RWB/RWU-250	SSB-160	TB-80
RWB/RWU-320	-	TB-80
RWB/RWU-320	SSB-210	TB-100
RWB/RWU-400	-	TB-80
RWB/RWU-400	SSB-255	TB-100
RWB/RWU-500	-	TB-100
RWB/RWU-500	SSB-310	TB-100
RWB/RWU-630	-	TB-100
RWB/RWU-630	SSB-310	TB-100
RCH/RCV-800	-	TB-100
RCH/RCV-1000	-	TB-115
RCH/RCV-1250	-	TB-115
RCB-350	-	TB-80
RCB-450	-	TB-100
RCB-550	-	TB-100



KOMA STEEL BRAIDED CABLE

Rotary tables ordered with KOMA steel braided cable provide an unsurpassed level of protection from coolant, contaminants, and abrasion. KOMA steel braided cable features environmentally molded ITT Cannon® connectors with Dow Corning® potting. The cable/connector joint is O-ring sealed and taper locked resulting in table and machine tool connections impervious to contamination. KOMA cable strength and protection characteristics far exceed those of standard OEM steel braided cable. KOMA steel braided cable is also the #1 choice when replacing damaged OEM steel braided cable.



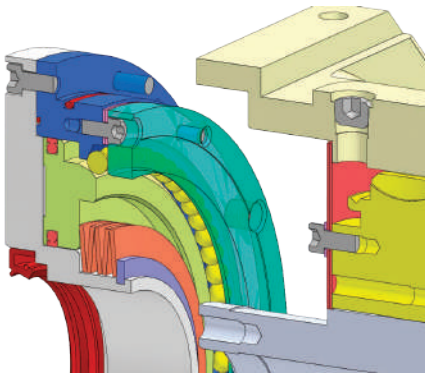
5 Layers of Protection:

- Each wire is PVC coated
- Wires are bundled into PVC coated cable
- Steel inner liner
- Special formula PVC middle layer
- Tin plated steel outer braid



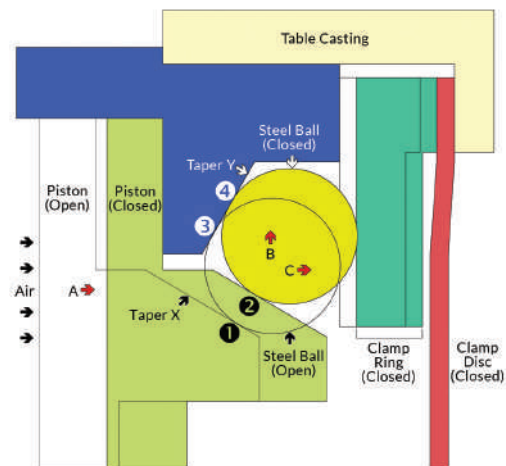
DUAL TAPER PNEUMATIC CLAMPING MECHANISM

APPLIES TO: RWA/RWA,B-SERIES TABLES • TWA-130/160/200 • TWA-160,B/201,B



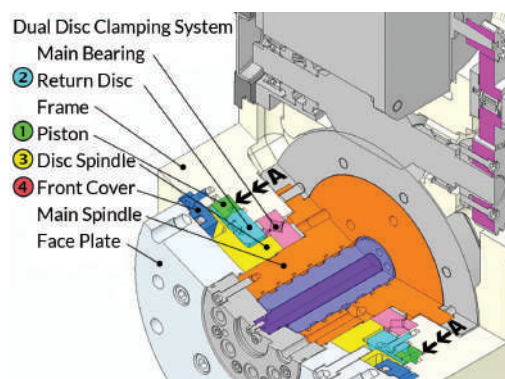
Tsudakoma Dual Taper Clamping Mechanism

- 1) Air pressure moves Piston in Direction A
- 2) Steel Ball moves in Direction B along Taper X from Position 1 to Position 2. Force is multiplied by a factor of 1.73
- 3) As Steel Ball moves in Direction B, Taper forces Steel Ball to move in Direction C from Position 3 to Position 4. Force is multiplied by a factor of 1.73
- 4) Steel Ball moving in Direction C forces Clamp Ring against Clamp Disc. The movement of the Steel Ball along Taper X and Taper Y results in the applied force being multiplied by a factor of $1.73 \times 1.73 = 3.0$



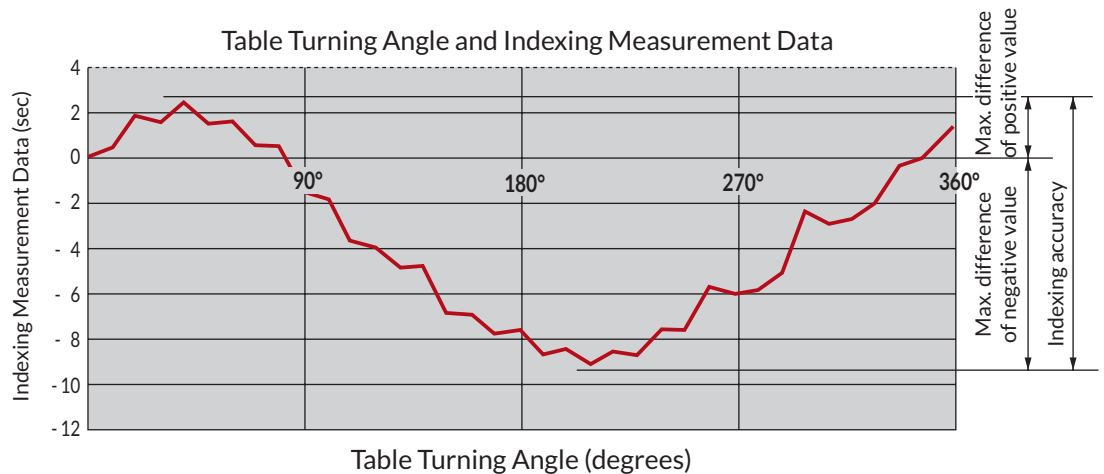
Tsudakoma Dual Disc Clamping Mechanism

- 1) Hydraulic pressure* moves Piston ① in Direction A.
- 2) Piston ① presses Return Disc ② against Disc Spindle ③ which clamps the Disc Spindle against the Front Cover ④.



1. INDEXING ACCURACY

By indexing one rotation of the table equally to coincide with the tooth number of the worm gear and measuring the result, the difference between the theoretical turning angle of the table and actual measurement is obtained. As shown below, the indexing accuracy is equal to the sum of the maximum difference of the positive value and that of the negative value, as an absolute value.



2. REPEATABILITY

Indexing operations for positioning at four determined angular positions as 0°, 90°, 180°, and 270° are carried out five times for positive rotation, and the indexing angles are measured. As a result, the difference between the maximum and the minimum of the measurement at each angular position is obtained. Indexing operations for positioning for negative rotation and the measurement of the indexing angles are similarly carried out, and the difference between the maximum and the minimum of the measurement is obtained. The repeatability is equal to the maximum value of the difference obtained through both measurements.

3. CLAMP TORQUE

The clamp torque specifications cover only the clamping mechanism; the self-locking caused by the worm gear is not included. The clamp torque specifications in the catalog are obtained when the rated pressure (500 PSI for hydraulic pressure, and 72 PSI for pneumatic pressure) is supplied to the table. If a more powerful clamp torque than specified in the catalog is required, the supply pressure can be elevated to the maximum allowable pressure (700 PSI for hydraulic pressure, and 100 PSI for pneumatic pressure), and the clamp torque will be proportionally increased.

4. ALLOWABLE WHEEL TORQUE

The allowable wheel torque is equal to the allowable torque for the worm wheel when the table rotation speed is 1 RPM. The allowable torque for the worm wheel is subject to the standard stipulated by the Japan Gear Manufacturers Association.

APPLICABLE SERVO MOTORS

FANUC Alpha (α) type servo motors are standard for Tsudakoma rotary tables. The table below shows additional servo motors classified according to FANUC Alpha (α) type motor capacity.

Motor Manufacturer		Motor Model				
FANUC		Alpha 2i (5,000)	Alpha 4i (5,000)	Alpha 8i (4,000)	Alpha 12i (4,000)	Alpha 22i (3,000)
MITSUBISHI	800 SERIES	HG75T	HG54T	HG104T	HG204S	HG354S
	700 SERIES	HF75T	HF104T	HF154T	HF204S	HF354S
YASKAWA Sigma V		SGMGV-05	SGMGV-09	SGMGV-09	SGMGV-30	
OKUMA		BLMT-24M	BLMT-40M	BLMT-80M	BLMT-150M	BLMT-200M
SIEMENS		1FK7042	1FK7060	1FK7063	1FK7083	1FK7101
HEIDENHAIN		QSY96A	QSY116C	QSY116E	QSY155B	QSY155D

Notes:

1. For non-FANUC motors, the table speed reduction ratio or motor dimensions may be different from FANUC motors.
2. Motors described above are selected for the equivalent motor torque capacity. The motor which is actually used on your rotary table is determined by the specifications of your machine tool NC controller.
3. Motors other than those listed above are available.

INDEXING CYCLE TIME

The graphs below show the required indexing time, which includes the time for the control command for the machine tool. This information helps you examine the working cycle time when operating the rotary table. The table rotation speed and the acceleration and deceleration constant may differ depending of the model of the rotary table. KOMA Precision has additional indexing time charts available for your review.

Table rotation speed, 12,000 deg/min (33.3rpm)
Acceleration/deceleration constant, 150msec

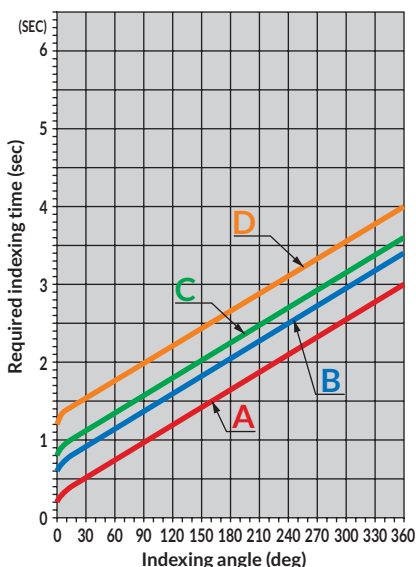
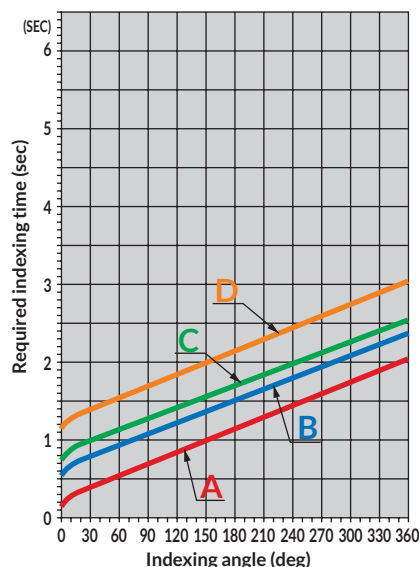


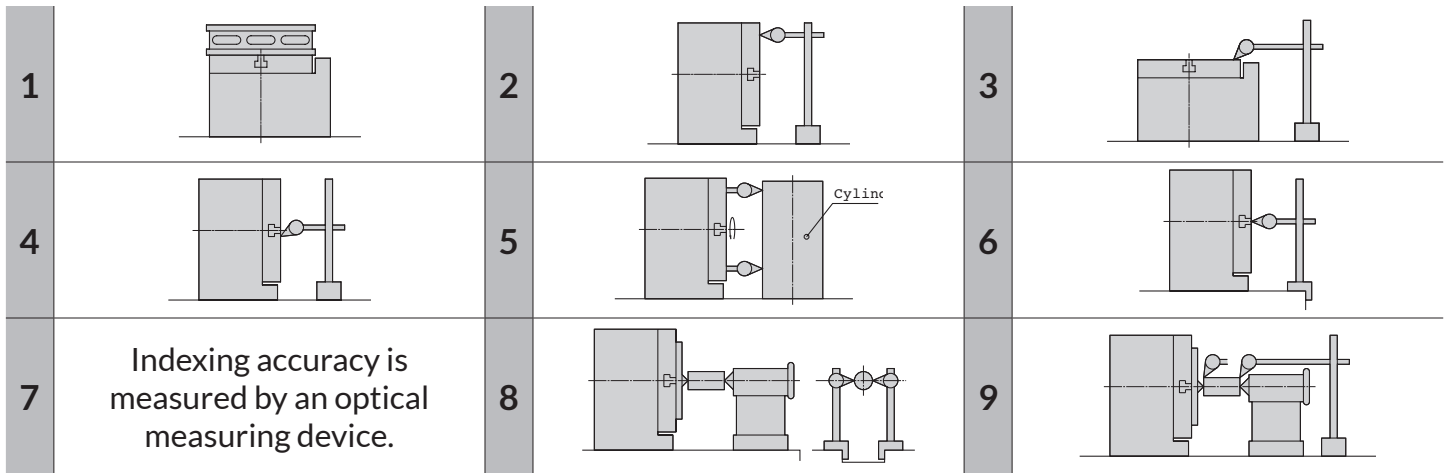
Table rotation speed, 8,000 deg/min (22.2rpm)
Acceleration/deceleration constant, 150msec



Note: For the above B and C cases, the indexing required time includes the time to respond to the clamp and un-clamp confirmation signals.

INSPECTION STANDARDS

SINGLE AXIS ROTARY TABLES



RN/RWE/RWA-SERIES

Unit: mm

No.	Inspection items			RN-100	RWA-160		RWA-200		RWA-250		RWA-320	
					Std.	Scale	Std.	Scale	Std.	Scale	Std.	Scale
2	Table top runout			0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
3	Parallelism of table top to frame bottom	Per overall length	Horizontal	0.015	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
4	Center bore runout	Spindle nose		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
5	Perpendicularity of table top to frame bottom	Per overall length	Vertical	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
6	Perpendicularity of table top to frame bottom guide blocks	Per overall length	Vertical	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
7	Indexing accuracy (arc sec.)			±22.5	±12.5	±5	±12.5	±5	±10	±3	±10	±3
8	Parallelism of center line between rotary table and tailstock to frame bottom guide blocks	Per 300mm	Vertical	-	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
9	Height difference of both center lines of headstock and tailstock		Vertical	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03

Notes: 1. For RN-100, RWA-160 and 201 models, "Spindle end" replaces "Table top" 2. Indexing accuracy for tables with scales reflects Heidenhain encoder accuracies.

RCV-SERIES

Unit: mm

No.	Inspection items			RCV-800		RCV-1000		RCV-1250	
				Std.	Scale	Std.	Scale	Std.	Scale
1	Table top flatness (concave)	Per overall length		0.04	0.02	0.04	0.02	0.04	0.02
2	Table top runout			0.03	0.02	0.03	0.02	0.03	0.02
3	Parallelism of table top to frame bottom	Per overall length	Horizontal	0.04	0.02	0.04	0.02	0.04	0.02
4	Center bore runout	Spindle nose		0.01	0.01	0.01	0.01	0.01	0.01
5	Perpendicularity of table top to frame bottom	Per overall length	Vertical	0.04	0.03	0.04	0.03	0.04	0.03
6	Perpendicularity of table top to frame bottom guide blocks	Per overall length	Vertical	0.04	0.03	0.04	0.03	0.04	0.03
7	Indexing accuracy (arc sec.)			±7.5	±3	±7.5	±3	±7.5	±3
8	Parallelism of center line between rotary table and tailstock to frame bottom guide blocks	Per 300mm	Vertical	0.02	0.02	0.02	0.02	0.02	0.02
9	Height difference of both center lines of rotary table and tailstock (Tailstock center line should be higher)		Vertical	0.02	0.02	0.02	0.02	0.02	0.02

Note: Indexing accuracy for tables with scales reflects Heidenhain encoder accuracies.

INSPECTION STANDARDS

SINGLE AXIS ROTARY TABLES

RNCV-SERIES

Unit: mm

No.	Inspection items			RNCV-1501	
				Std.	Scale
1	Table top flatness (concave)	Per overall length		0.04	0.02
2	Table top runout			0.03	0.02
3	Parallelism of table top to frame bottom	Per overall length	Horizontal	0.04	0.02
4	Center bore runout	Spindle nose		0.01	0.01
5	Perpendicularity of table top to frame bottom	Per overall length	Vertical	0.04	0.03
6	Perpendicularity of table top to frame bottom guide blocks	Per overall length	Vertical	0.04	0.03
7	Indexing accuracy (arc sec.)			±7.5	±3
8	Parallelism of center line between rotary table and tailstock to frame bottom guide blocks	Per 300mm	Vertical	0.03	0.03
9	Height difference of both center lines of rotary table and tailstock (Tailstock center line should be higher)		Vertical	0.04	0.04

Note: Indexing accuracy for tables with scales reflects Heidenhain encoder accuracies.

RNCM-SERIES

Unit: mm

No.	Inspection items			RNCM-251, 301		RNCM-401, 501		RNCM-631	
				Standard	With scale	Standard	With scale	Standard	With scale
1	Table top flatness (concave)	Per overall length		0.01	0.01	0.02	0.01	0.03	0.02
2	Table top runout			0.015	0.01	0.015	0.01	0.02	0.01
3	Parallelism of table top to frame bottom	Per overall length	Horizontal	0.02	0.01	0.02	0.01	0.03	0.02
4	Center bore runout	Spindle nose		0.01	0.005	0.01	0.005	0.01	0.005
5	Perpendicularity of table top to frame bottom	Per overall length	Vertical	0.02	0.01	0.02	0.01	0.03	0.02
6	Perpendicularity of table top to frame bottom guide blocks	Per overall length	Vertical	0.02	0.01	0.02	0.01	0.03	0.03
7	Indexing accuracy (arc sec.)			±7.5	±3	±7.5	±3	±7.5	±3
8	Parallelism of center line between rotary table and tailstock to frame bottom guide blocks	Per 300mm	Vertical	0.02	0.01	0.02	0.01	0.02	0.02
9	Height difference of both center lines of rotary table and tailstock (Tailstock center line should be higher)		Vertical	0.02	0.01	0.02	0.01	0.02	0.02

Note: Indexing accuracy for tables with scales reflects Heidenhain encoder accuracies.

RWB,RWB-K SERIES

Unit: mm

No.	Inspection items			RWB-250, 250K RWB-320, 320K		RWB-400, 400K RWB-500, 500K	
				Standard	With scale	Standard	With scale
1	Table top flatness (concave)	Per overall length		0.01	0.01	0.02	0.01
2	Table top runout			0.015	0.01	0.015	0.01
3	Parallelism of table top to frame bottom	Per overall length	Horizontal	0.02	0.01	0.02	0.01
4	Center bore runout	Spindle nose		0.01	0.005	0.01	0.005
5	Perpendicularity of table top to frame bottom	Per overall length	Vertical	0.02	0.01	0.02	0.01
6	Perpendicularity of table top to frame bottom guide blocks	Per overall length	Vertical	0.02	0.01	0.02	0.01
7	Indexing accuracy (arc sec.)			±7	±3	±7	±3
8	Parallelism of center line between rotary table and tailstock to frame bottom guide blocks	Per 300mm	Vertical	0.02	0.01	0.02	0.01
9	Height difference of both center lines of rotary table and tailstock (Tailstock center line should be higher)		Vertical	0.02	0.01	0.02	0.01

Notes: 1. Indexing accuracy for tables with scales reflects Heidenhain encoder accuracies. 2. For RWB-K models, No. 3 does not apply.

INSPECTION STANDARDS

RNCK-SERIES

Unit: mm

No.	Inspection items		RNCK-631	
			Standard	With scale
1	Table top flatness (concave)	Per overall length	0.03	0.02
2	Table top runout		0.02	0.01
3	Center bore runout	Spindle nose	0.01	0.005
4	Perpendicularity of table top to frame bottom	Per overall length	0.03	0.02
5	Perpendicularity of table top to frame bottom guide blocks	Per overall length	0.03	0.03
6	Indexing accuracy (arc sec.)		±7.5	±3
7	Parallelism of center line between rotary table and tailstock to frame bottom guide blocks	Per 300mm	0.02	0.02
8	Height difference of both center lines of rotary table and tailstock (Tailstock center line should be higher)		0.02	0.02

Note: Indexing accuracy for tables with scales reflects Heidenhain encoder accuracies.

RCH/RNC-SERIES

Unit: mm

No.	Inspection items		RCH-800		RCH-1000, 1200		RNC-1501,2001	
			Standard	With scale	Standard	With scale	Standard	With scale
1	Table top flatness (concave)	Per overall length	0.03	0.02	0.04	0.02	0.04	0.03
2	Table top runout		0.02	0.01	0.03	0.02	0.03	0.02
3	Parallelism of table top to frame bottom	Per overall length	0.03	0.02	0.04	0.02	0.04	0.03
4	Center bore runout	Spindle nose	0.01	0.005	0.01	0.01	0.01	0.01
7	Indexing accuracy (arc sec.)		±7.5	±3	±7.5	±3	±7.5	±3

Note: Indexing accuracy for tables with scales reflects Heidenhain encoder accuracies.

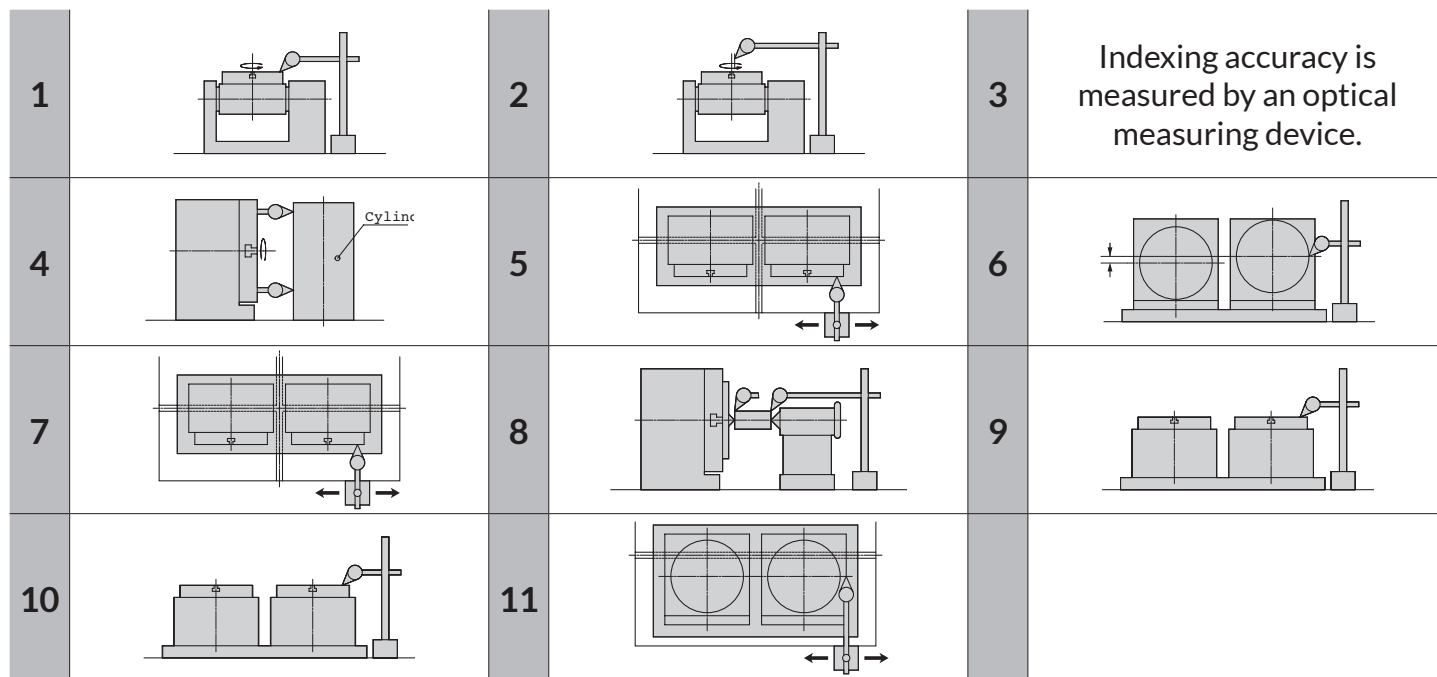
RWE-SERIES INDEXERS

Unit: mm

No.	Inspection items			RWE-160 TPC	RWE-200 TPC
2	Spindle end runout			0.015	0.015
3	Parallelism of spindle to frame bottom	Per overall length	Horizontal	0.02	0.02
4	Center bore runout	Spindle nose		0.015	0.02
5	Perpendicularity of spindle end to frame bottom	Per overall length	Vertical	0.02	0.02
6	Perpendicularity of spindle end to frame bottom guide	Per overall length	Vertical	0.02	0.02
7	Indexing accuracy (arc sec.)			±22.5	±22.5
9	Height difference of both center lines of headstock and tailstock		Vertical	0.03	0.03

INSPECTION STANDARDS

MULTI-SPINDLE SINGLE AXIS ROTARY TABLES



RN MULTI-SPINDLE SERIES

Unit: mm

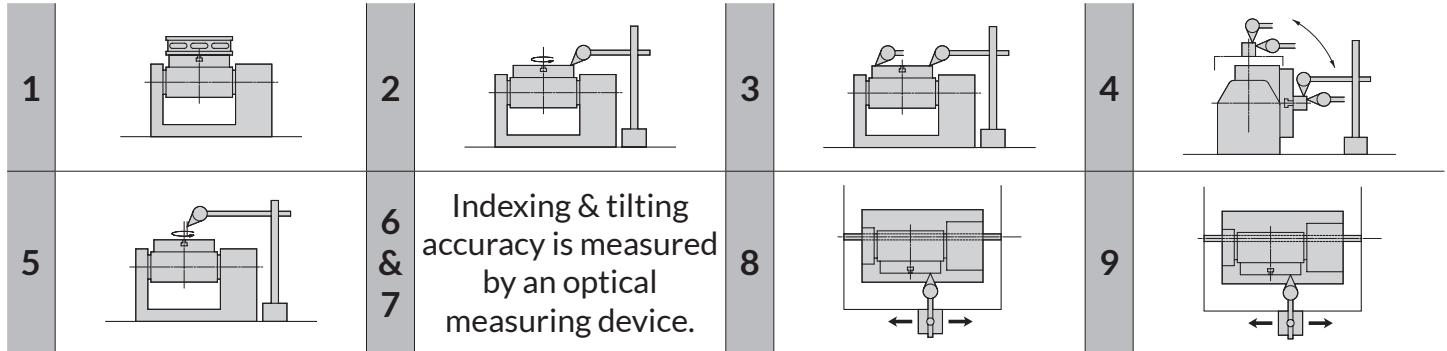
No.	Inspection items			RN-100,n	RN-150,n	RN-200,n	RN-250,n RN-300,n
1	Table top runout			0.015	0.015	0.015	0.02
2	Center bore runout			0.01	0.015	0.02	0.02
3	Indexing accuracy (arc sec.)			±30	±15	±15	±15
4	Perpendicularity of table top to frame bottom	Per overall length	Vertical	0.02	0.02	0.02	0.02
5	Parallelism & perpendicularity of table top to base bottom guide blocks	Per overall length	Vertical	0.02	0.02	0.02	0.03
6	Difference among all center heights		Vertical	0.02	0.02	0.02	0.02
7	Difference among distances between base bottom guide blocks & tailstock		Vertical	0.02	0.02	0.02	0.02
8	Height difference of both center lines of headstock and tailstock		Vertical	0.03	0.03	0.03	0.03
9	Parallelism of table top to base bottom	Per overall length	Horizontal	0.015	0.02	0.02	0.02
10	Difference among the average heights between base bottom and table top		Horizontal	0.02	0.02	0.02	0.02
11	Difference among the center bore positions based on base bottom guide blocks		Horizontal	0.02	0.02	0.02	0.02

Notes: 1. For RN-150 and RN-200 models, "spindle end" replaces "table top."

2. If guide blocks are not installed on the base, "base reference face" replaces "base bottom guide blocks" (No. 5, 7, and 11).

INSPECTION STANDARDS

TILTING ROTARY TABLES



TN/TWA-SERIES

Unit: mm

No.	Inspection items		TN-101	TWA-130		TWA-160		TWA-200		TN-320	
				Standard	w/scale	Standard	w/scale	Standard	w/scale	Standard	w/scale
1	Table top flatness (concave)	Per overall length	—	—	—	—	—	—	—	0.01	0.01
2	Table top runout		0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015
3	Parallelism of table top to frame bottom	Per overall length	0.015	0.015	0.015	0.02	0.02	0.02	0.02	0.02	0.02
4	Parallelism of tilt axis center to frame bottom	Per overall length	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
5	Center bore runout	Spindle nose	0.015	0.015	0.015	0.015	0.015	0.02	0.02	0.01	0.01
6	Tilting accuracy (arc sec.)	0° ~ + 90°	±22.5	±22.5	±7.5	±22.5	±7.5	±22.5	±7.5	±22.5	±7.5
		- 30° ~ + 90°	—	—	—	±30	±7.5	±30	±7.5	±30	±7.5
7	Indexing accuracy (arc sec.)		±20	±20	±7.5	±15	±7.5	±15	±3	±10	±3
8	Parallelism of spindle top to frame bottom guide blocks	Per overall length	0.015	0.015	0.015	0.02	0.02	0.02	0.02	0.02	0.02

Note: Indexing accuracy for tables with scales reflects Heidenhain encoder accuracies.

TTNC SERIES

Unit: mm

No.	Inspection items		TN-450		TTNC-631		TTNC-1001	
			Standard	With scale	Standard	With scale	Standard	With scale
1	Table top flatness (concave)	Per overall length	0.02	0.02	0.03	0.03	0.04	0.04
2	Table top runout		0.015	0.015	0.02	0.02	0.03	0.03
3	Parallelism of table top to frame bottom	Per overall length	0.02	0.02	0.03	0.03	0.04	0.04
4	Parallelism of tilt axis center to frame bottom	Per overall length	0.02	0.02	0.03	0.03	0.04	0.04
5	Center bore runout	Spindle nose	0.01	0.01	0.01	0.01	0.01	0.01
6	Tilting accuracy (arc sec.)	0° ~ + 90°	±30	±7.5	±30	±7.5	±30	±7.5
7	Indexing accuracy (arc sec.)		±7.5	±3	±7.5	±3	±7.5	±3
8	Parallelism of table top to frame bottom guide blocks	Per overall length	0.02	0.02	0.02	0.02	0.02	0.02

Note: Indexing accuracy for tables with scales reflects Heidenhain encoder accuracies.

THNC-SERIES

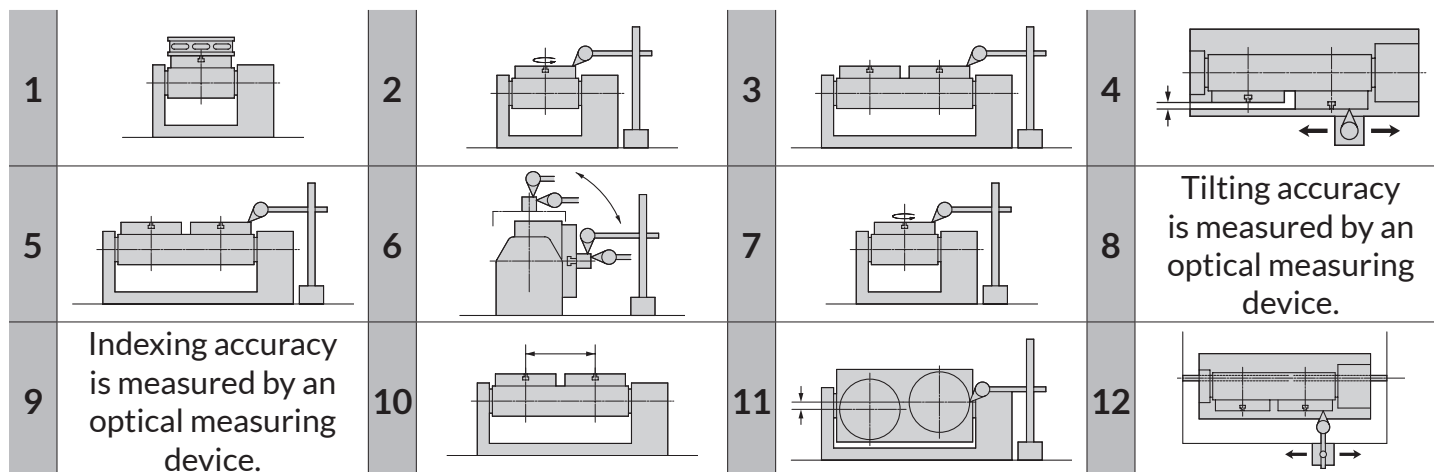
Unit: mm

No.	Inspection items		THNC-251, 301	
			Standard	With Scale
1	Table top flatness (concave)	Per overall length	0.01	0.01
2	Table top runout		0.015	0.015
3	Parallelism of table top to frame bottom	Per overall length	0.02	0.02
4	Parallelism of tilt axis center to frame bottom	Per overall length	0.02	0.02
5	Center bore runout	Spindle nose	0.01	0.01
6	Tilting accuracy (arc sec.)	0° ~ + 90°	±30	±30
7	Indexing accuracy (arc sec.)		±7.5	±5
8	Parallelism of table top to frame bottom guide blocks	Per overall length	0.02	0.02
9	Perpendicularity of table to frame bottom guide blocks	Per overall length	0.02	0.02

Note: Indexing accuracy for tables with scales reflects Heidenhain encoder accuracies.

INSPECTION STANDARDS

MULTI-SPINDLE TILTING ROTARY TABLES



TTNC MULTI-SPINDLE SERIES

Unit: mm

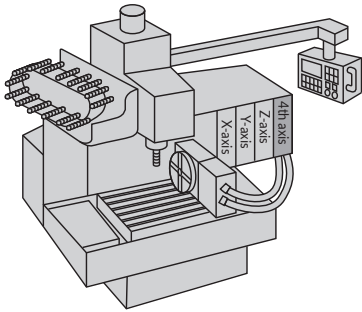
No.	Inspection items		TTNC-102,2	TTNC-101,4	TTNC-151,2	TTNC-201,2
1	Table top flatness (concave)	Per overall length	—	—	0.02	0.01
2	Table top runout		0.015	0.015	0.015	0.015
3	Difference between average heights of both tables	at 0° position	0.02	0.02	0.02	0.02
4	Difference between distances between frame standard face and both table tops	at 90° position	0.02	0.02	0.02	0.02
5	Parallelism of table top to frame bottom	Per overall length	0.015	0.015	0.02	0.02
6	Parallelism of tilt axis center to frame bottom	Per overall length	0.02	0.02	0.02	0.02
7	Center bore runout	Spindle nose	0.015	0.01	0.01	0.01
8	Tilting accuracy (arc sec.)	0 ~ + 90°	±22.5	±30	±30	±30
9	Indexing accuracy (arc sec.)		±20	±30	±15	±7.5
10	Table center distance		± 0.02	± 0.02	± 0.02	± 0.02
11	Difference between both center heights	at 90° position	0.02	0.02	0.02	0.02
12	Parallelism of table top to frame bottom guide blocks	Per overall length at 90° position	0.015	0.015	0.02	0.02

Note: For the TTNC-102,2 and TTNC-101,4 all descriptions of "table top" seen in the inspection items above should be "spindle end surface."

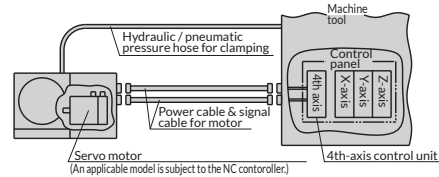
ROTARY TABLE SELECTION

1. Determine the controller system that will drive the rotary table.

Control System #1: A 4th axis (or 5th axis) feature is installed in the machine tool control.



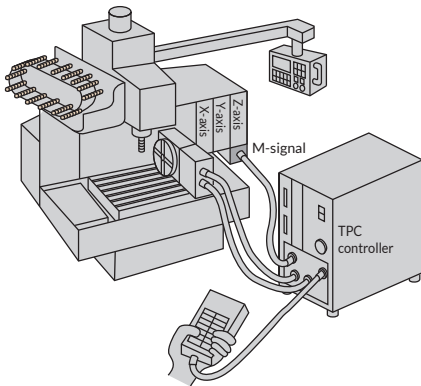
Structure



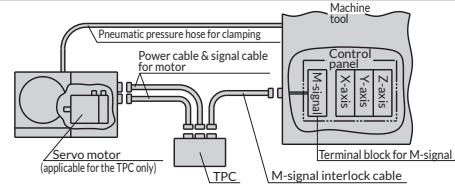
Features

- Simultaneous and continuous contour cutting in the X, Y, and Z-axes is possible subject to the capabilities of the machine tool control.
- Rotary table programming is input at the machine tool control.

Control System #2: (1) or (2) Tsudakoma TPC single axis NC controllers are used (M-signal sent from the machine tool).



Structure

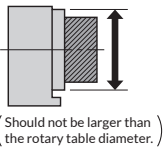


Features

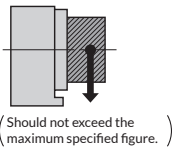
- If the machine tool control does not have 4th axis capabilities, but an M-signal is available, a TPC controller can be used to control the rotary table.
- This control system is only for indexing.
- Rotary table programming should be input directly into the TPC. At the machine tool an M-signal is indexed and input as a start command.

2. Select a rotary table by determining the workpiece parameters and the machining operations to be performed.

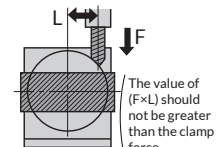
• Workpiece diameter



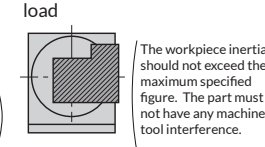
• Workpiece weight



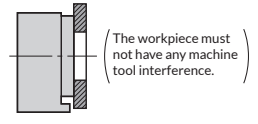
• Workpiece positioning



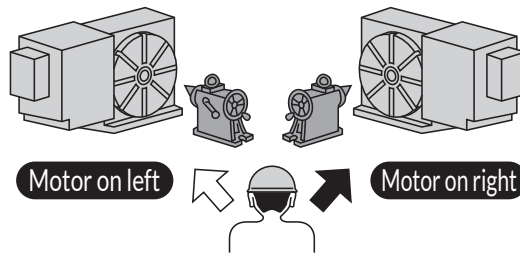
• Workpiece with eccentric load



• Workpiece of larger diameter, but lighter weight

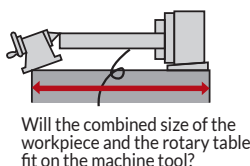
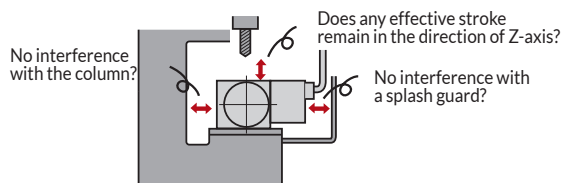


3. Determine the motor location on the rotary table.



Pay careful attention to any interference with the ATC automatic tool changer and also easy operation before determining the setting direction.

4. Ensure there is no rotary table / workpiece / machine tool interference.



- No interference with the ATC?
- Does the combined weight of the workpiece & rotary table remain with the allowable load for the machine tool?

ROTARY TABLE SELECTION FORM

☐ Dealer Company: _____

☐ End User Company: _____

Contact: _____

Contact: _____

Address: _____

Address: _____

City: _____ State: _____ Zip Code: _____

City: _____ State: _____ Zip Code: _____

E-mail: _____

E-mail: _____

Phone #: _____ Cell #: _____

Phone #: _____ Cell #: _____

1. Machine Tool: Manufacturer: _____ Model _____

☐ New☐ Existing

NC Controller Make: _____ NC Controller Model: _____

2. Workpiece: Description _____ Material _____ Weight _____

Dimensions:

1.) A: _____ 2.) A: _____ 3.) G: _____

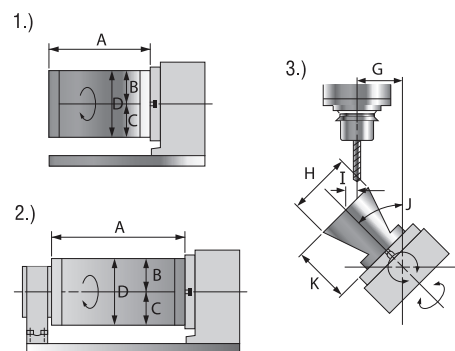
B: _____ B: _____ H: _____

C: _____ C: _____ I: _____

D: _____ D: _____ J: _____

K: _____

Example:



3. Cutting Conditions

Application: ☐ Mill ☐ Drill

Cutter Size (number of teeth)	Cutting Speed (sfm)	Cutting Feed Rate	Cutting Depth (1 pass)	Cutting Process (indexing or continuous cutting)

Description of Application:

NOTES

This image shows a full page of blank, lined paper. It features approximately 20 evenly spaced horizontal grey lines across its entire width, typical of notebook or legal stationery. The paper is otherwise completely empty, with no margins, text, or other markings.

TSUDAKOMA FACILITY



Nonoichi Plant

Tsudakoma NC rotary tables are manufactured in this state-of-the-art Nonoichi facility. Tsudakoma has been manufacturing machinery for over 100 years with over 40 years experience as the world's largest and leading manufacturer of NC rotary tables.



The Tsudakoma Foundry



24-hour un-manned operation of machining centers

With over 50 highly qualified design personnel, and a fast and efficient CAD and information control system, Tsudakoma is able to monitor and quickly respond to changing manufacturing requirements.



CMM Inspection



Assembly

