KOMA PRECISION

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Marketing Director: Ben Mund
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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.

For Over 40 years Koma Precision Inc. has partnered with Tsudakoma and Alberti to become the market leader of the highest quality machine tool accessories. Tsudakoma Rotary Tables, Alberti Angle Heads and Driven Toolholders are synonymous with Excellence, Quality and Performance.

BALL DRIVE SYSTEM

HIGH SPEED

Index speeds up to 138.9 RPM

ZERO BACKLASH

High accuracy machining with no reversal error

HIGH ACCURACY

Increased accuracy and repeatability specifications.

ZERO MAINTENANCE

Lifetime adjustment-free Ball Drive System

HIGH RIGIDITY

Increase clamp and holding torque.

TORQUE TRANSFER EFFICIENCY

40% more drive torque

THE TSUDAKOMA DUAL LEAD GEARING SYSTEM

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

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

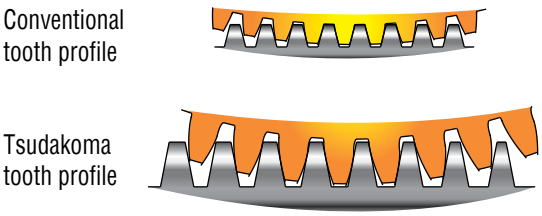
PROPRIETARY HIGH TENSILE STRENGTH BRASS

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.

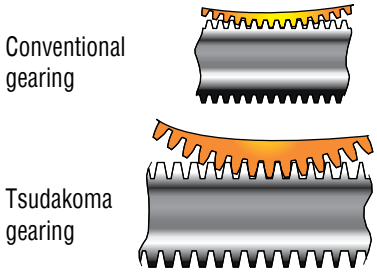
TOOTH PROFILE

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.



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.



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Horizontal and Vertical Rotary Tables

Horizontal Rotary Tables

4th & 5th Axis Tilting Rotary Tables

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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Special NC 4th & 5th Axis Rotary Tables

NC Controllers

Accessories

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Technical Information

General Information

RBS-160, 250, 320

ZERO MAINTENANCE • HIGH TORQUE TRANSFER EFFICIENCY

KOMA Precision, 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.

RBS-160

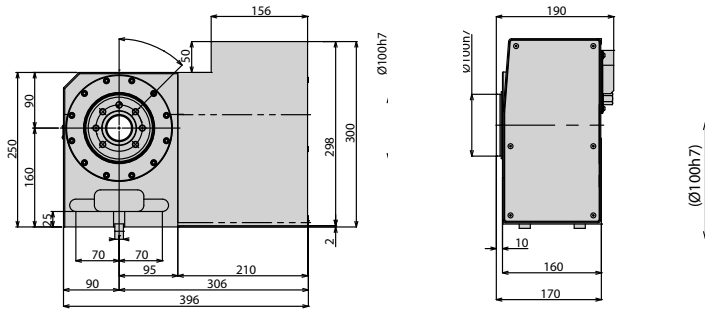
Table Model			RBS-160	RBS-250	RBS-320
Versions available			R, L	R, L	R, L
Table diameter		mm	(160, 200)	250	320
Center height		mm	160	210	255
Center bore	Nose Diameter	mm	55H7	80H7	115H7
	Thru Diameter	mm	40	50	85
Table T-slot width			12H8	12H8	14H8
Guide block width			14h7	18h7	
Servo motor (Fanuc)*			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		x 10^{-3}kg·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		kg·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 subjectto change without notice

Dimensions

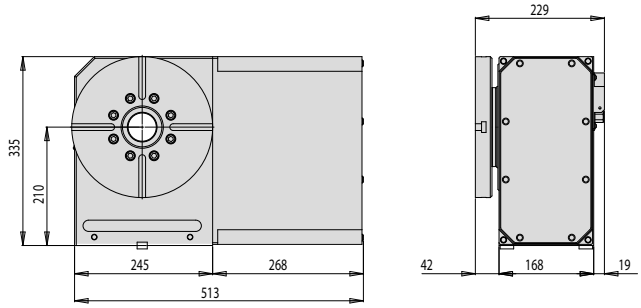
Drawings not to scale • Dimensions = mm

RBS-160



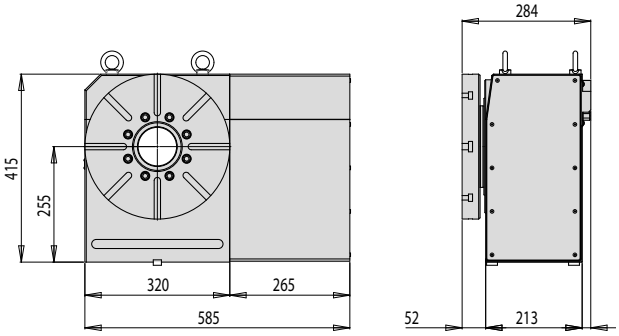
RBS-250R with optional faceplate

RBS-250



RBS-160R with 6” 3-Jaw Scroll Chuck

RBS-320



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

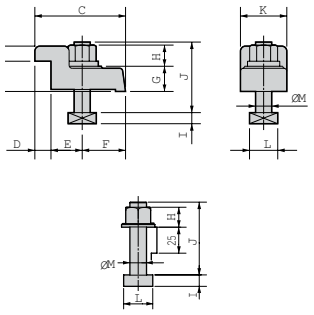
Options & Accessories

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

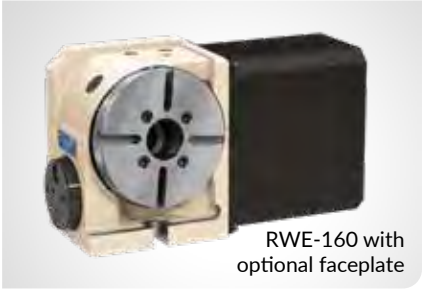
Type I



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.



RWE-160 with optional faceplate

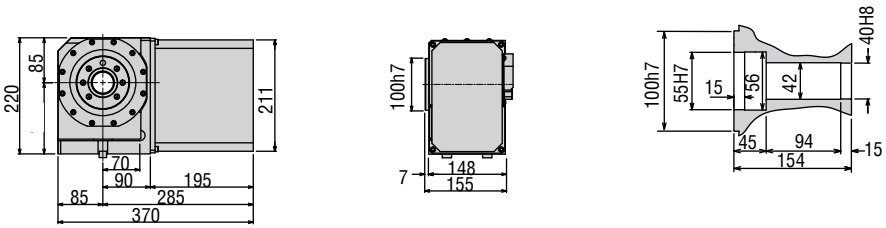
Table Model			RWE-160	RWE-200
Versions available			R, L	R, L
Spindle outer diameter		mm	100h7	120h7
Table diameter (optional)		mm	(160, 200)	(200, 250)
Center height		mm	135	160
Center bore	Nose Diameter	mm	55H7	65H7
	Thru Diameter	mm	40	45
Table T-slot width (with faceplate)			(12H8)	(12H8)
Guide block 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		x 10^{-3}kg·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		kg·m^2	.64	1.25
Allowable work weight [with tailstock]		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.)	250 (180)	400 (295)
		Nm (ft. lbs.)	780 (575)	1,900 (1,400)

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

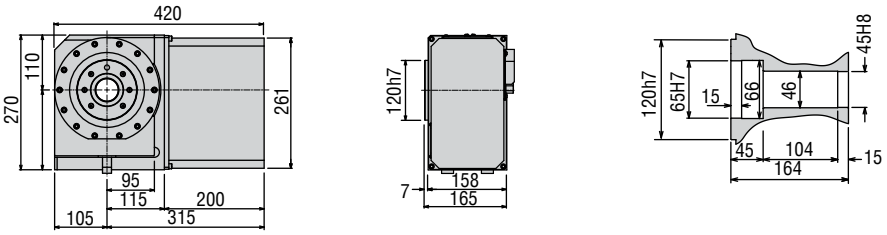
Dimensions

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.62
Chucks	p.74
Tailstock	p.75
Support Spindle	p.77
Face Plate	p.77
Encoder / Scale	p.78
Pull Stud Device	p.79
Rotary Joint	p.79
Booster	p.80
PVC or Steel Cables	p.81

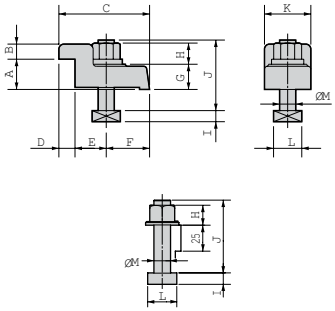
Clamping Block and Bolt

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 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 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

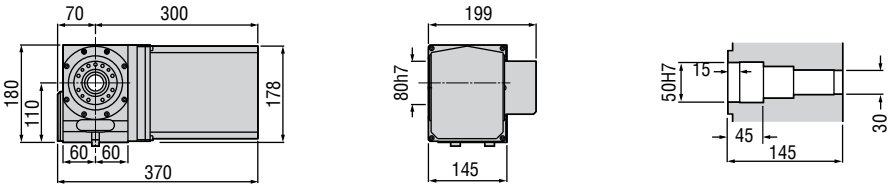
Table Model			RN-100	RWA-160	RWA-200	RWA-250 (S)	RWA-320 (S)
Versions available			R, L	R, L	R, L	R, L	R, L
Spindle outer diameter		Mm	80h7	100h7	120h7	140h7	180h7
Table diameter (optional)		Mm	(135)	(160, 200)	(200, 250)	250	320
Center height		Mm	110	135	160	160	210
Center bore	Nose Diameter	mm	50H7	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		x 10^{-3}kg·m²	.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		kg·m²	.10	.64	1.25	1.95	4.48
Allowable work weight		kg (lbs) [w/ tailstock]	25 (55) [50 (110)]	100 (220) [200 (440)]	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

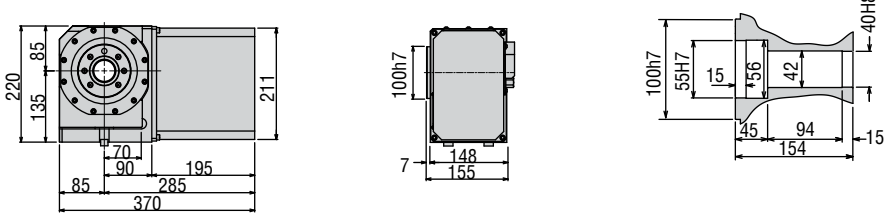
Dimensions

Drawings not to scale • Dimensions = mm

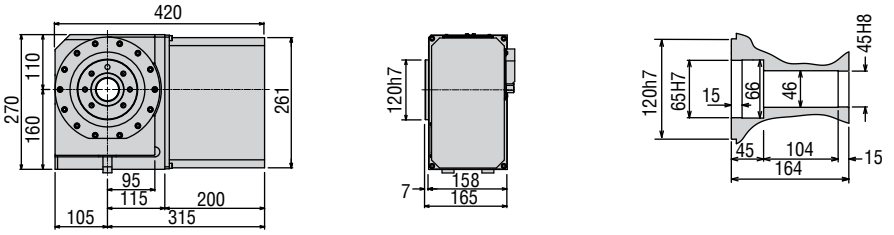
RN-100R



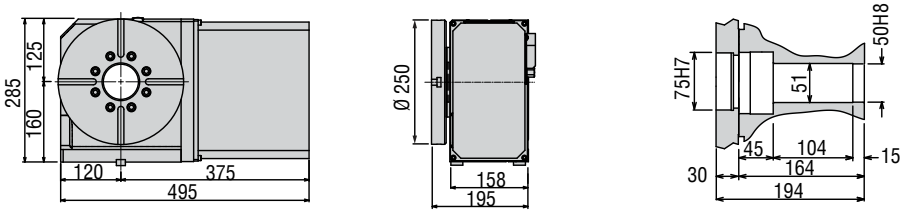
RWA-160R



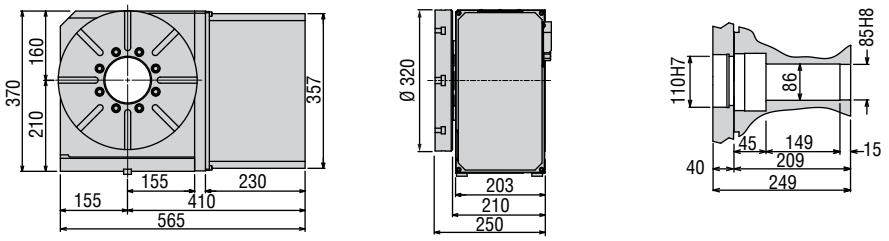
RWA-200R



RWA-250R



RWA-320R



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

RN-100R

RWA-320

Options & Accessories

TPC NC Controller	p.62
Chucks	p.74
Tailstock	p.75
Support Spindle	p.77
Face Plate	p.77
Encoder / Scale	p.78
Pull Stud Device	p.79
Rotary Joint	p.79
Booster	p.80
PVC or Steel Cables	p.81

Clamping Block and Bolt

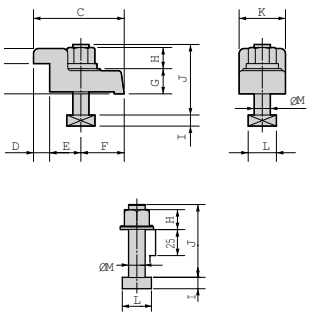
Dimensions = mm

	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

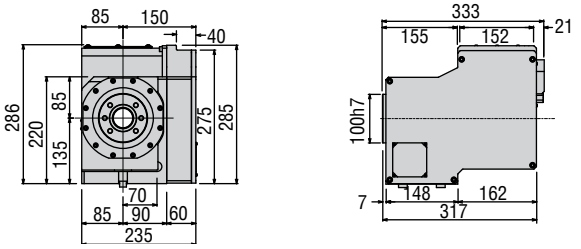
Table Model			RWA-160R,B	RWA-200R,B	RWA-250R,B	RWA-320R,B	RNCV-401R,B
Spindle outer diameter		mm	100h7	120h7	140h7	180h7	-
Table diameter (optional)		mm	(160, 200)	(200, 250)	250	320	400
Center height		mm	135	160	160	210	255
Center bore	Nose Diameter	mm	55H7	65H7	80H7	115H7	40H7
	Thru Diameter	mm	40	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

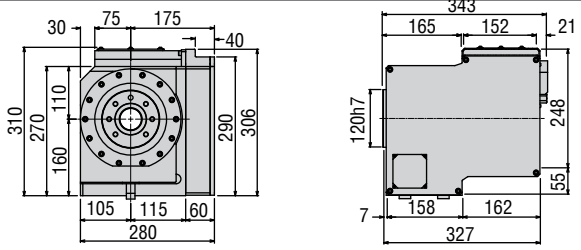
Dimensions

Drawings not to scale • Dimensions = mm

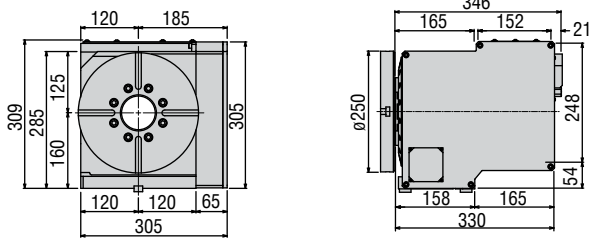
RWA-160R,B



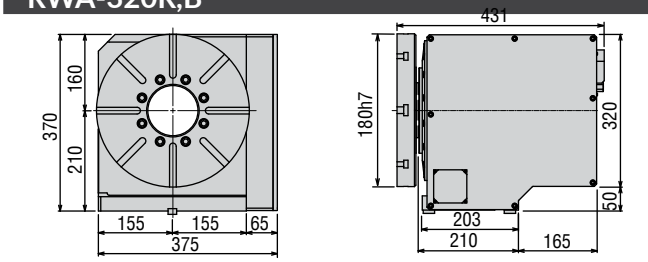
RWA-200R,B



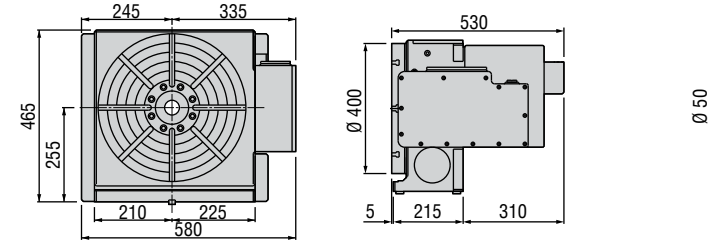
RWA-250R,B



RWA-320R,B



RNCV-401R,B



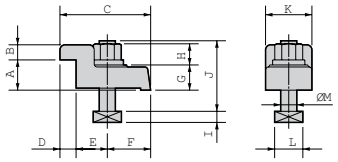
The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

RNCV-401R,B

Options & Accessories

TPC NC Controller	p.62
Chucks	p.74
Tailstock	p.75
Support Spindle	p.77
Face Plate	p.77
Encoder / Scale	p.78
Pull Stud Device	p.79
Rotary Joint	p.79
Booster	p.80
PVC or Steel Cables	p.81

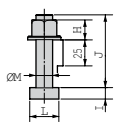
Type I



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



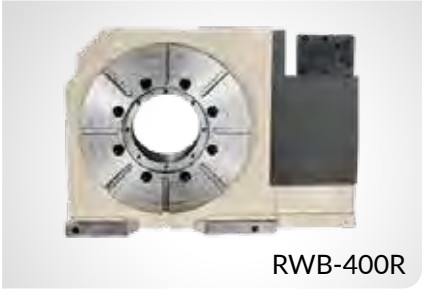
Note 1: When using a machine with a T-slot pitch other than the above, use suitable clamping blocks and bolts that are available on the market, or order custom-made ones from KOMA (opt.)

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

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 an external booster when hydraulics are not available. 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

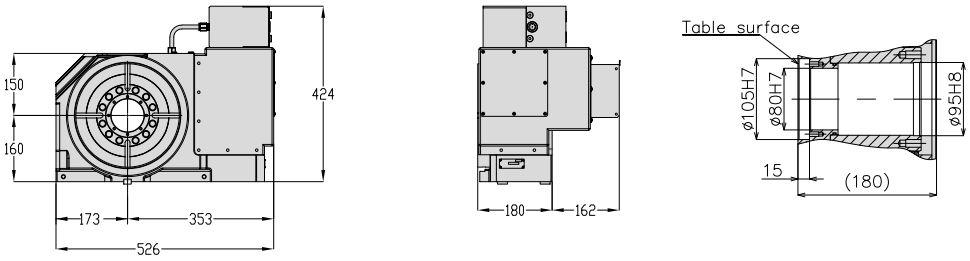
Table Model			RWB-250	RWB-250,S	RWB-320	RWB-320,S	RWB-400	RWB-500
Versions available			R, L	R, L	R, L	R, L	R, L	R, L
Table diameter		mm	250	250	320	320	400	500
Center height		mm	160	160	210	210	255	310
Center bore	Nose Diameter	mm	105	105	150	150	200	220
	Thru Diameter	mm	80	80	120	120	160	181
Table 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		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 (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		kg·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

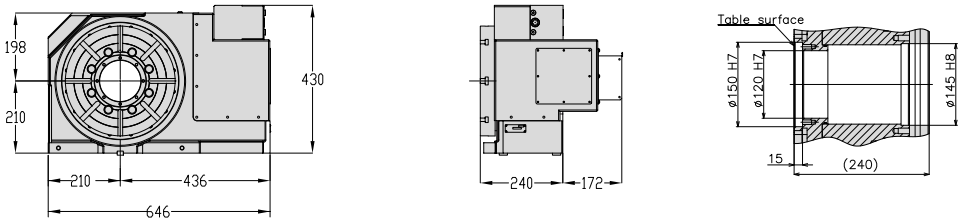
Dimensions

Drawings not to scale • Dimensions = mm

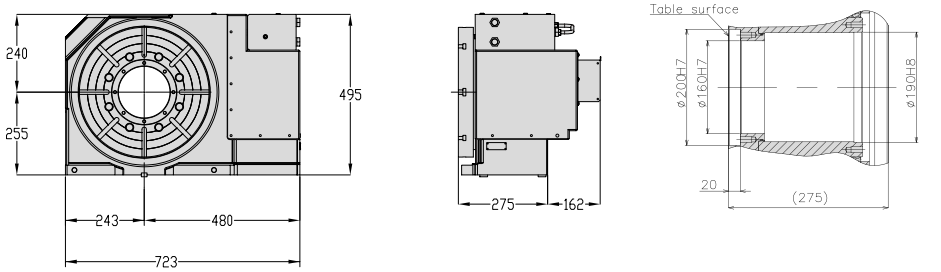
RWB-250R



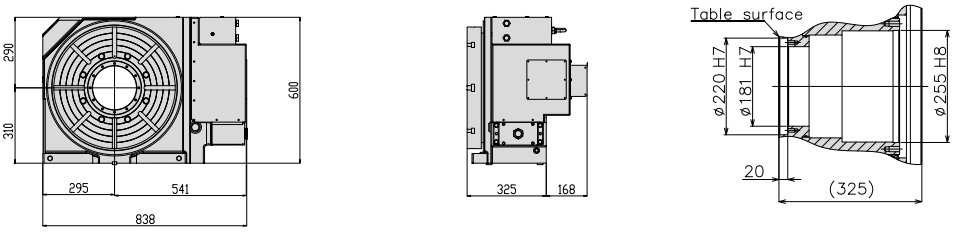
RWB-320R



RWB-400R



RWB-500R



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

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-400R • TSH-255 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.

Options & Accessories

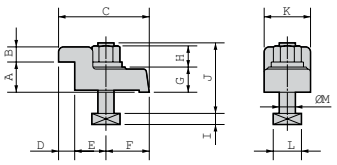
Clamping Block and Bolt

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.

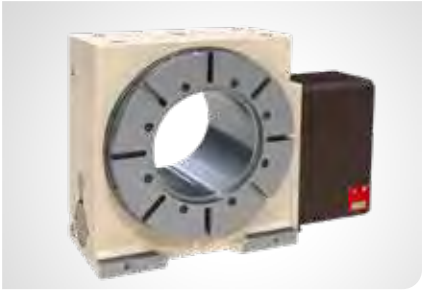


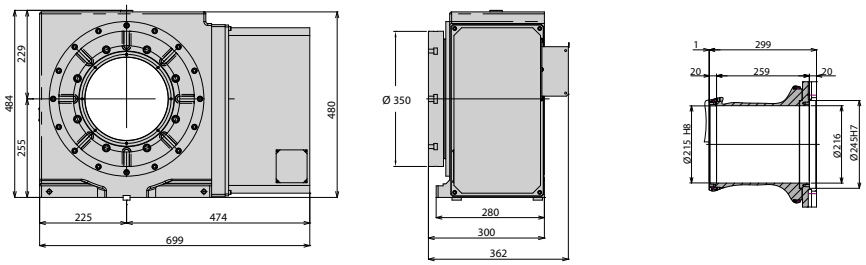
Table Model			RCB-350	RCB-450	RCB-550
Versions available			R	R	R
Table diameter			350	450	550
Center height			255	310	350
Center bore	Nose Diameter		245H7	295H7	345H7
	Thru Diameter		215	265	315
Table T-slot width			14H7	14H7	18H7
Guide block width			18H7	18H7	18H7
Servo motor*			Alpha 12i	Alpha 22i	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) [w/tailstock] W/SSB Support	400 (880) [800 (1,760)] 1800 (3960)	700 (1,540) [1,400 (3,080)] 3600 (7920)	1,000 (2,200) [2,000 (4,400)] 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

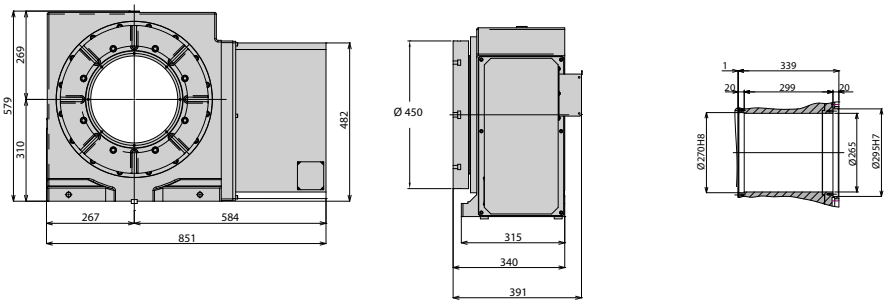
Dimensions

Drawings not to scale • Dimensions = mm

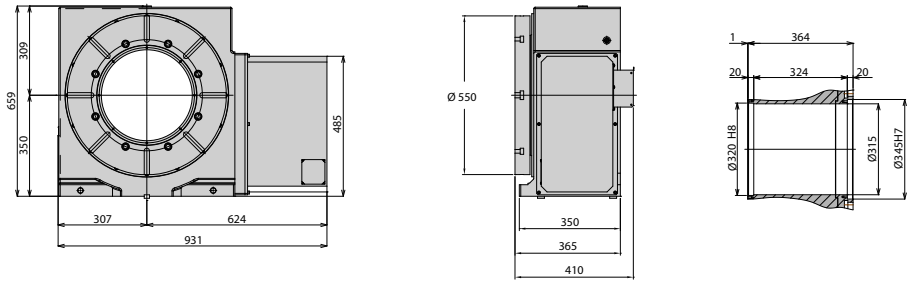
RCB-350



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.62
Chucks	p.74
Tailstock	p.75
Support Spindle	p.77
Face Plate	p.77
Encoder / Scale	p.78
Pull Stud Device	p.79
Rotary Joint	p.79
Booster	p.80
PVC or Steel Cables	p.81

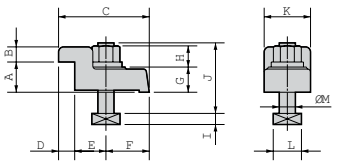
Clamping Block and Bolt

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

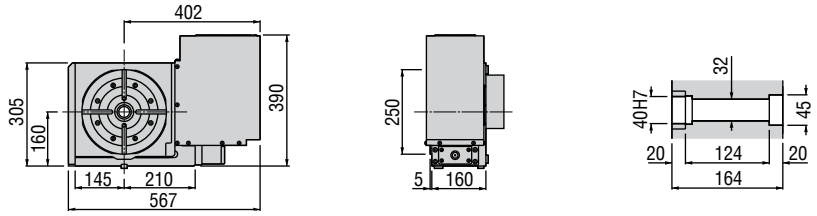
Table Model			RNCM-251	RNCM-301	RNCM-401	RNCM-501	RNCM-631
Versions available			R, L	R, L	R, L	R, L	R, L
Table diameter		mm	250	320	400	500	630
Center height		mm	160	210	255	310	400
Center bore	Nose Diameter	mm	40H7	40H7	40H7	50H7	60H6
	Thru Diameter	mm	32	40	40	50	60
Table T-slot width			12H7	14H7	14H7	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		x 10^{-3}kg·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		arc sec.	±7.5				
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		kg·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

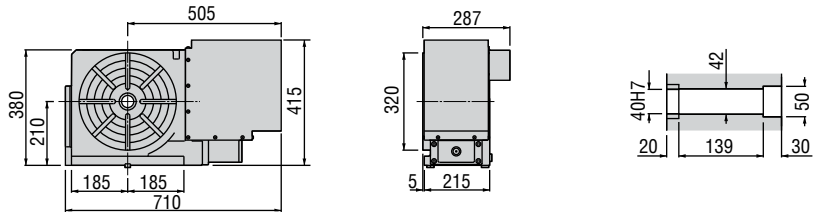
Dimensions

Drawings not to scale • Dimensions = mm

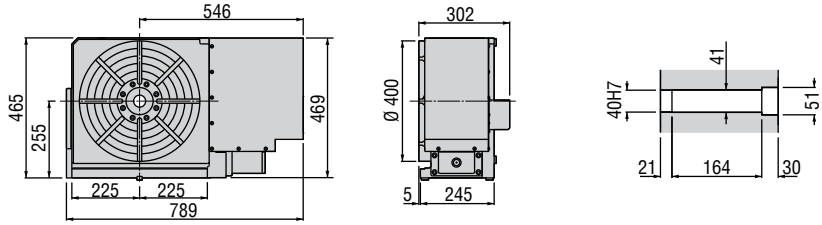
RNCM-251R



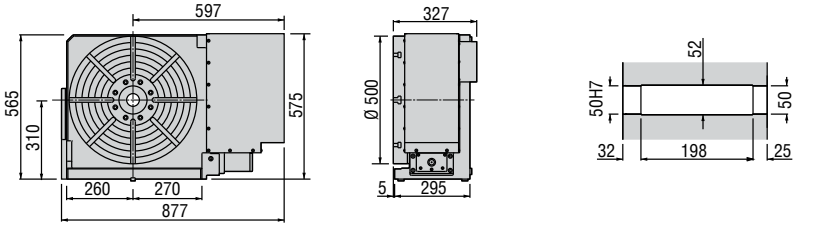
RNCM-301R



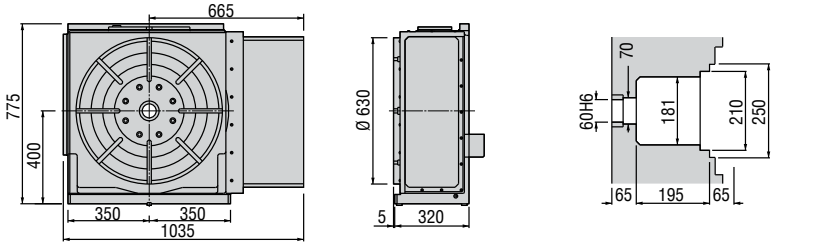
RNCM-401R



RNCM-501R



RNCM-631R



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

RNCM-401L

RNCM-631R

Options & Accessories

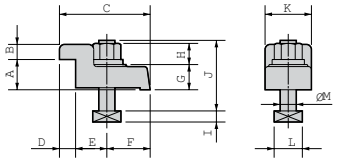
TPC NC Controller	p.62
Chucks	p.74
Tailstock	p.75
Support Spindle	p.77
Face Plate	p.77
Encoder / Scale	p.78
Pull Stud Device	p.79
Rotary Joint	p.79
Booster	p.80
PVC or Steel Cables	p.81

Clamping Block and Bolt

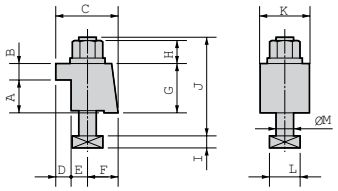
Dimensions = mm

	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

Type I



Type II



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.)

RN-100-2,3,4/300R-2,3,4| RWM-160R-2,3,4/200R-2,3,4/RBM-160

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.

RN-100R-4

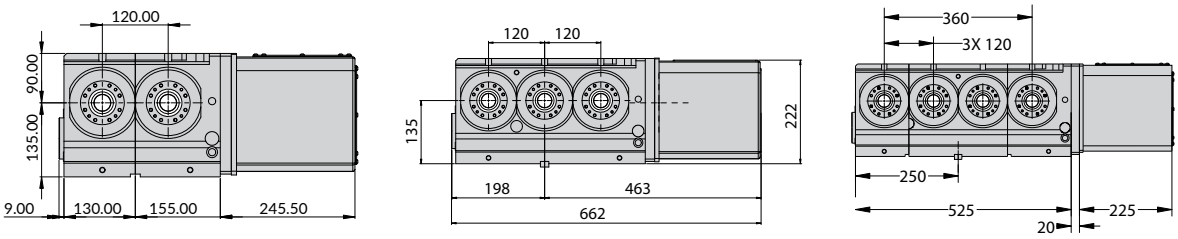
Table Model			RN-100-2,3,4	RWM-160R-2,3,4	RWM-200R-2,3,4	RN-300R-2,3,4	RBM-160-2,3,4
Versions available			R, L	R,L	R,L	R	R/L
Spindle outer diameter		mm	80h7	100h7	120h7	-	100h7
Table diameter (optional)		mm	(115)	(160)	(200)	320	(160)
Center height		mm	135	135	160	210	135
Center bore	Nose Diameter	mm	50H7	55H7	65H7	110H7	55H7
	Thru Diameter	mm	30	40	45	85	40
Table T-slot width (with face plate)			(10H8)	(12H8)	(12H8)	14H8	(12H8)
Minimum spindle center distance			120	215	250	380	215
Guide block width			18h7	14h7	18h7	18h7	14H7
Servo motor (Fanuc)*			Alpha 4i	160R-2 uses Alpha 4i 160R-3,4 use Alpha 8i	Alpha 8i	Alpha 12i	Alpha 4i
Maximum motor speed		rpm	5,000	5,000	4,000	4,000	5,000
Speed reduction ratio			1/36	1/72	1/72	1/120	1/72
Number of spindles			2 / 3 / 4	2	2	2 / 3	2
Maximum table speed		rpm	138.9	69.4	55	33.3	69.4
Inertia converted into motor shaft		x 10^{-3}kg·m²	.64 / .92 / 1.06	.31	.55	2.09 / 2.63	.31
Clamp system			Pneumatic				
Clamp torque @72psi		Nm (ft. lbs.)	80 (59)	500 (368)	800 (590)	880 (649)	500 (368)
Indexing accuracy		arc sec.	±30	±12.5	±10	±15	±12.5
Net Weight [dual spindle]		kg (lbs.)	70-110 (154-242)	[105 (231)]	[155 (341)]	[480 (1,056)]	[105 (231)]
Allowable wheel torque		Nm (ft. lbs.)	178 (131)	206 (151)	288 (212)	764 (563)	206 (151)
Allowable work inertia		kg·m²	.10	.64	1.25	3.7	.64
Allowable work weight		kg (lbs) [w/ tailstock]	25 (55) [50 (110)]	100 (220) [175 (385)]	125 (275) [250 (550)]	150 (330) [350 (770)]	100 (220)
		kg (lbs)	50 (110)	-	-	350 (770)	-
Allowable load when table clamped		N (lbf)	5,880 (1,317)	10,800 (2,418)	14,400 (3,211)	19,600 (4,390)	10,800 (2,418)
		Nm (ft. lbs.)	80 (59)	500 (368)	800 (590)	880 (649)	500 (368)
		Nm (ft. lbs.)	156 (115)	780 (574)	1,900 (1,400)	1,960 (1,444)	780 (574)

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

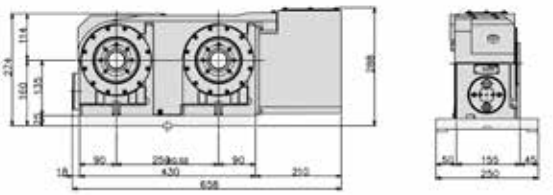
Dimensions

Drawings

RN-100R-2,3,4



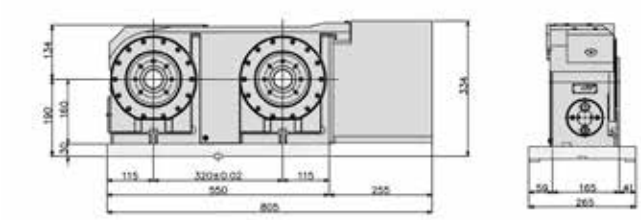
RWM-160R-2,3,4 (3 spindle model also available)



*Baseplate not included

RN-250-2

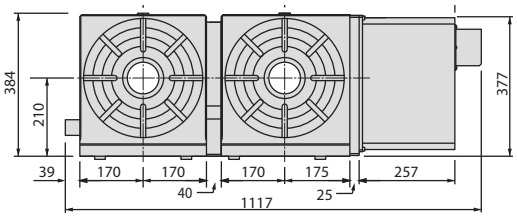
RWM-200R-2,3,4 (3 spindle model also available)

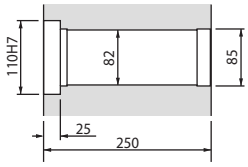


*Baseplate not included

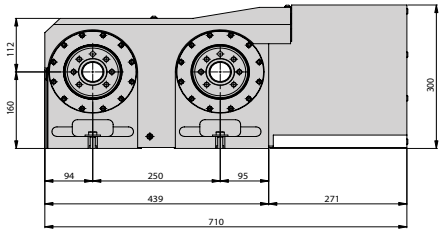
RBM-160

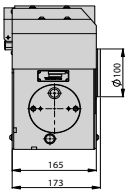
RN-300R-2,3,4 (3 spindle model also available)





RBM-160-2





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

*Minimum center distance displayed above other center distances available

Options & Accessories

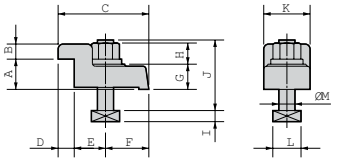
Clamping Block and Bolt

Dimensions = mm

	Type	Q'ty	T-Slot Width	A	B	C	D	E	F	G	H	I	J	K	L	M
RN-100R	I	2	18	25	12	80	12	33	35	22	21	11	65	40	28	16
RWM-160R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RWM-200R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RN-300R	I	4	18	30	15	90	16	31	43	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-800R, 1000R, 1250R, 1600R

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.

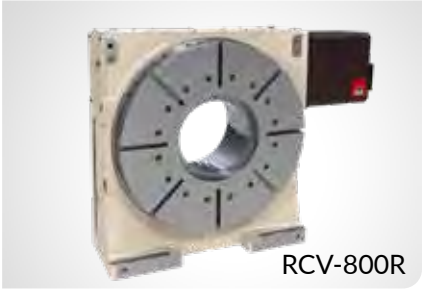

RCV-800R

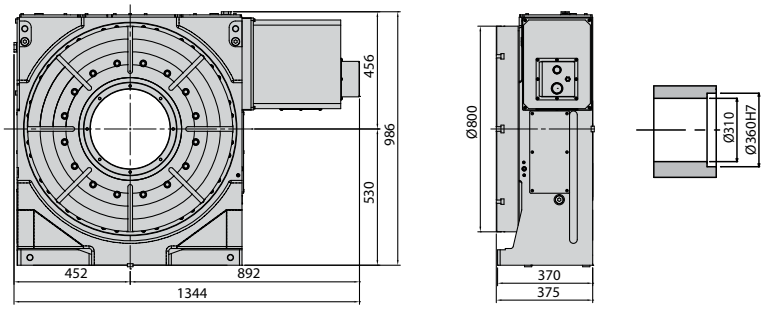
Table Model			RCV-800R	RCV-1000R	RCV-1250R	RCV-1600R
Table diameter (optional)		mm	800 (1,000)	1,000 (1,200)	1,250 (1,500)	1,600 (1,800)
Center height		mm	530	625	775	950
Center bore	Nose Diameter	mm	360H7 x 45	410H7 x 75	500H7 x 25	670H7 x 65
	Thru Diameter	mm	310	360	450	-
Table T-slot width			18H7	22H7	22H7	28H7
Guide block width			22h7			22h7
Servo motor (Fanuc)*			Alpha 12i	Alpha 22i	Alpha 22i	Alpha iF22
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	4.17
Inertia converted into motor shaft		x 10^{-3}kg·m^2	4.89	12.2	5.04	6.14
Clamp system**			Hydraulic			
Clamp torque @500psi		Nm (ft. lbs.)	16,000 (11,792)	20,000 (14,740)	33,000 (24,321)	41,000 (30,217)
Indexing accuracy		arc sec.	±7.5			
Net Weight		kg (lbs.)	1,450 (3,190)	2,500 (5,500)	4,850 (10,670)	7,200 (15,840)
Allowable wheel torque		Nm (ft. lbs.)	7,840 (5,778)	13,230 (9,751)	25,000 (18,425)	25,000 (18,425)
Allowable work inertia		kg·m^2	120	874	2,374	6,400
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)]	10,000 (22,000) [20,000 (44,000)]
		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)	754,000 (168,896)
		Nm (ft. lbs.)	7,000 (5,159)	20,000 (14,740)	33,000 (24,321)	41,000 (30,217)
		Nm (ft. lbs.)	11,600 (8,550)	22,900 (16,877)	56,700 (41,788)	153,000 (112,761)

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

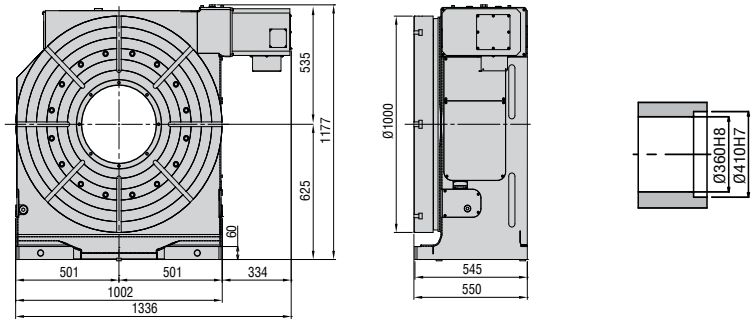
Dimensions

Drawings not to scale • Dimensions = mm

RCV-800R

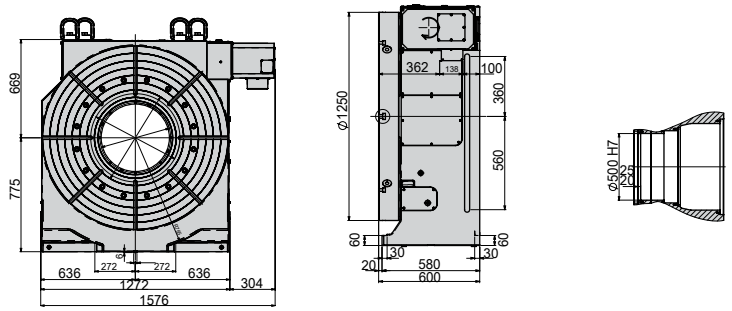


RCV-1000R

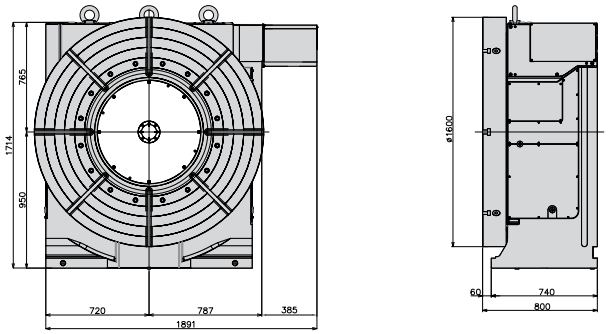


RCV-1000R
Shown with 1200mm faceplate.

RCV-1250R



RCV-1600R



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

Options & Accessories

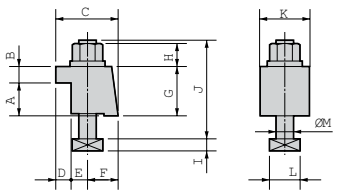
TPC NC Controller	p.62
Chucks	p.74
Tailstock	p.75
Support Spindle	p.77
Face Plate	p.77
Encoder / Scale	p.78
Pull Stud Device	p.79
Rotary Joint	p.79
Booster	p.80
PVC or Steel Cables	p.81

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
RCV-1600R	II	8	22	70	32	98	29	16	60	105	27	13	160	100	32	20

Type II



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.)

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
Spindle outer diameter			100h7	120h7
Table diameter (optional)			(160 or 200)	(200 or 250)
Center height			135	160
Center bore	Nose Diameter (w/ face plate)		55H7 (50H7)	65H7 (60H7)
	Thru Diameter		40	45
Table T-slot width w/ face plate			12H8	12H8
Guide block width			14h7	18h7
Controller (included with table)			TPC-Jr K2	TPC-Jr K3
Maximum motor speed		rpm	3,000	
Speed reduction ratio			1/60	1/72
Maximum table speed		rpm	50	41.7
Inertia converted into motor shaft		x 10^{-3}kg·m^2	.19	.19
Clamp system			Pneumatic	
Clamp torque @72psi		Nm (ft. lbs.)	156 (115)	400 (295)
Indexing accuracy		arc sec.	±12.5	±10
Net Weight		kg (lbs.)	40 (88)	65 (143)
Allowable wheel torque		Nm (ft. lbs.)	147 (108)	264 (195)
Allowable work inertia		kg·m^2	.48	1.2
Allowable work weight		kg (lbs) [w/ tailstock]	75 (165) [150 (330)]	125 (275) [250 (550)]
		kg (lbs)	150 (330)	250 (550)
Allowable load when table clamped		N (lbf)	7,840 (1,756)	14,400 (10,613)
		Nm (ft. lbs.)	156 (115)	400 (295)
		Nm (ft. lbs.)	392 (289)	1900 (1400)

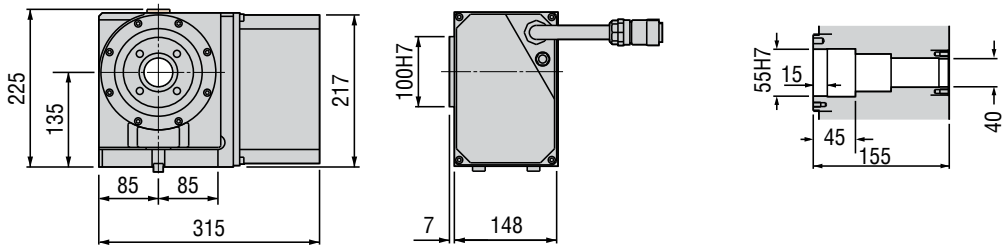
Controller		TPC-Jr		
Control axis		1 axis		
Servo motor		AC servo, ABS detector		
Command unit		0.001°		
Dividing number	Direct indexing	1 to 999999 even indexing		
	Arc indexing	1 to 999 even indexing		
Max. command angle		± 999.999°		
Command system		INC, ABS, Shortcut ABS, INC/ABS mixed system		
Input system		Includes MDI & full RS-232 communication		
Program control		Workpiece No. (W0000 to 9999)		
Program capacity		1000 blocks in main & sub-program together		
Cable supplied (Standard)		Between rotary table & TPC-Jr (1 pc.)		
		For motor : 5m		
		Power cable : 5m		
		Interlocking cable : 5m		
Power Requirements (less than 100 ohm ground resistance)		1 Ø 200/220V±10% 50/60Hz (non-CE)		
		1 Ø 230V±10% 50/60Hz (CE)		
		Model	Power capacity	Fuse Rating
		Jr H2	1.2KVA	8A
		Jr H3	2.2KVA	15A

Specifications subject to change without notice

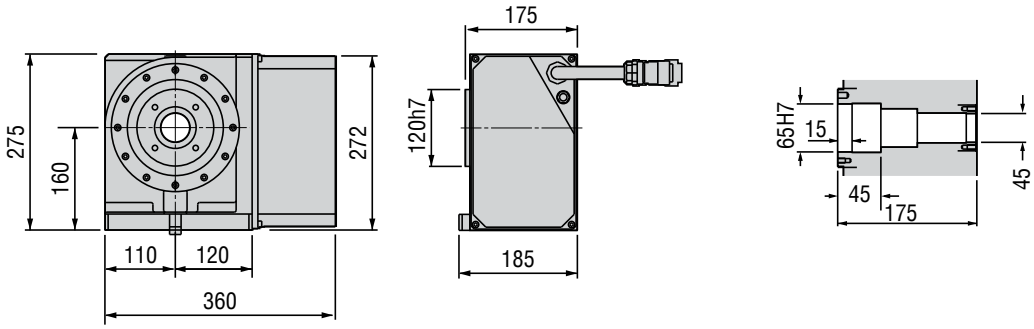
Dimensions

Drawings not to scale • Dimensions = mm

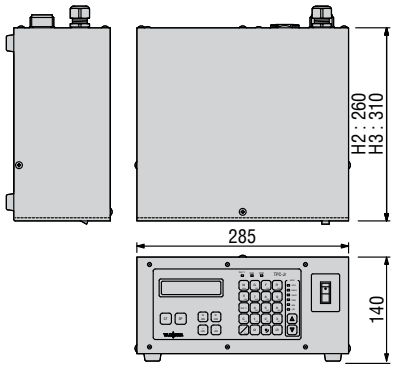
RWE-160 TPC



RWE-200 TPC



TPC-Jr NC CONTROLLER



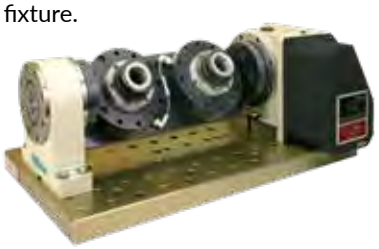
The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

RWE-200 TPC with optional Steel Braided Cable

RWE-160 TPC with 5C Collet

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.



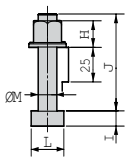
Options & Accessories

TPC NC Controller	p.62
Chucks	p.74
Tailstock	p.75
Support Spindle	p.77
Face Plate	p.77
Encoder / Scale	p.78
Pull Stud Device	p.79
Rotary Joint	p.79
Booster	p.80
PVC or Steel Cables	p.81

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.

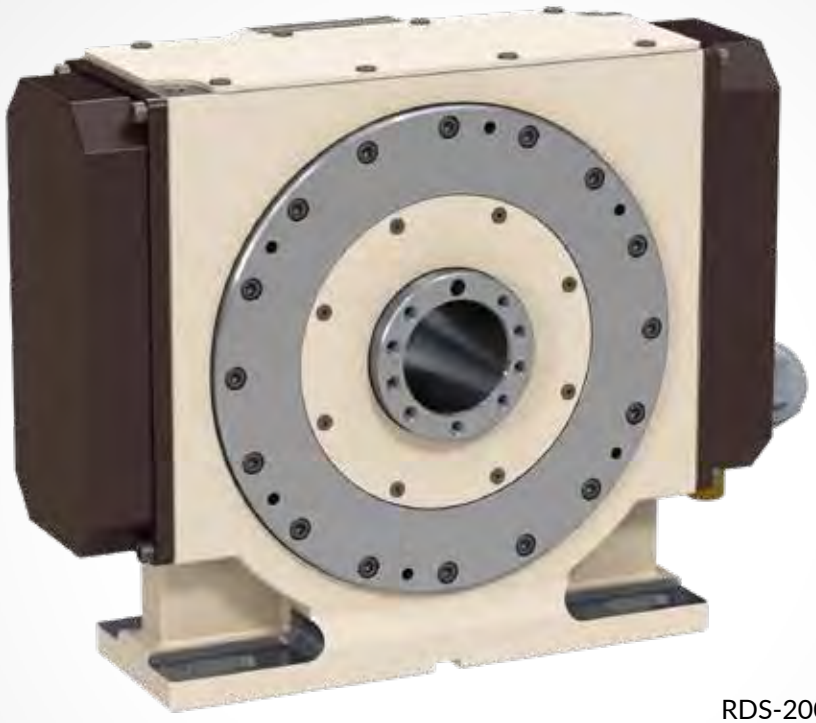
RDS-200

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

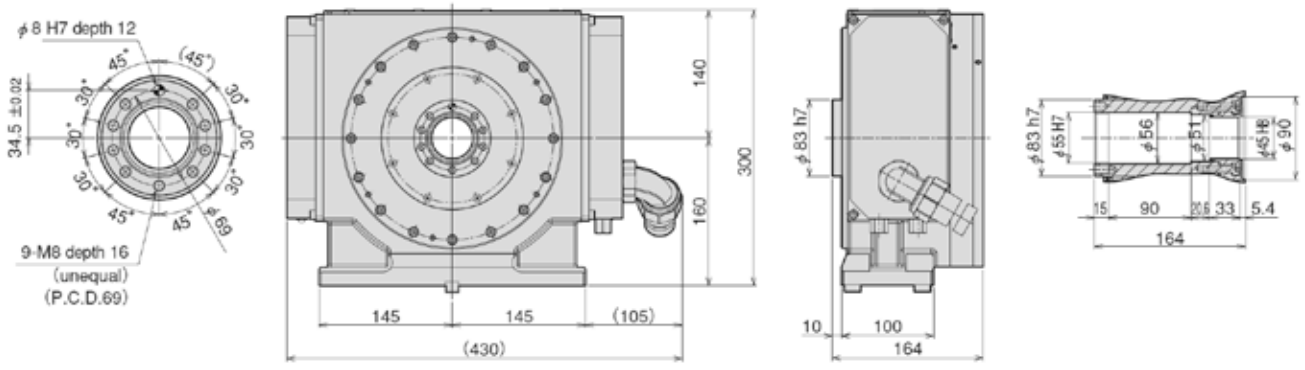


RDS-200

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.62
Chucks	p.74
Tailstock	p.75
Support Spindle	p.77
Face Plate	p.77
Encoder / Scale	p.78
Pull Stud Device	p.79
Rotary Joint	p.79
Booster	p.80
PVC or Steel Cables	p.81

RBS-160K, 250K, 320K

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

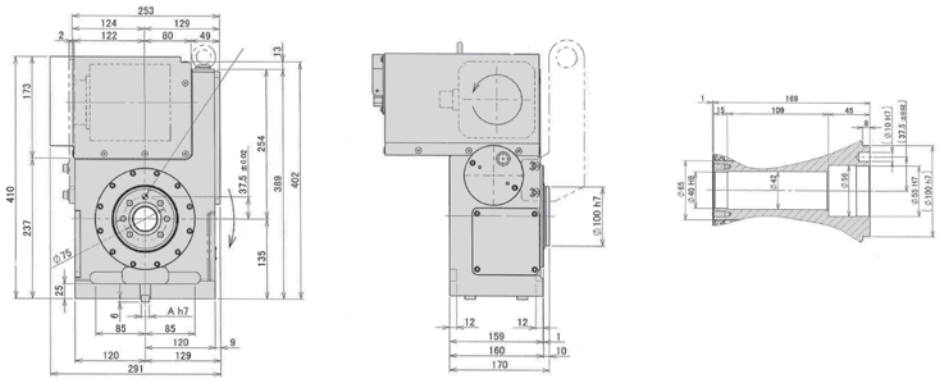
Table Model			RBS-160K	RBS-250K	RBS-320K
Spindle outer diameter		mm	100h7	140h7	180h7
Table diameter (optional)		mm	(160, 200)	250	320
Center height		mm	135	160	210
Center bore	Nose Diameter		55H7	80H7	115H7
	Thru Diameter		40	50	85
Guide block width			14h7	18h7	18h7
Servo motor (For Fanuc)*			Alpha 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

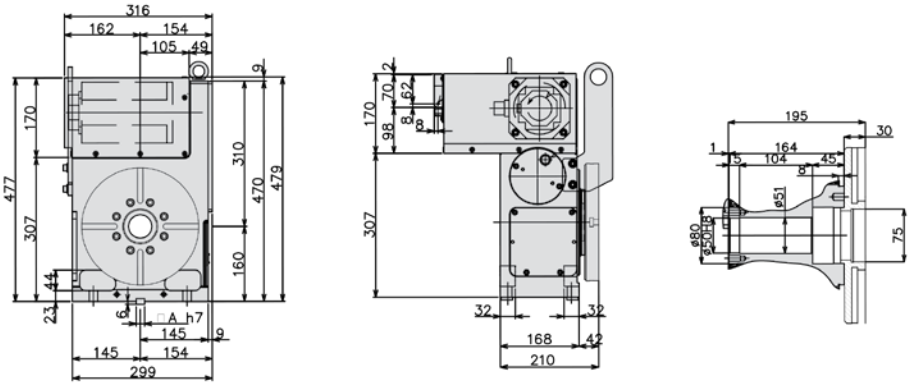
Dimensions

Drawings not to scale • Dimensions = mm

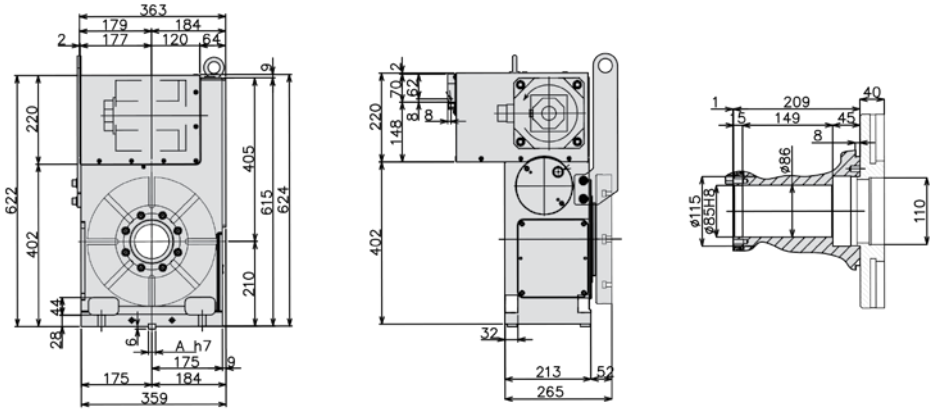
RBS-160K



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.62
Chucks	p.74
Tailstock	p.75
Support Spindle	p.77
Face Plate	p.77
Encoder / Scale	p.78
Pull Stud Device	p.79
Rotary Joint	p.79
Booster	p.80
PVC or Steel Cables	p.81

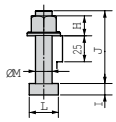


Table comes with appropriate size T-bolt

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

HEAVY DUTY • DUAL DISC HYDRAULIC CLAMPING

The RWB,K-Series rotary tables are equipped with the finest Tsudakoma technologies. RWB tables utilize a powerful dual disc hydraulic clamping mechanism, and are available with an external booster when hydraulics are not in use. 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-400K

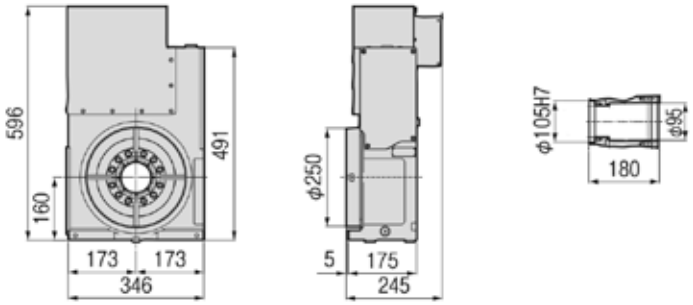
Table Model			RWB-250K	RWB-250K,S	RWB-320K	RWB-320K,S	RWB-400K	RWB-500K
Table diameter		mm	250	250	320	320	400	500
Center height		mm	160	160	210	210	255	310
Center bore	Nose Diameter	mm	105	105	150	150	200	220
	Thru Diameter	mm	80	80	120	120	160	181
Table T-slot width			12H7	12H7	14H7	14H7	14H7	18H7
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		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		arc sec.	±7					
Net Weight		kg (lbs.)	125 (286)	125 (286)	250 (550)	250 (550)	360 (792)	580 (1,276)
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

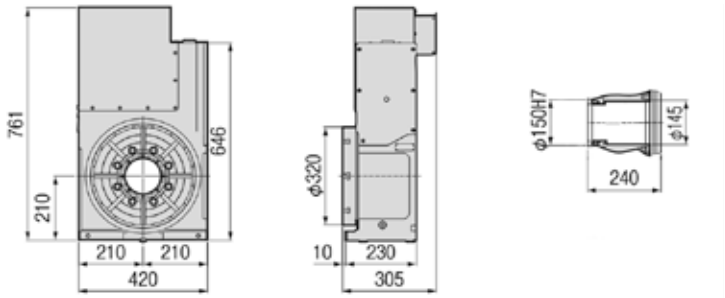
Dimensions

Drawings not to scale • Dimensions = mm

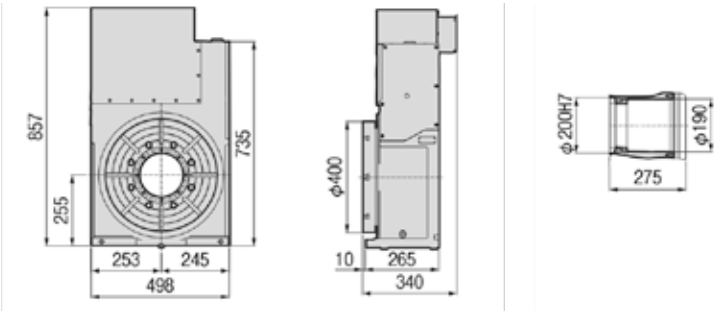
RWB-250K



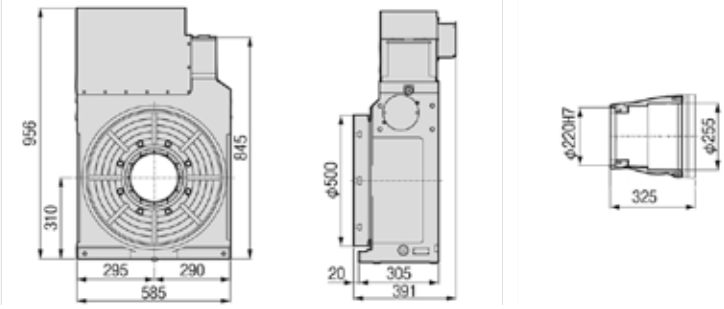
RWB-320K



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

Options & Accessories

TPC NC Controller	p.62
Chucks	p.74
Tailstock	p.75
Support Spindle	p.77
Face Plate	p.77
Encoder / Scale	p.78
Pull Stud Device	p.79
Rotary Joint	p.79
Booster	p.80
PVC or Steel Cables	p.81

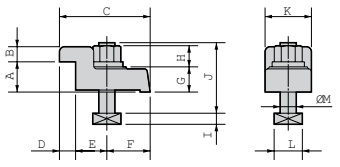
Clamping Block and Bolt

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

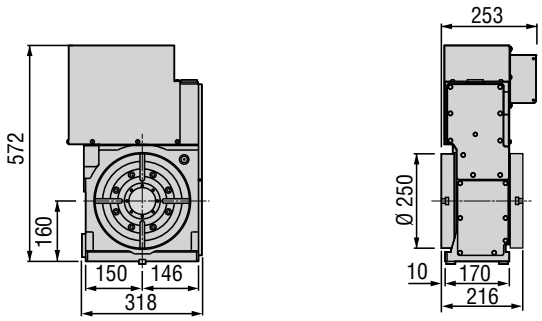
Table Model			RWB-250K-2	RWB-250K-2,S	RWB-320K-2	RWB-320K-2,S	RWB-400K-2	RWB-500K-2
Table diameter		mm	250	250	320	320	400	500
Center height		mm	160	160	210	210	255	310
Center bore	Nose Diameter	mm	95H7	95H7	130H7	130H7	190H7	220H7
Table T-slot width			12H7	12H7	14H7	14H7	14H7	18H7
Guide block width			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	4,000
Speed reduction ratio			1/90	**1/45**	1/90	**1/45**	1/90	1/180
Maximum table speed		rpm	44.4	**88.9**	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

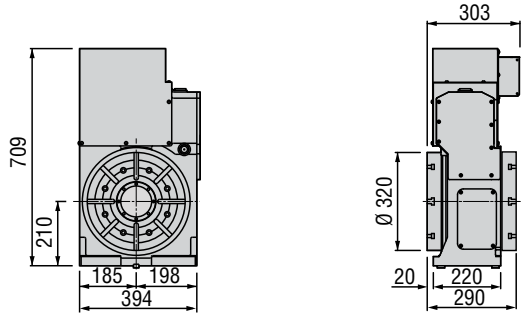
Dimensions

Drawings not to scale • Dimensions = mm

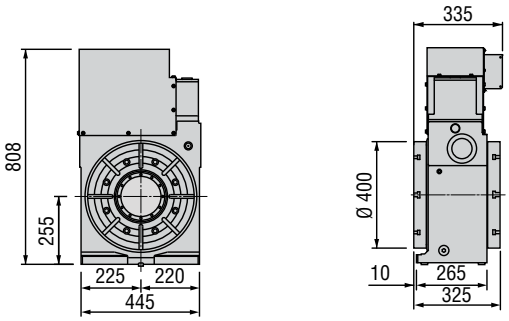
RWB-250K-2



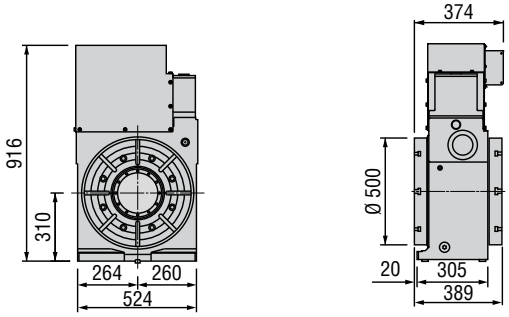
RWB-320K-2



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.62
Chucks	p.74
Tailstock	p.75
Support Spindle	p.77
Face Plate	p.77
Encoder / Scale	p.78
Pull Stud Device	p.79
Rotary Joint	p.79
Booster	p.80
PVC or Steel Cables	p.81

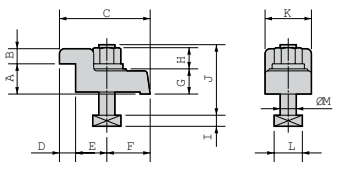
Clamping Block and Bolt

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.)

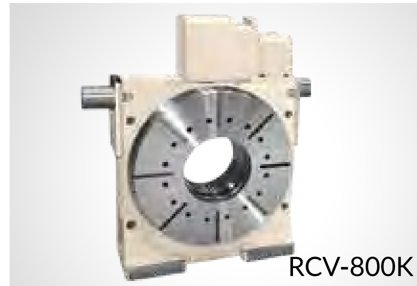
Type I



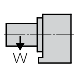
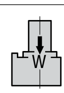
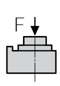
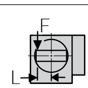
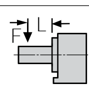
RCV-800K, 1000K, 1250K, 1600K

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

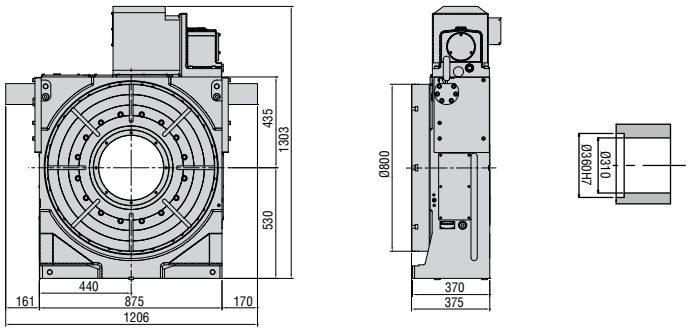
Table Model			RCV-800K	RCV-1000K	RCV-1250K	RCV-1600K
Table diameter (optional)		mm	800 (1,000)	1,000 (1,200)	1,250 (1,500)	1,600
Center height		mm	530	625	775	950
Center bore	Nose Diameter	mm	360H7 x 45	410H7 x 75	500H7 x 25	670H7 x 65
	Thru Diameter	mm	310	360	450	-
Table T-slot width			18H7	22H7	22H7	28H7
Guide block width			22h7			22h7
Servo motor (Fanuc)*			Alpha 12i	Alpha 22i	Alpha 22i	Alpha iF22
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	4.17
Inertia converted into motor shaft		x 10^{-3}kg·m²	4.89	12.2	5.04	6.14
Clamp system**			Hydraulic			
Clamp torque @500psi		Nm (ft. lbs.)	16,000 (11,792)	20,000 (14,740)	33,000 (24,321)	41,000 (30,217)
Indexing accuracy		arc sec.	±7.5			
Net Weight		kg (lbs.)	1,450 (3,190)	2,500 (5,500)	4,850 (10,670)	7,200 (15,840)
Allowable wheel torque		Nm (ft. lbs.)	7,840 (5,778)	13,230 (9,751)	25,000 (18,425)	25,000 (18,425)
Allowable work inertia		kg·m²	120	874	2,374	6,400
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)]	10,000 (22,000) [20,000 (44,000)]
		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)	754,000 (168,896)
		Nm (ft. lbs.)	7,000 (5,159)	20,000 (14,740)	33,000 (24,321)	41,000 (30,217)
		Nm (ft. lbs.)	11,600 (8,550)	22,900 (16,877)	56,700 (41,788)	153,000 (112,761)

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

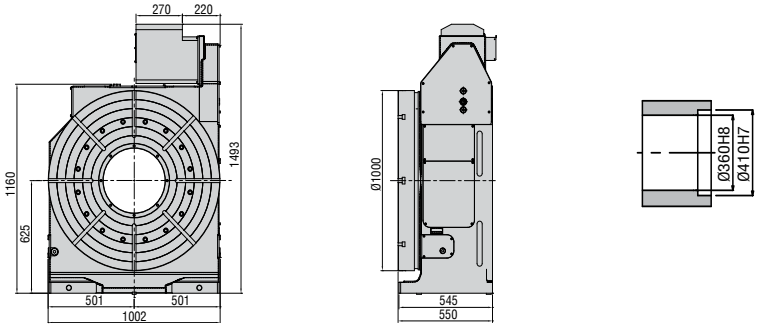
Dimensions

Drawings not to scale • Dimensions = mm

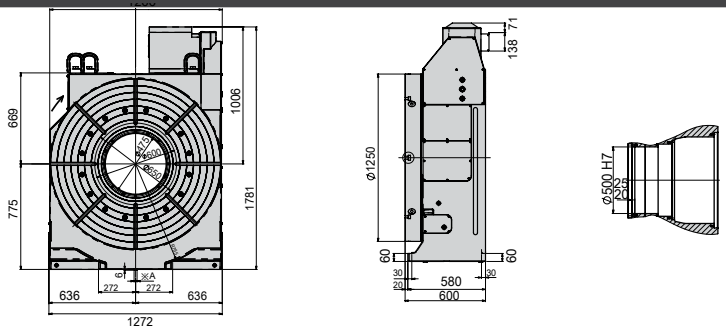
RCV-800K



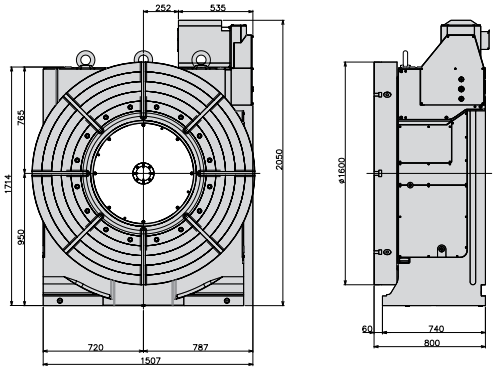
RCV-1000K



RCV-1250K



RCV-1600K



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

• RCV-800K

Options & Accessories

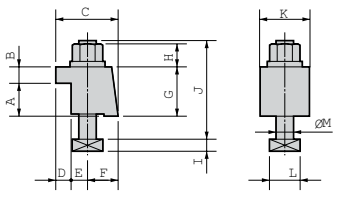
TPC NC Controller	p.62
Chucks	p.74
Tailstock	p.75
Support Spindle	p.77
Face Plate	p.77
Encoder / Scale	p.78
Pull Stud Device	p.79
Rotary Joint	p.79
Booster	p.80
PVC or Steel Cables	p.81

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	70
RCV-1600K	II	8	22	70	32	98	29	16	60	105	27	13	160	100	32	20

Type II



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.)

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

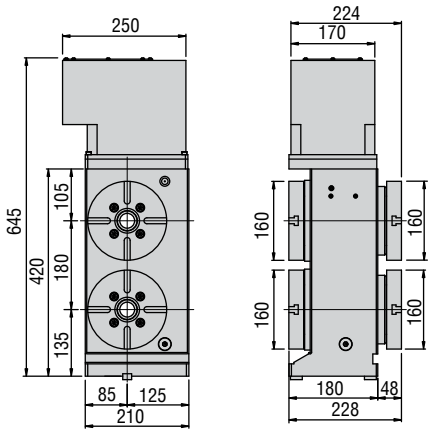
Table Model			RT-147	RT-251
Table diameter		mm	160 x (2,4)	200 x (2,4)
Center height		mm	135 & 315	135 & 385
Center bore	Nose Diameter	mm	55H7	55H7
	Thru Diameter	mm	40	40
Table T-slot width			12H8	12H8
Guide block width			14h7	14h7
Servo motor (Fanuc)*			Alpha 4i	Alpha 4i
Maximum motor speed		rpm	5,000	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

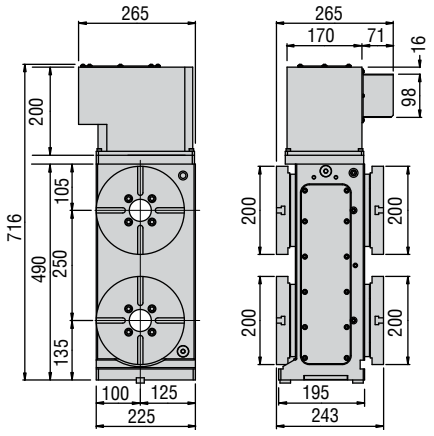
Dimensions

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.62
Chucks	p.74
Tailstock	p.75
Support Spindle	p.77
Face Plate	p.77
Encoder / Scale	p.78
Pull Stud Device	p.79
Rotary Joint	p.79
Booster	p.80
PVC or Steel Cables	p.81

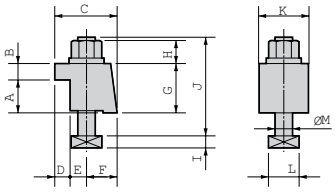
Clamping Block and Bolt

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.

RNCK-631

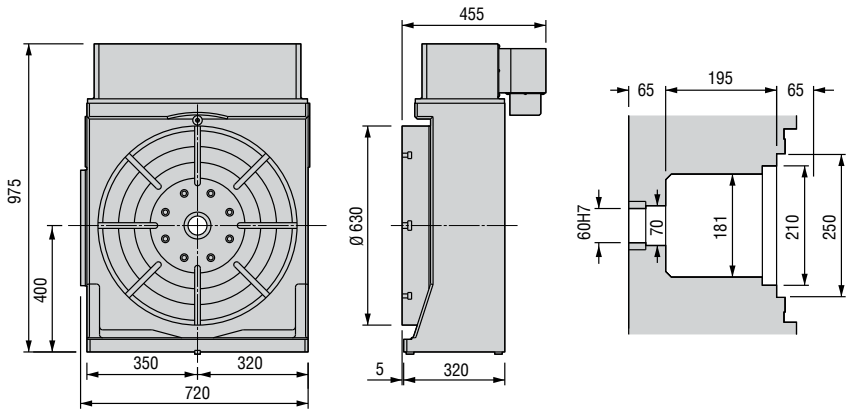
Table Model			RNCK-631	RNCK-631-BB
Table diameter		mm	630	630
Center height		mm	400	400
Center bore	Nose Diameter	mm	60H6	320H7
	Thru Diameter	mm	60	320
Table T-slot width			18H7	18H7
Guide block width			18h7	18h7
Servo motor (Fanuc)*			Alpha 12i	Alpha 12i
Maximum motor speed		rpm	4,000	4,000
Speed reduction ratio			1/180	1/180
Maximum table speed		rpm	22.2	22.2
Inertia converted into motor shaft		x 10^{-3}kg·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		kg·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

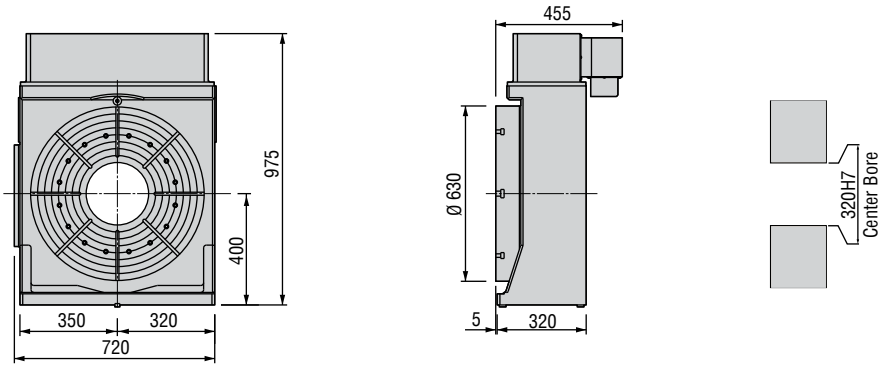
Dimensions

Drawings not to scale • Dimensions = mm

RNCK-631



RNCK-631-BB

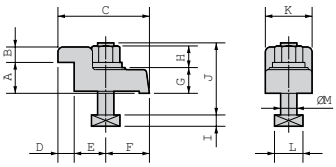


The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

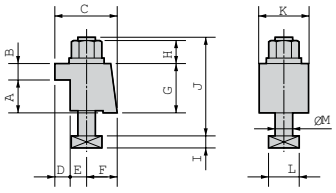
RNCK-631
Optional Swivel Box

RNCK-631-BB

Type I



Type II



Options & Accessories

TPC NC Controller	p.62
Chucks	p.74
Tailstock	p.75
Support Spindle	p.77
Face Plate	p.77
Encoder / Scale	p.78
Pull Stud Device	p.79
Rotary Joint	p.79
Booster	p.80
PVC or Steel Cables	p.81

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

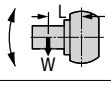
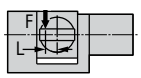
Note: When using a machine with a T-slot pitch other than the above, use suitable clamping blocks and bolts that are available on the market, or order custom-made ones from KOMA (opt.)

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.


TBS-160, H

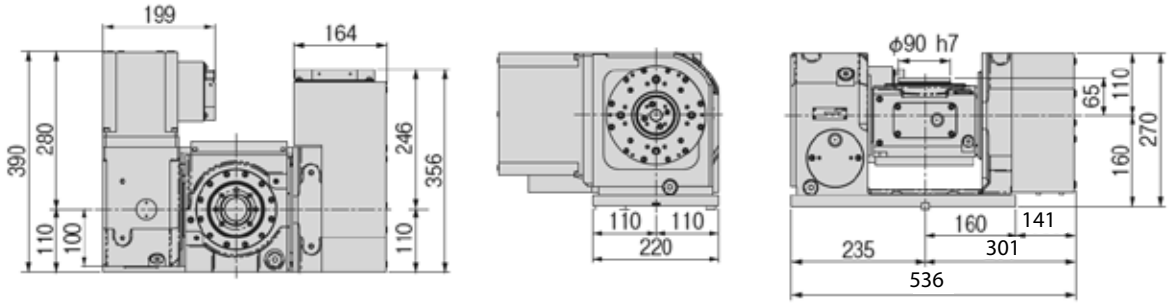
Model			TBS-130,H		TBS-160,H		TBS-250,H	
Tilt Range			-30° ~ +110°		-30° ~ +110°		-30° ~ +110°	
Spindle outer diameter			90h7		100h7		140H7	
Table diameter (optional)			(135)		(160 or 200)		(250)	
Table height at 0° position			225 (250 w/ faceplate)		270 (300 w/ faceplate)		290 (320 w/ faceplate)	
Center 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*	*Tilt*	*Rotary*	*Tilt*	*Rotary*	*Tilt*
			Alpha 2i	Alpha 2i	Alpha 2i	Alpha 4i	Alpha 8i	
Maximum motor speed		rpm	5,000	5,000	5,000	5,000	4,000	
Speed reduction ratio			1/48	1/60	1/60	1/60	1/45	1/60
Maximum table speed		rpm	104.2	83.3	83.3	83.3	88.8	66.6
Inertia converted into motor shaft		x 10^{-3}kg·m^2	.074	.072	.17	.18	.465	
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				±20	
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

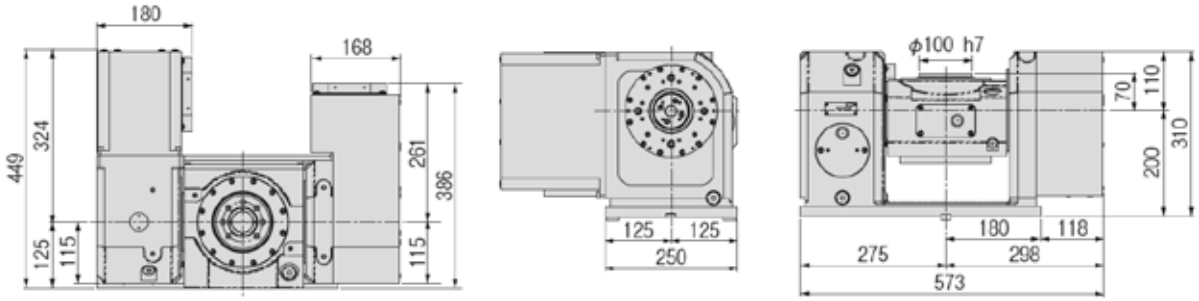
Dimensions

Drawings not to scale • Dimensions = mm

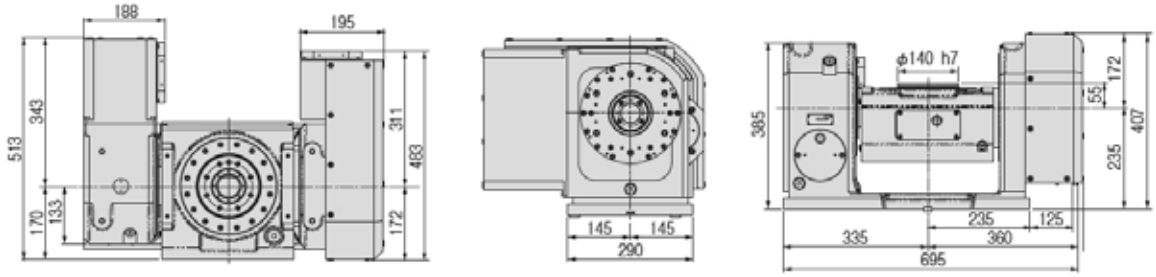
TBS-130,H



TBS-160,H



TBS-250,H



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

Options & Accessories

Clamping Block and Bolt

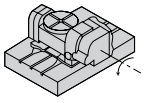
Dimensions = mm

	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

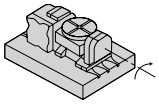
Note 1: In the case of layout B, contact us for details about mounting.

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.)

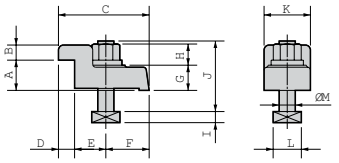
Layout a



Layout b



Type I

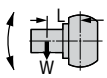
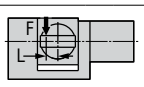


TWA-100, 130, 160, 200/ TN-320

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.

TWA-130

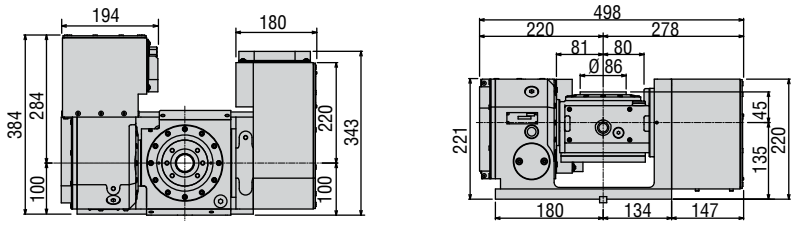
Table Model			TWA-100		TWA-130		TWA-160		TWA-200		TN-320	
Tilt Range			-17° ~ +107°		-17° ~ +107°		-30° ~ +110°		-30° ~ +110°		-30° ~ +110°	
Spindle outer diameter		mm	86h7		90h7		100h7		120h7		-	
Table diameter (optional)		mm	(135)		(135)		(160 or 200)		(200 or 250)		320	
Table height at 0° position		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

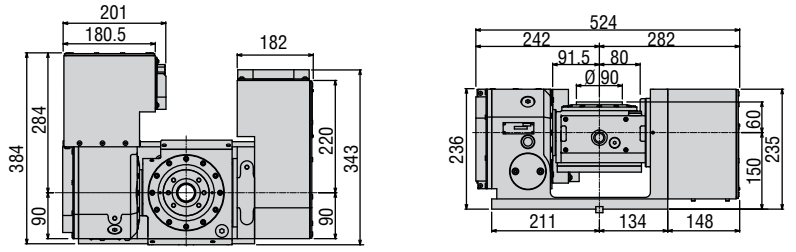
Dimensions

Drawings not to scale • Dimensions = mm

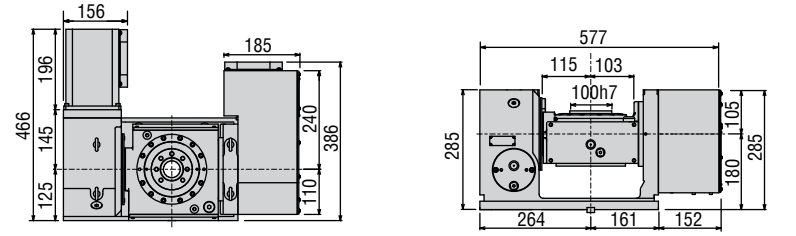
TWA-100



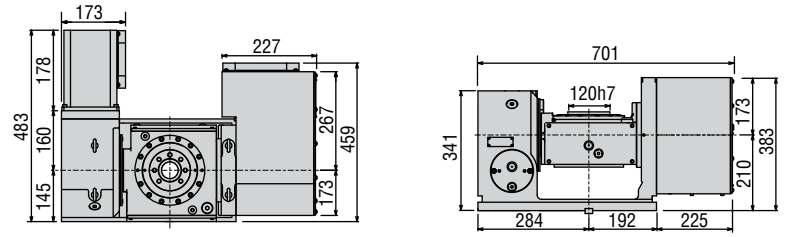
TWA-130



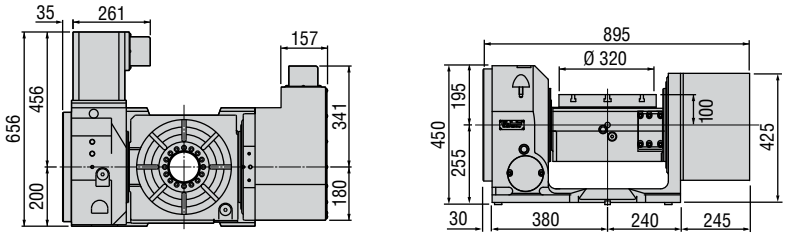
TWA-160



TWA-200



TN-320



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

WORKPIECE MOUNTING SPACE FOR TILTING ROTARY TABLES

TWA-100	0 ~+90°	0 ~+107°	-17°~ 0
TWA-130	0 ~+90°	0 ~+107°	-17°~ 0
TWA-160	0 ~+90°	0 ~+110°	-30°~ 0
TWA-200	0 ~+90°	0 ~+110°	-30°~ 0
TN-320	0 ~+90°	0 ~+110°	-30°~ 0

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

TWA-130 Pull Stud Option

Options & Accessories

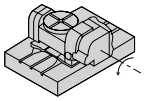
TPC NC Controller	p.62
Chucks	p.74
Tailstock	p.75
Support Spindle	p.77
Face Plate	p.77
Encoder / Scale	p.78
Pull Stud Device	p.79
Rotary Joint	p.79
Booster	p.80
PVC or Steel Cables	p.81

Clamping Block and Bolt

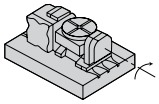
Dimensions = mm

	Type	Q'ty	Layout	T-Slot Width	A	B	C	D	E	F	G	H	I	J	K	L	M
TWA-100	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

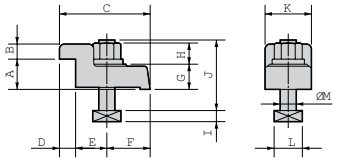
Layout a



Layout b



Type I



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.)

RTT-111,CA/RTT-135,AA

DROP TRUNNION • EQUIPPED TO UTILIZE A VARIETY OF WORKHOLD SYSTEMS


RTT-111,CA

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/unclamping of a number of chuck & pallet system.

RTT-111,CA

Drop Trunnion Rotary Table

HIGH SPEED
SMALL FOOTPRINT


3R Chuck & Pallet


Erowa Chuck & Pallet


Northfield 5C

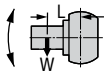
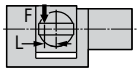

Northfield 2 Jaw Chuck
Northfield 3 Jaw Chuck


Hirschmann Chuck


Standard Faceplate

Equipped to utilize a variety of workhold systems.

system 3R EROWA NORTHFIELD Precision Instrument Corporation HIRSCHMANN

Model			RTT-111,CA		RTT-135, AA	
Tilt Range			-17° ~ +107°		-17° ~ +107°	
Spindle Output			See Options & Accessories		90h7	
Height at 0° position (w/out chuck)		mm	190		210 (235)	
Center height at 90° position		mm	190		150	
Guide block width			14h7		14h7	
Servo motor (Fanuc)*			*Rotary*	*Tilt*	*Rotary*	*Tilt*
			Alpha 2i	Alpha 2i	Alpha 2i	Alpha 2i
Maximum motor speed		rpm	5,000	5,000	5,000	5,000
Speed reduction ratio			1/60	1/120	1/60	1/120
Maximum table speed		rpm	83.3	41.7	83.3	41.7
Inertia converted into motor shaft		x 10^{-3}kg·m^2	.074	.072	.105	.142
Clamp system			Pneumatic Dual Taper	Pneumatic Dual Taper	Pneumatic Dual Taper	Pneumatic Dual Taper
Clamp torque @72psi		Nm (ft. lbs.)	500 (369)	500 (369)	500 (369)	500 (369)
Indexing accuracy		arc sec.	±20	-	±20	-
Tilting accuracy		arc sec.	-	±30	-	±22.5
Net Weight		kg (lbs.)	98 (216)		95 (209)	
Allowable wheel torque - rotary		Nm (ft. lbs.)	152 (112)		152 (112)	
Allowable work inertia		kg·m^2	.08		.08	
Allowable work weight kg (lbs)		0° tilt angle	35 (77)		35 (77)	
		0° ~ 90° tilt angle	20 (44)		20 (44)	
Allowable work moment		Nm (ft. lbs.)	57 (42)		57 (42)	
Allowable load when table clamped		N (lbf)	3,920 (878)		3,920 (878)	
		Nm (ft. lbs.)	500 (369)		500 (369)	
		Nm (ft. lbs.)	500 (369)		500 (369)	

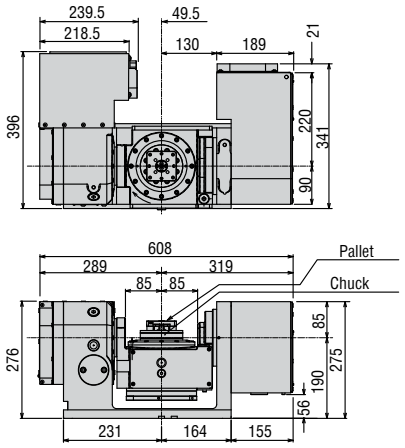
* Other motors & RPM available specifications subject to change without notice

RTT-135,AA

Dimensions

Drawings not to scale • Dimensions = mm

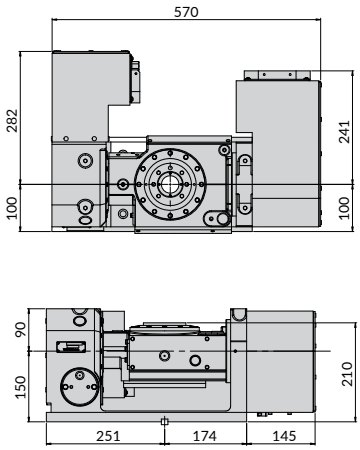
RTT-111, CA



Dimensions

Drawings not to scale • Dimensions = mm

RTT-135, AA



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

Options & Accessories

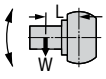
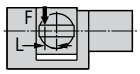
3R Chuck, Pallet & Draw Bar System	
Chuck	3R-600.86-30
70mm x 70mm Pallet	3R-601.7E-P
Draw Bar	3R-605.1
Erowa Chuck & Pallet System	
Chuck	**ER-007625**
Pallet	**ER-032731**
Northfield	
5C	**TA-02900-00**
4"-2 Jaw Chuck	call
4"-3 Jaw Chuck	**TA-02970-00**
Hirschmann	
Chuck	H6.11.10
Koma	
Face Plate	call

TWM-100-2, 160-2, 250-2/ TTNC-101-4

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.

TWM-250-2

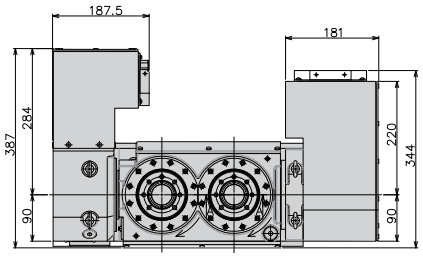
Table Model			TWM-100-2		TTNC-101-4		TWM-160-2		TWM-250-2	
Tilt Range			-17° ~ +107°		-110° ~ +110°		-30° ~ +110°		-30° ~ +110°	
Minimum table center distance			140		120		250/320		320/400	
Spindle outer diameter		mm	90h7		80h7		100		140	
Table diameter (optional)		mm	(135)		(115)		160/200		(250)	
Table height at 0° position (w/ face plate)		mm	220 (245)		275 (300)		250		325	
Center height at 90° position		mm	160		200		190		260	
Center bore	Nose Diameter (w/ face plate)	mm	55H7 (40H7)		50H7 (50H7)		55H7		80H7	
	Thru Diameter	mm	40		30		40		50	
Table T-slot width (w/ face plate)			(12H8)		(10H8)		-		-	
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			1/60	1/120	1/60	1/90	1/60	1/90	1/90	1/90
Maximum table speed		rpm	83.3	41.6	66.7	44.4	83.3	44.4	44.4	44.4
Inertia converted into motor shaft		x 10^{-3}kg·m^2	.13	.14	.52	1.08	.52	.50	.73	.44
Clamp system			Pneumatic	Pneumatic	Pneumatic	Hydraulic**	Pneumatic	Pneumatic	Pneumatic	Hydraulic**
Clamp torque @72psi [500 psi]		Nm (ft. lbs.)	200 [(271)]	500 [(368)]	80 [(59)]	[980] [(722)]	500 [(368)]	1,000 [(737)]	1,000 [(737)]	3,100 [(2,284)]
Indexing accuracy		arc sec.	±20	-	±30	-	±15	-	±10	-
Tilting accuracy		arc sec.	-	±22.5	-	±30	-	±30	-	±30
Net Weight		kg (lbs.)	110 (242)		370 (814)		250 (550)		550 (1,210)	
Allowable wheel torque - rotary		Nm (ft. lbs.)	93 (69)		176 (130)		-		-	
Allowable work inertia		kg·m^2	0.08		0.05		0.13		0.9	
Allowable work weight	0° tilt angle 	Kg (lbs)	35 (77)		25 (55)		40 (88)		100 (220)	
	0° ~ 90° tilt angle 	kg (lbs)	20 (44)		25 (55)		40 (88)		100 (220)	
Allowable work moment		Nm (ft. lbs.)	24 (17)		176 (129.7)		55.8 (115.6)		347.4 (255)	
Allowable load when table clamped		N (lbf)	1,960 (439)		1,960 (439)		10,820 (1,537)		14,400 (3,237)	
		Nm (ft. lbs.)	200 (271)		80 (59)		520 (57.5)		1,000 (737)	
		Nm (ft. lbs.)	520 (368)		980 (722)		1000 (722)		3,100 (2,284)	

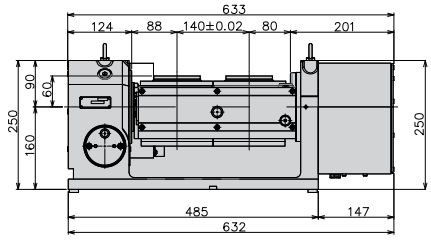
* Other motors & RPM available • ** Booster optional • Specifications subject to change without notice

Dimensions

Drawings not to scale • Dimensions = mm

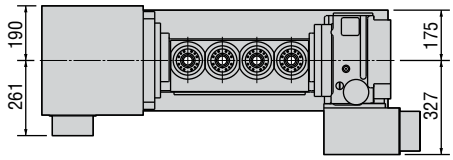
TWM-100-2

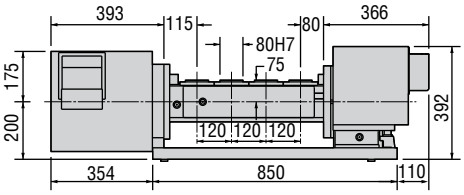




TTNC-101-4
5C Collet Option

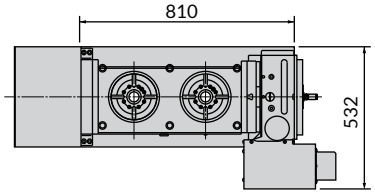
TTNC-101-4

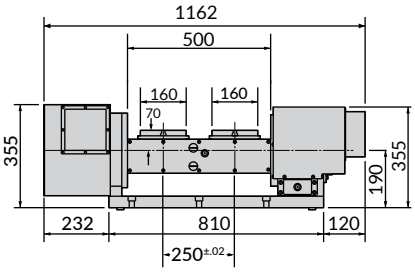




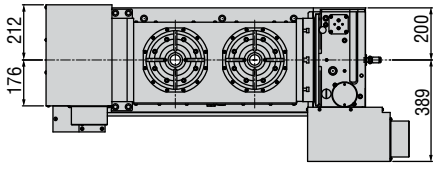
TWM-160-2 RJ
Rotary Joint Option

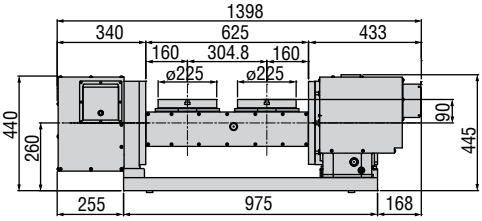
TWM-160-2





TWM-250-2



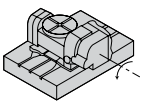


The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

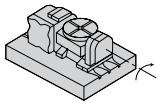
Options & Accessories

TPC NC Controller	p.62
Chucks	p.74
Tailstock	p.75
Support Spindle	p.77
Face Plate	p.77
Encoder / Scale	p.78
Pull Stud Device	p.79
Rotary Joint	p.79
Booster	p.80
PVC or Steel Cables	p.81

Layout a



Layout b



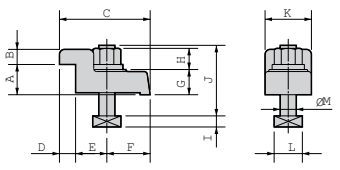
Clamping Block and Bolt

Dimensions = mm

	Type	Q'ty	Layout	T-Slot Width	A	B	C	D	E	F	G	H	I	J	K	L	M
TWM-100-2	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.)

Type I

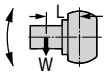
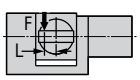


TN-450 / TWB-630, 1000 / TTNC- 1500

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

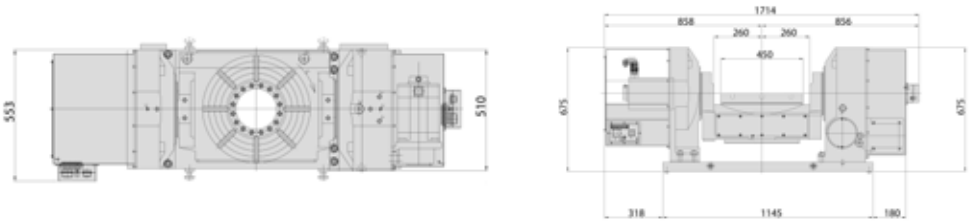
Table Model			TN-450		TWB-630		TWB-1000		TTNC-1500	
Tilt Range			-10° ~ +95°		-10° ~ -110°		-30° ~ -110°		-30° ~ +95°	
Table diameter		mm	450		630		1,000		1,500	
Table height at 0° position		mm	425		585		650		1,155	
Center height at 90° position		mm	325		450		650		1,055	
Center bore	Nose Diameter	mm	140H7		220H6		360H7		75H7	
	Thru Diameter	mm	140		180		310		-	
Table T-slot width			14H7		18H7		18H7		28H7	
Guide block width			18h7		18h7		18H7		-	
Servo motor (Fanuc)*			*Rotary*	*Tilt*	*Rotary*	*Tilt*	*Rotary*	*Tilt*	*Rotary*	*Tilt*
			Alpha 22i	Alpha 22i	Alpha 12i	Alpha 12i	Alpha 12i	Alpha 30i	Alpha 30i	Alpha 30i
Maximum motor speed		rpm	4,000	4,000	4,000	4,000	2,000	2,000	2,000	2,000
Speed reduction ratio			1/180	1/360	1/180	1/360	1/360	1/360	1/720	1/1,440
Maximum table speed		rpm	22.2	11.1	22.2	11.1	8.3	5.5	2.7	1.4
Inertia converted into motor shaft		x 10^{-3}kg·m^2	1.98	2.7	3.45	2.13	5.24	7.01	5.37	7.46
Clamp system**			Hydraulic @500psi	Hydraulic @500psi	Hydraulic @500psi	Hydraulic @500psi	Hydraulic @500psi	Hydraulic @500psi	Hydraulic @500psi	Hydraulic @500psi
Clamp torque		Nm (ft. lbs.)	3,700 (2,727)	7,400 (5,454)	7600 (5,,600)	13,100 (9,654)	16,000 (11,792)	32,000 (23,584)	12,000 (8,844)	12,500 x (2) (9,213) x (2)
Indexing accuracy		arc sec.	±7.5	-	±7.5	-	±7.5	±30	±10	-
Tilting accuracy		arc sec.	-	±30	-	±30	-	-	-	±22.5 (scale)
Net Weight		kg (lbs.)	780 (1,716)		1,800 (3,960)		6,000 (13,228)		12,000 (26,400)	
Allowable wheel torque - rotary		Nm (ft. lbs.)	1,666 (1,228)		5,601 (12,322)		-		21,560 (15,890)	
Allowable work inertia		kg·m^2	5.1		50		320		2,255	
Allowable work weight	0° tilt angle 	kg (lbs)	200 (440)		1,000 (2,200)		4,000 (8,800)		2,500 (5,500)	
	0° ~ 90° tilt angle 	kg (lbs)	150 (330)		500 (1,100)		2,000 (4,400)		1,500 (3,300)	
Allowable work moment		Nm (ft. lbs.)	294 (217)		2,000 (1,474)		11,792 (11.792)		7,840 (5,778)	
Allowable load when table clamped		N (lbf)	19,600 (4,390)		34,000 (7,616)		100,000 (22,397)		49,000 (10,976)	
		Nm (ft. lbs.)	980 (722)		7,600 (5,600)		16,000 (11,792)		12,000 (8,844)	
		Nm (ft. lbs.)	980 (722)		13,100 (9,654)		32,000 (23,584)		12,500 x (2) (9,213) x (2)	

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

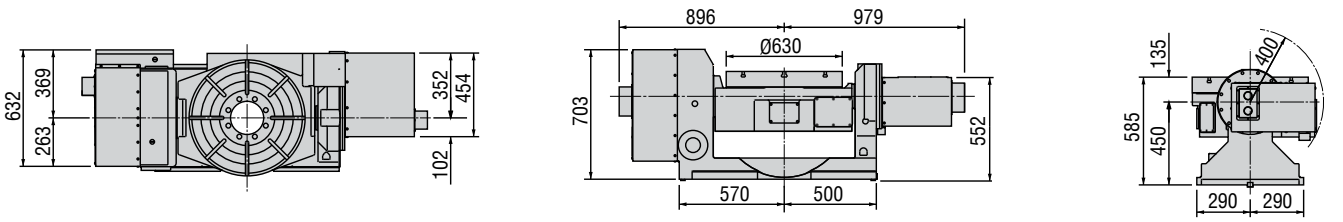
Dimensions

Drawings not to scale • Dimensions = mm

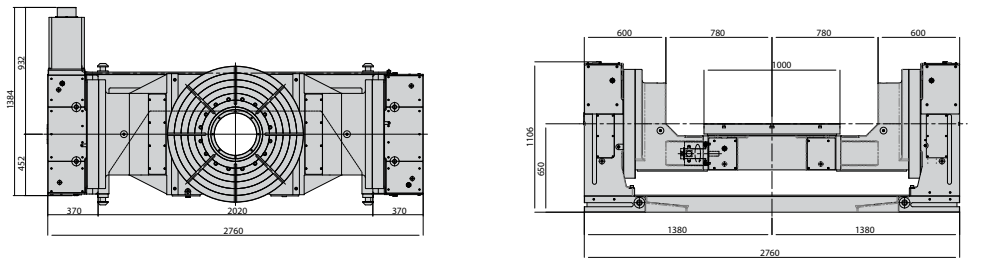
TN-450



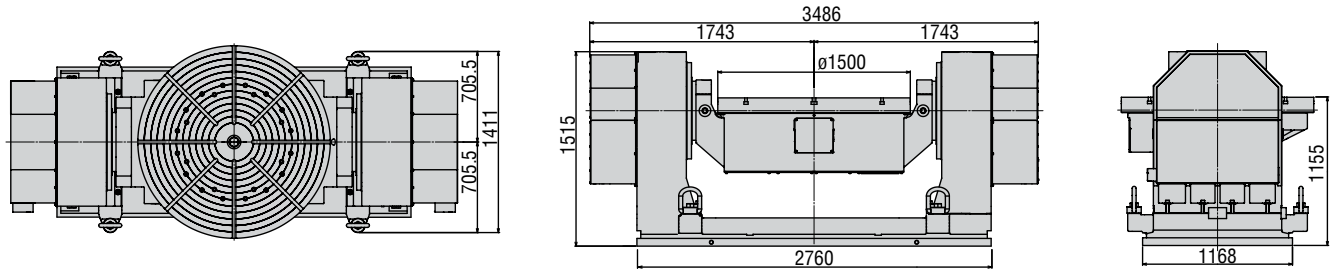
TWB-630



TWB-1000

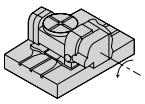


TTNC-1500

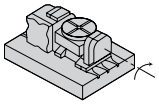


The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

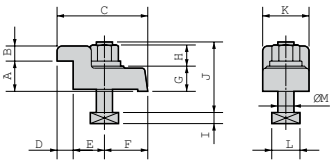
Layout a



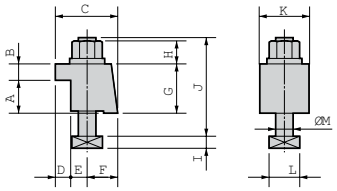
Layout b



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
TWB-630	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.)

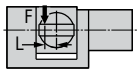
Options & Accessories

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

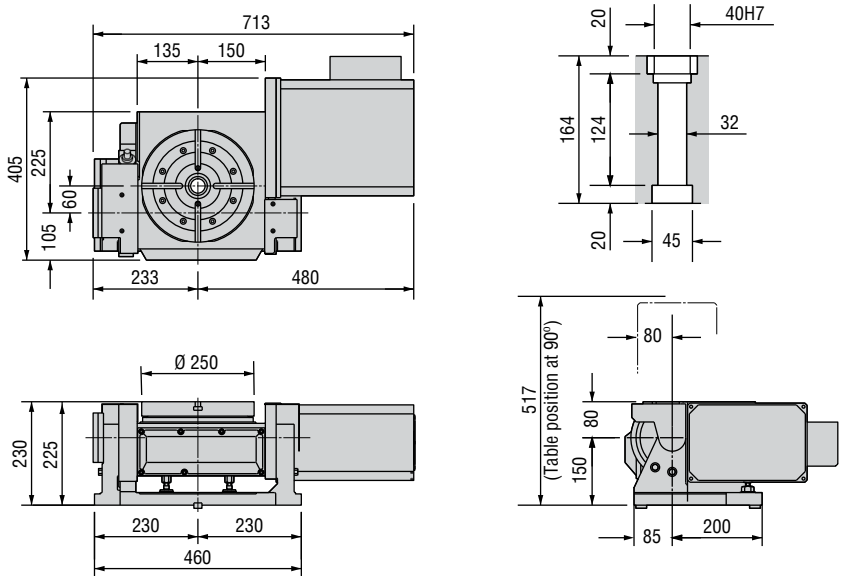
Table Model				THNC-251		THNC-301	
Tilt Range				0° ~ +93°			
Table diameter			mm	250		320	
Table height at 0° position			mm	230		265	
Center height at 90° position			mm	210		235	
Center bore	Nose Diameter		mm	40H7		40H7	
	Thru Diameter		mm	32		40	
Table T-slot width				12H7		14H7	
Guide block width				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·m²	.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·m²	.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

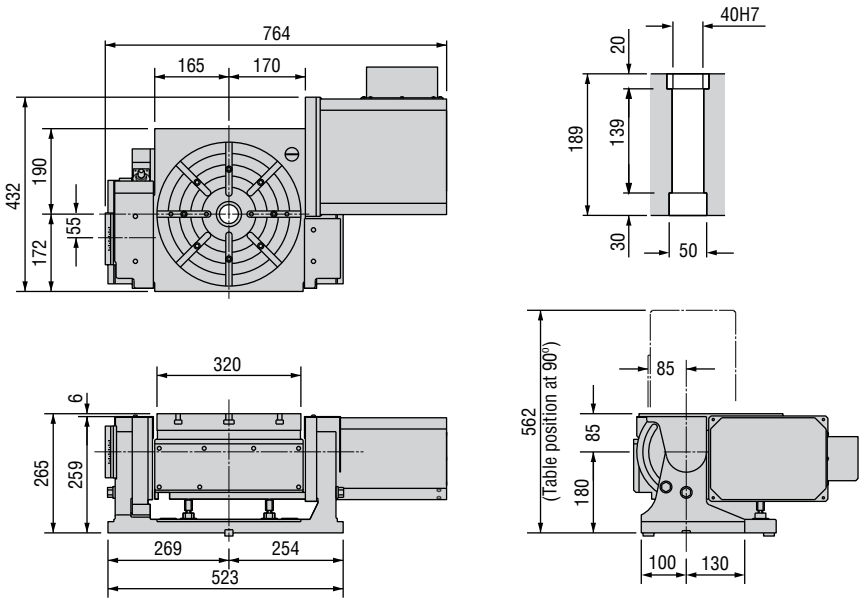
Drawings not to scale • Dimensions = mm

THNC-251



OPTIONAL TPC5 SERIES
NC Controller

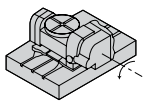
THNC-301



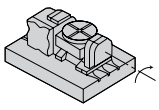
Options & Accessories

TPC NC Controller	p.62
Chucks	p.74
Tailstock	p.75
Support Spindle	p.77
Face Plate	p.77
Encoder / Scale	p.78
Pull Stud Device	p.79
Rotary Joint	p.79
Booster	p.80
PVC or Steel Cables	p.81

Layout a

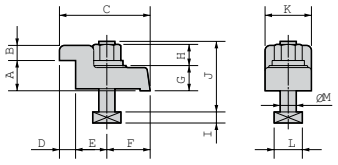


Layout b

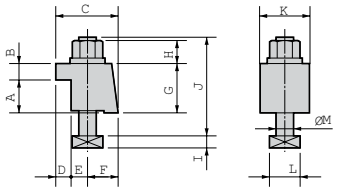


The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

Type I



Type II



Clamping Block and Bolt

Dimensions = mm

	Type	Q'ty	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.)

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

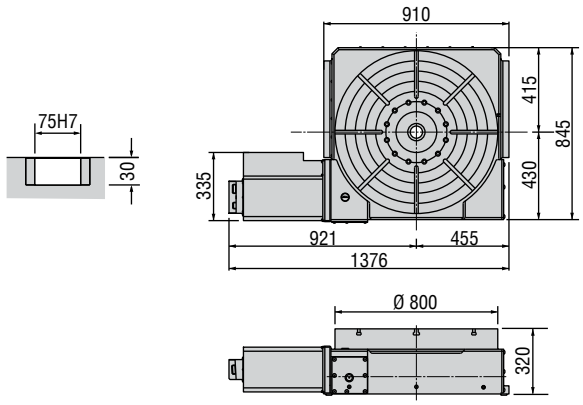
Table Model			RCH-800	RCH-1000	RCH-1250	RNC-1501	RNC-2001
Versions Available			L	L	L	L	L
Table diameter		mm	800	1,000	1,250	1,500	2,000
Table height		mm	320	330	410	400	620
Center bore	Nose Diameter	mm	60H7	75H7	75H7	75H7	225H7
Table T-slot width			18H7	22H7	22H7	28H7	28H7
Guide block width			22h7	-	-	-	-
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		x 10^{-3}kg·m²	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		kg·m²	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

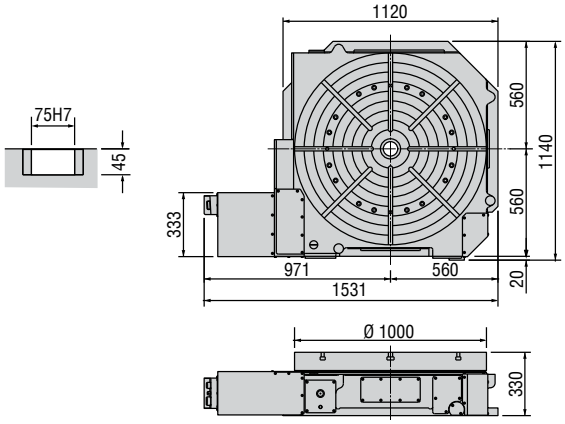
Dimensions

Drawings not to scale • Dimensions = mm

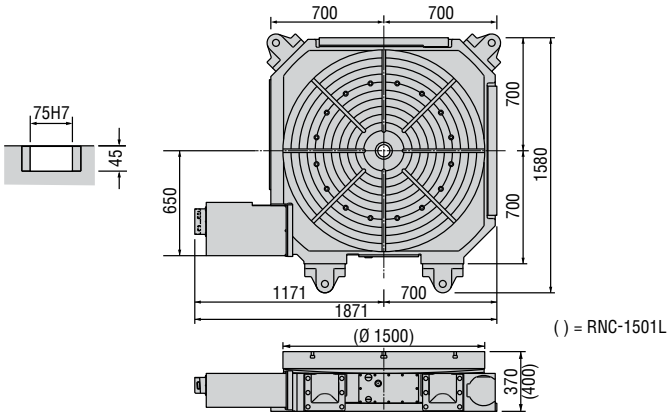
RCH-800L



RCH-1000L



RNC-1501L



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

RNC-2001L

OPTIONAL TPC5 SERIES NC Controller

Options & Accessories

TPC NC Controller	p.62
Chucks	p.74
Tailstock	p.75
Support Spindle	p.77
Face Plate	p.77
Encoder / Scale	p.78
Pull Stud Device	p.79
Rotary Joint	p.79
Booster	p.80
PVC or Steel Cables	p.81

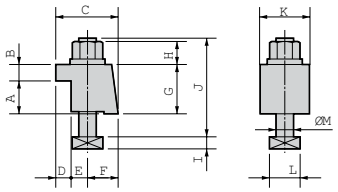
Clamping Block and Bolt

Dimensions = mm

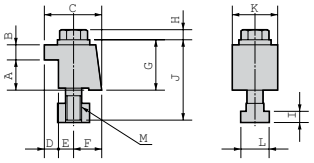
	Type	Q'ty	T-Slot Width	A	B	C	D	E	F	G	H	I	J	K	L	M
RCH-800L	II	4	22	40	20	85	24	20	41	60	27	13	115	80	32	20
RCH-1000L	II	4~8	22	40	20	85	24	20	41	60	27	13	115	80	32	20
RCH-1250L	II	4~8	22	50	20	74	20	18	36	70	27	13	130	70	32	20
RNC-1501L	IV	4~8	28	50	20	74	20	18	36	77	15	17.5	120	70	41	24
RNC-2001L	IV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

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

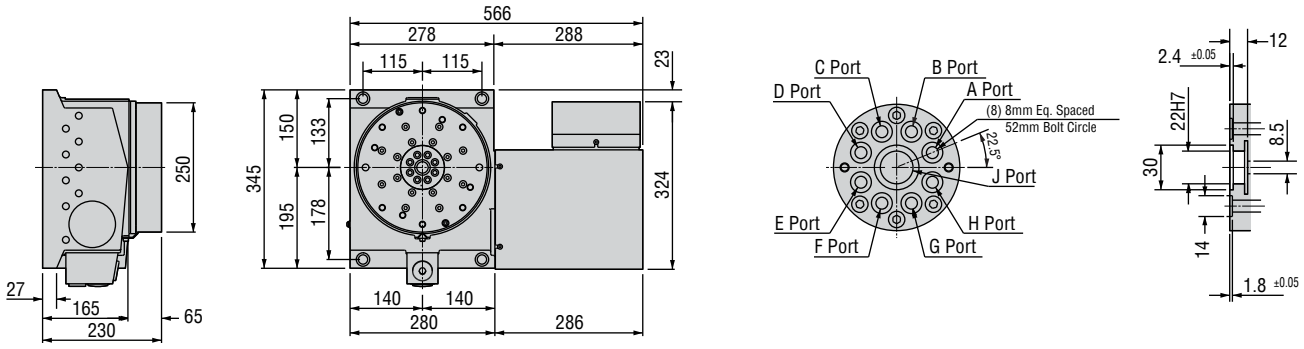
Table Model			RC-250	RC-300	RC-400	RC-500
Table diameter		mm	250	320	400	500
Table height		mm	230	250	260	270
Servo motor (Fanuc)*			Alpha 8i	Alpha 12i	Alpha 22i	Alpha 22i
Maximum motor speed		rpm	4,000	4,000	3,000	3,000
Speed reduction ratio			1/36	1/45	1/45	1/90
Maximum table speed		rpm	111.1	88.8	66.7	33.3
Inertia converted into motor shaft		x 10^{-3}kg.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		kg.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

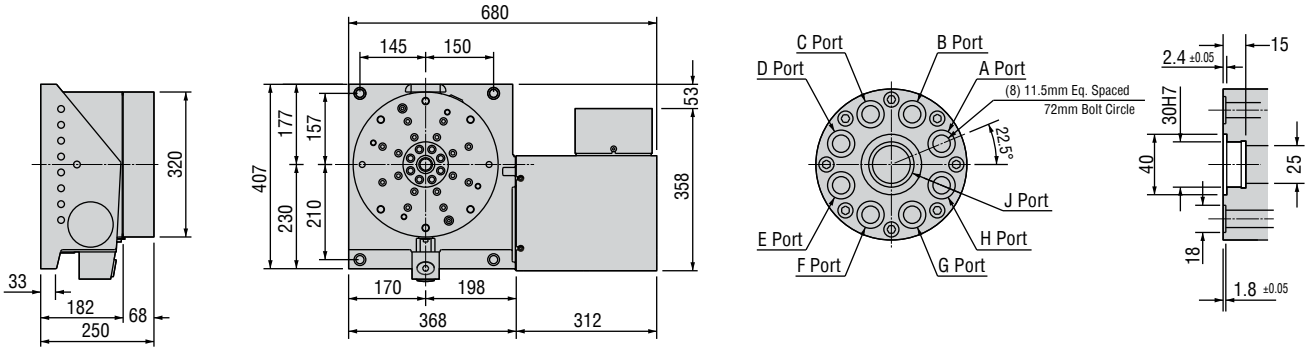
Dimensions

Drawings not to scale • Dimensions = mm

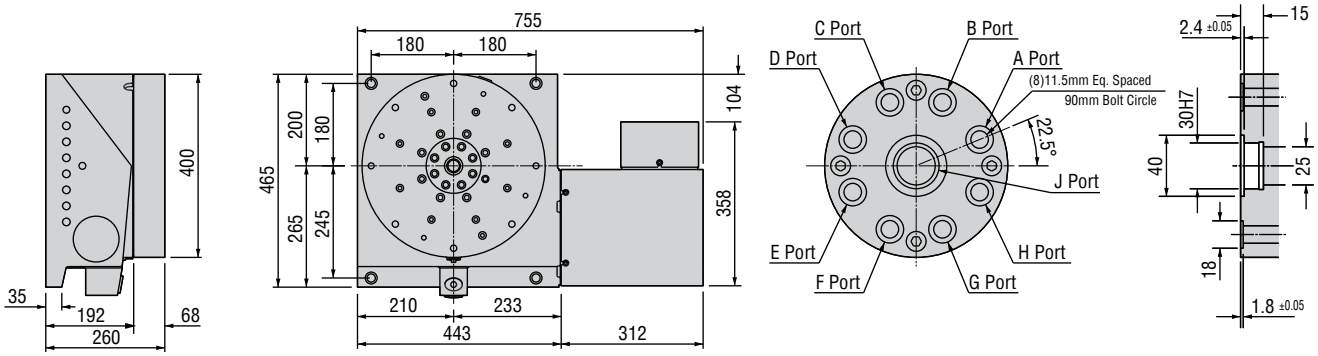
RC-250



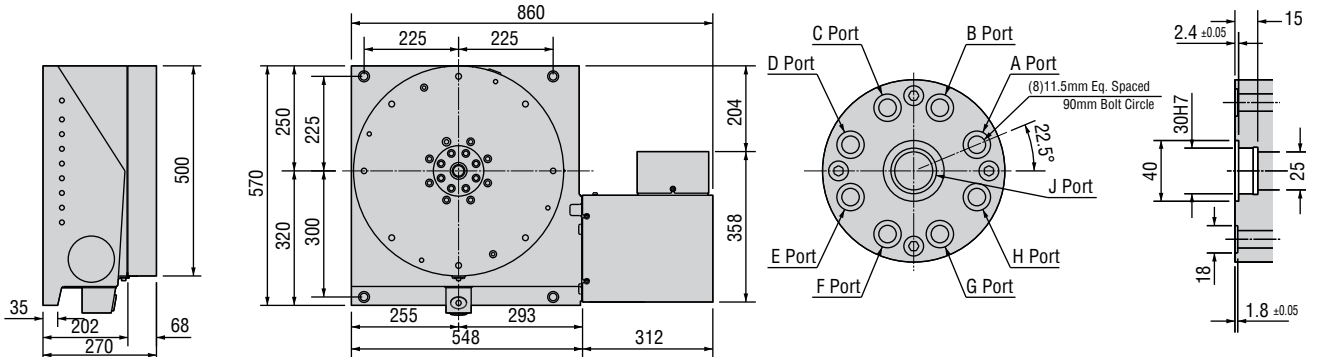
RC-300



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

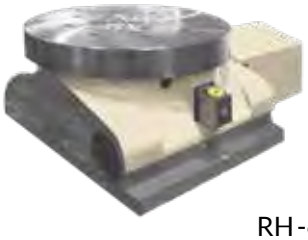
RC-Series rotary tables are designed for integration into a specialized machine tool or transfer line. RC-Series tables feature extra rigid castings for heavy duty applications. Standard equipment for RC-Series tables includes a built-in (8) port hydraulic/pneumatic rotary joint unit and (1) coolant 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 resistence. A (10) port rotary joint is a typical RUA-Series option.

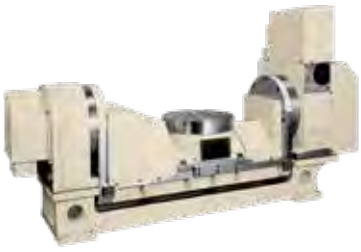
RUA-320

TSUA-170, 210, 255, 310

MACHINE TOOL / TRANSFER LINE SUPPORT SPINDLES

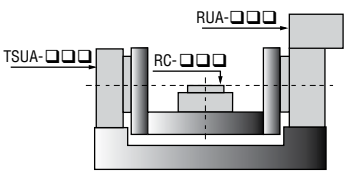
TSUA-Series support spindles are used in conjunction with RUA-Series rotary tables to create a tilting fixture surface. Options include an (8) port rotary joint and a balancer to support an eccentric load. A powerful dual disc clamp mechanism is incorporated.

TSUA-170

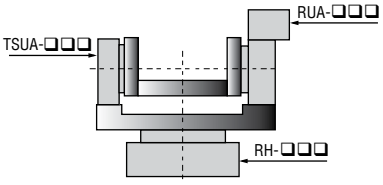


Integrated Rotary Tables

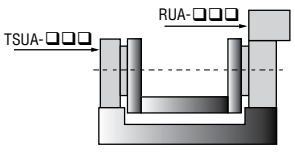
Tsudakoma integrated rotary tables are designed to be incorporated into machine tools to create a “Flexible Transfer Line” for machining automobile parts. The overall rigidity and clamp torque of these rotary tables and support spindles allows smaller models to be selected resulting in a more compact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



Turn & Tilt System



Tilt & Turn System



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

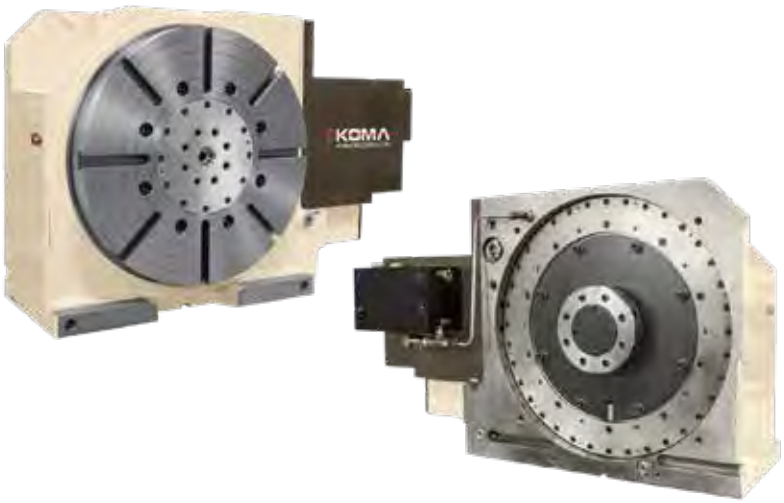
RWB-400 & TSH-210

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

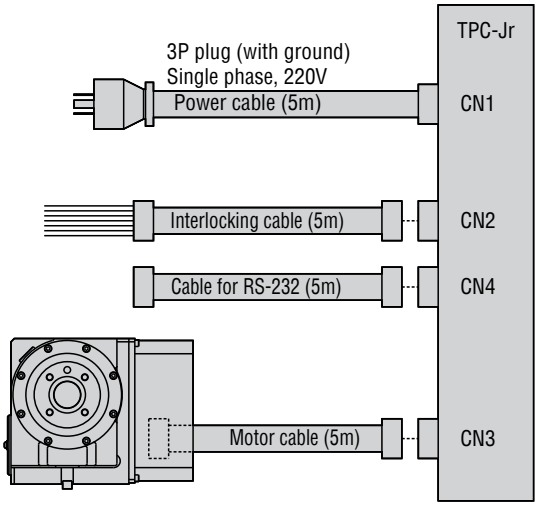
The TPC-Jr is an "M" code triggered single axis NC controller package which includes a servomotor, amplifier, and cables. The TPC-Jr has a Remote Mode M+ feature which allows the downloading of program commands from a Fanuc, Mitsubishi, Yasnac, or Okuma machine tool control via an RS-232 port.

TPC MODEL SELECTION

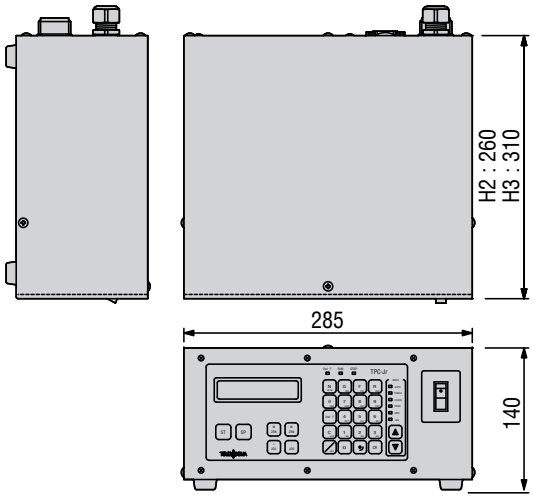
NC Rotary Table		TPC-Jr Model	
		K2	K3
RN-100		●	
RWA-160		●	
RWA-200			●
RWA-250			●
RWA-320			●
RN-100,2/3/4			●
RN-150R,2			●
TWA-100	Rotary & Tilt	●	
TWA-130	Rotary & Tilt	●	
TWA-160	Rotary & Tilt	●	
TWA-200	Rotary & Tilt		●
TBS-130		●	
TBS-160		●(R)	●(T)

**Shown above with optional MPG (Manual Pulse Generator)*

TPC CABLES



TPC DIMENSIONS



Subject to Change Without Notice

TPC5 SERIES NC CONTROLLERS

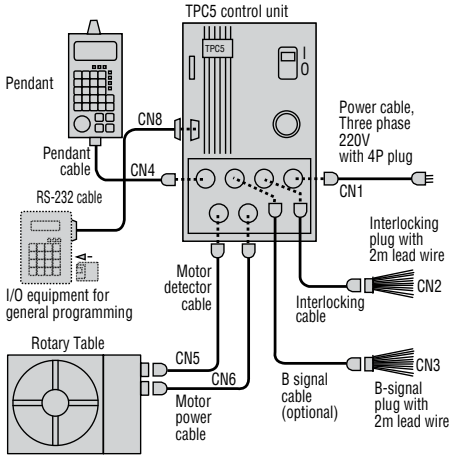
SINGLE AXIS NC CONTROLLER

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.

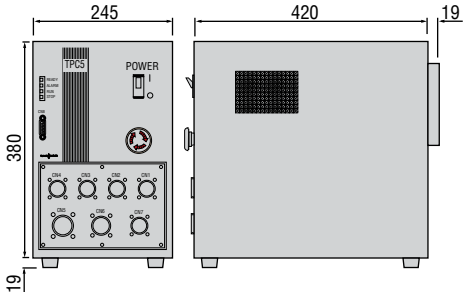
TPC5 MODEL SELECTION

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

**Shown above with optional MPG (Manual Pulse Generator)*

OPERATION MODE

- AUTO : Automatic operation by an M code signal from the machining center.
- SINGLE : Single operation of TPC-Jr. By pressing ST, the indexing is done one time.
- CHECK : Block number call, program check and self diagnosis.
- PROG : Program input edit.
- MDI : One block program carrying out. Useful when setting up workpiece.
- JOG : Manual feed, step feed

PROGRAM EDIT KEYS

2nd•F + N W No **Workpiece No. (Program No.)** 0000 ~ 9999 100 programs registrable

N W No **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**

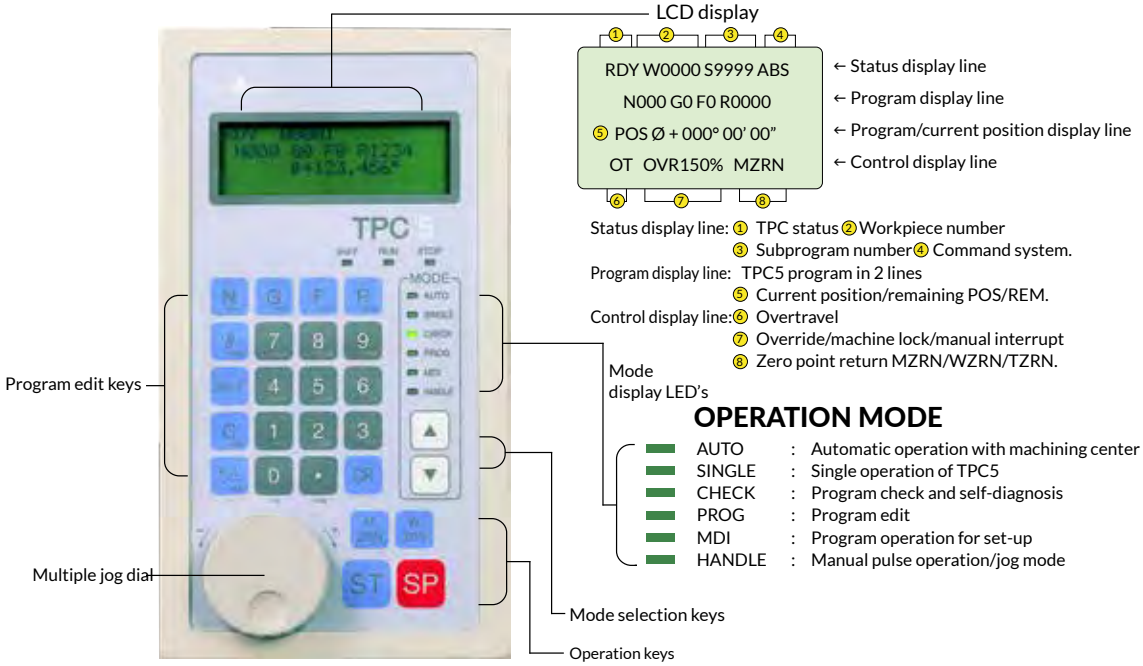
θ DGN **Movement amount command** (angle value, divisions, or repetition #)

G code		R code		q 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 l OFF/ON	Dwell time	000 ~ 999 (x10msec)
		005/006	Indexing group control OFF/ON	Not required	
		007/008	Directional positioning OFF/ON		
		009/010	Completion signal control command OFF/ON	Completion signal selection	
		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



OPERATION MODE

AUTO	:	Automatic operation with machining center
SINGLE	:	Single operation of TPC5
CHECK	:	Program check and self-diagnosis
PROG	:	Program edit
MDI	:	Program operation for set-up
HANDLE	:	Manual pulse operation/jog mode

PROGRAM EDIT KEYS

2nd•F + N W No **Workpiece No. (Program No.)** 0000 ~ 9999 100 programs registrable

N W No **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 #)

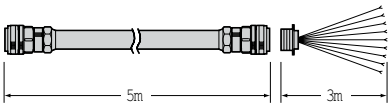
G code		R code		q code	
No.	Command	No.	Command	Command	Setting
G0	Direct angle command	0001~9999	Number of repetitions (INC)	Command angle	±000.000° ~ ±999.999°
		0000	(ABS)	Command angle	±000.000° ~ ±360.000°
G1	Direct indexing number command	0001~9999	Number of repetitions	# of divisions for 360°	±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		

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 1st 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 2nd Zero Setting		Enables the 2nd 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	3ø200/220V±10% 50/60Hz
		Model / Pwr Capacity / Fuse Rating	Model / Pwr Capacity / Fuse Rating
		Jr G2 / 1.2KVA / 8A	TPC5-SR6 / 2.3KVA / 10A
		Jr G3 / 2.2KVA / 12A	TPC5-SR12 / 4.3KVA / 15A
			TPC5-SR30 / 5.9KVA / 20A
Environmental Conditions		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)
		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**

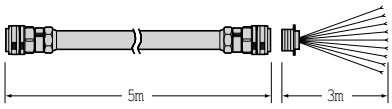


Required for the following functions:

- 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**

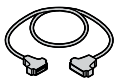


Required for the following functions:

- 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 **TPC5** **RS-232 Cable**



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.

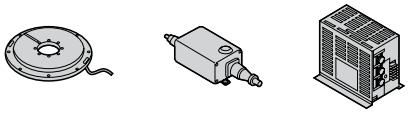
- RS-232 cable (Standard length: 5m)
- RS-422 cable (Standard length: 5m)

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

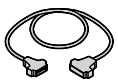
TPC5 **High Resolution Capability MP Scale Type**



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 **TPC5** **"Remote Mode" Specification**



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

- RS-232 cable

TPC-Jr **TPC5** **"Remote Mode + M" Specification**

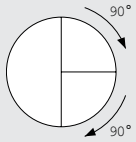
A function to unify the program to start the rotary table by M-signal, by feeding a command for the indexing angle from the RS-232 port at the NC controller of the machining center.

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

- RS-232 cable

TPC MACHINING PROGRAM EXAMPLES

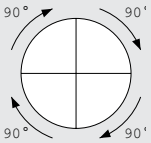
Direct angle command: G0



N W No 000 G PRG F POS R REM θ DGN 2 90.00 CR — Positioning at 90° twice
(F POS: Quick; R REM: Repetition #; θ DGN: Indexing angle/time)

N W No 001 G PRG 7 θ DGN 000 CR — Return to N W No 000 at the program end
(G PRG: End of program)

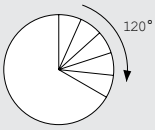
Direct indexing number command: G1 (even indexing)



N W No 000 G PRG F POS R REM θ DGN 4 0000 CR — Dividing 360° by 4, four times
(θ DGN: Dividing 360° by 4)

N W No 001 G PRG 7 θ DGN 000 CR — Return to N W No 000 at the program end

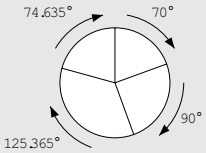
Arc-indexing number command: G2 (even indexing by an arbitrarily-set angle)



N W No 000 G PRG F POS R REM θ DGN 5 120.0 CR — Dividing 120° by 5, five times
(R REM: Division #; θ DGN: Arc-angle for dividing)

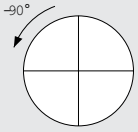
N W No 001 G PRG 7 θ DGN 000 CR — Return to N W No 000 at the program end

Uneven indexing



N W No 000 G PRG F POS R REM θ DGN 1 70.00 CR — Positioning at 70° once
N W No 001 G PRG F POS R REM θ DGN 1 90.00 CR — Positioning at 90° once
N W No 002 G PRG F POS R REM θ DGN 1 125.3 CR — Positioning at 125.365° once
N W No 003 G PRG F POS R REM θ DGN 1 74.63 CR — Positioning at 74.635° once
N W No 004 G PRG 7 θ DGN 000 CR — Return to N W No 000 at the program end

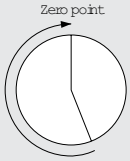
(-) direction indexing



N W No 000 G PRG F POS R REM θ DGN 1 -90.0 CR — Positioning at -90° once
(θ DGN: Reverse)

N W No 001 G PRG 7 θ DGN 000 CR — Return to N W No 000 at the program end

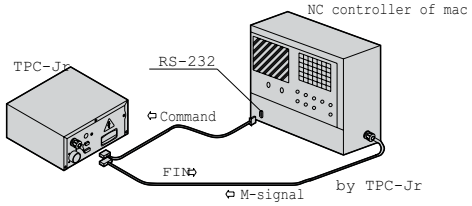
Zero point return command: G4

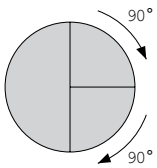


N W No 000 G PRG 4 R REM 000 — Return to 1st zero position
(G PRG: Zero return; R REM: To 1st zero position)

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

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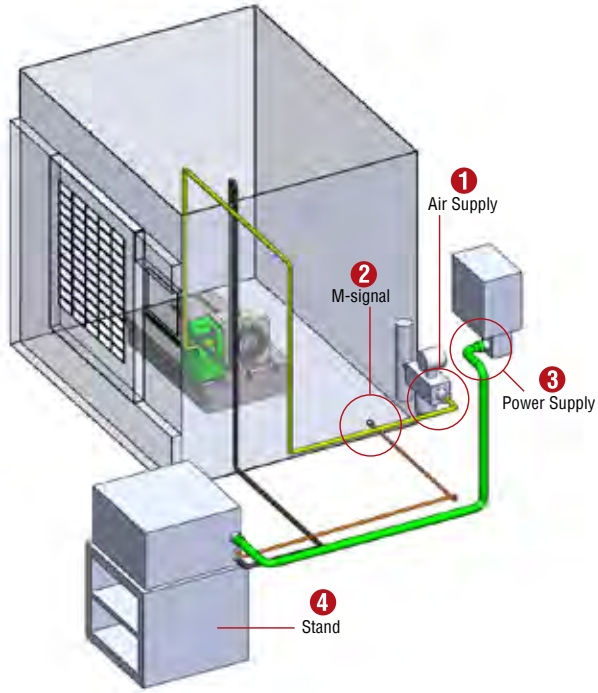
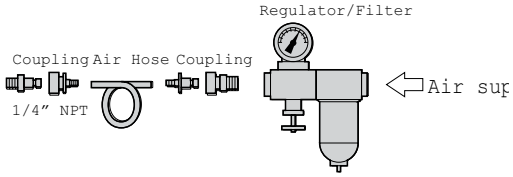
INSTALLATION OF TPC CONTROLLER



❶ Air Supply

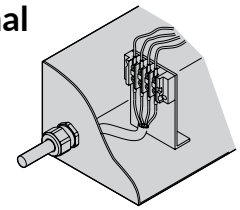


A pneumatic or air/hydraulic clamp system is available for an NC rotary table mounted with the TPC5 or TPC-Jr controller, and air supply is required.

The following are to be provided by customers.

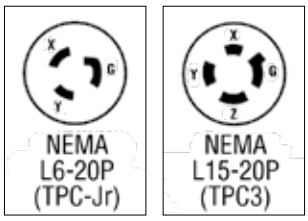
- Air filter and regulator (Air pressure: 72 psi)
- Air hose
- Joint coupler (1/4" NPT fitting for the table)

❷ 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.

❸ 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.

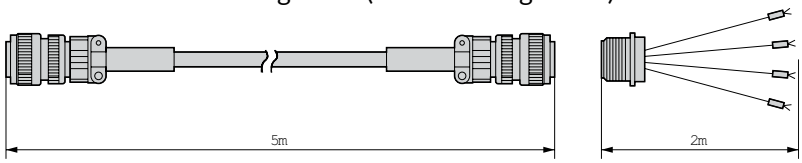
❹ Stand

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.

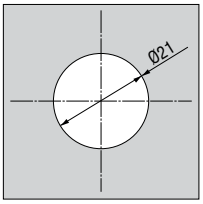
TPC CONTROLLERS TO INTERLOCK WITH MACHINING TOOLS

TPC-Jr

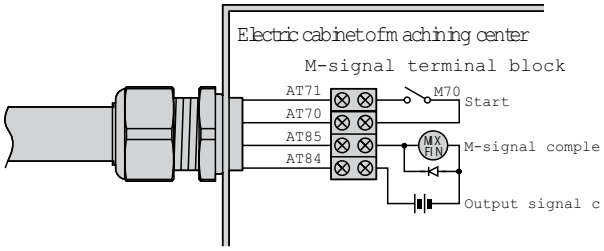
Interlocking cable (Standard length: 5m)



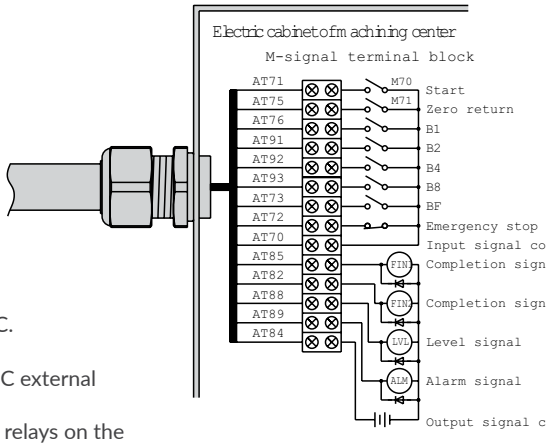
Connector hole diameter
for machining center cabinet



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



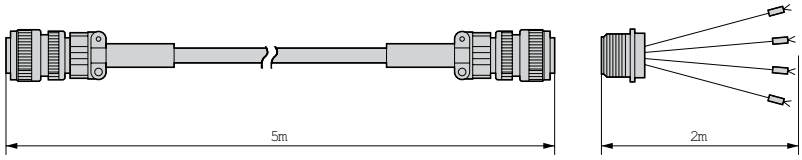
All features cable set-up: when the signals available on an interlocking cable are used.



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.

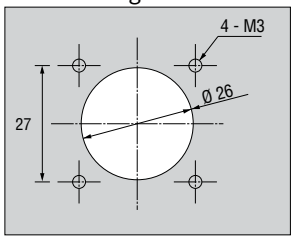
TPC5

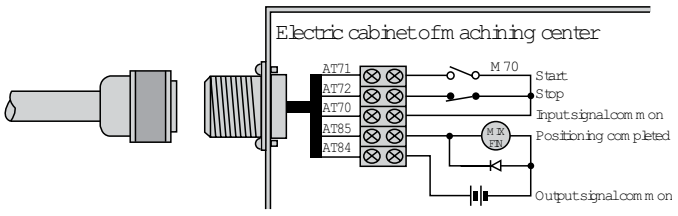
Interlocking cable (Standard length: 5m)



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

Connector hole diameter
for machining center cabinet





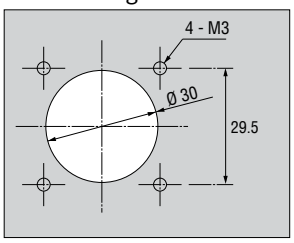
Subject to Change Without Notice

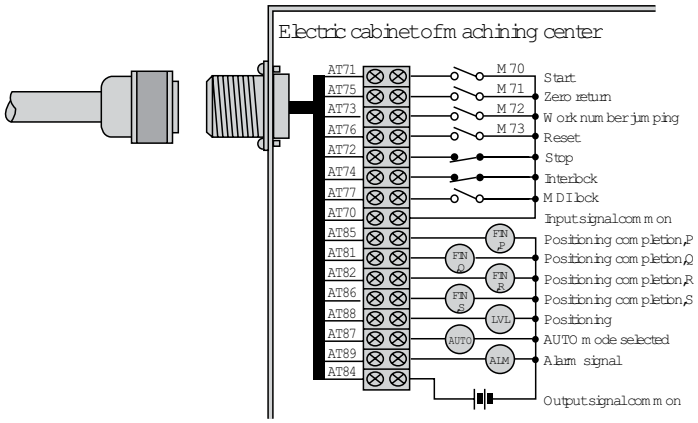
TPC CONTROLLERS TO INTERLOCK WITH MACHINING TOOLS (cont.)

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.

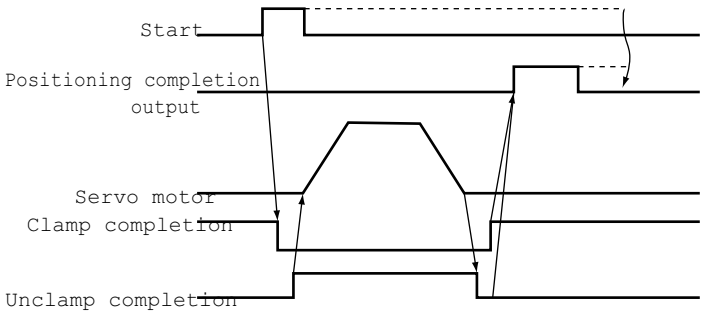
Connector hole diameter
for machining center cabinet





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

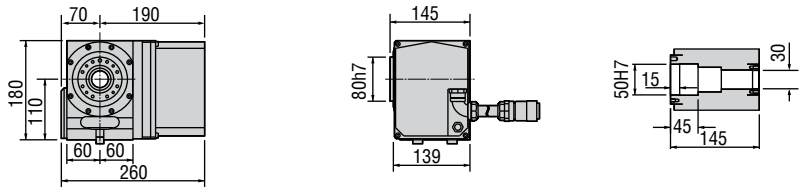
Table Model	RN-100	RWA-160	RWA-200	RWA-250	RWA-320	RN-100,2	RN-100,3	RN-100,4
TPC Model	TPC-Jr K2	TPC-Jr K2	TPC-Jr K3	TPC-Jr K3	TPC-Jr K3	TPC-Jr K3	TPC-Jr K3	TPC-Jr K3
Speed reduction ratio	1/36	1/72	1/72	1/120	1/180	1/36	1/60	1/60
Table/Motor RPM	66.7/2,400	41.7/3,000	41.7/3,000	25/3,000	16.7/3,000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

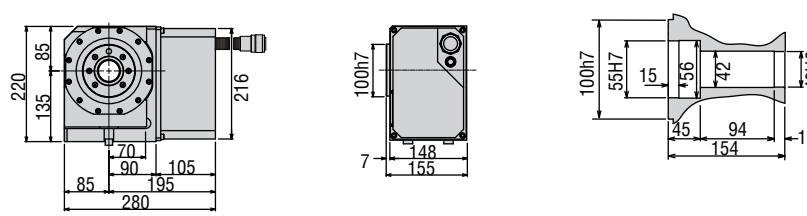
Dimensions

Drawings not to scale • Dimensions = mm

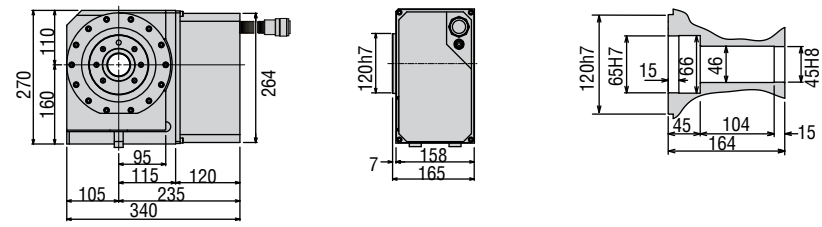
RN-100R/TPC-Jr K2



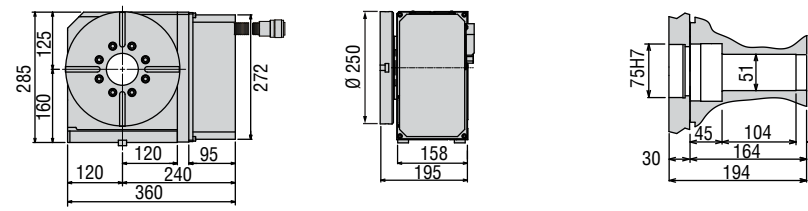
RWA-160R/TPC-Jr K2



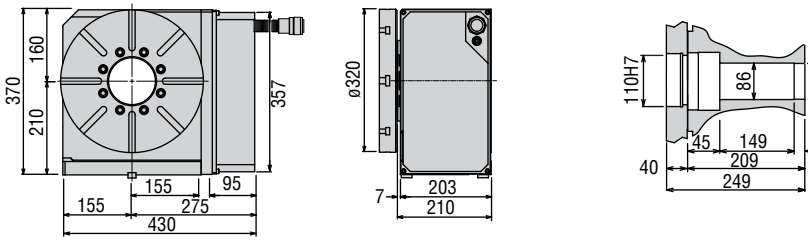
RWA-200R/TPC-Jr K3



RWA-250R/TPC-Jr K3



RWA-320R/TPC-Jr K3



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TWA-100,320 | TWA-130, 160, 200 TPC CONTROL SPECIFICATIONS

TPC MODEL / TABLE & MOTOR SPEED

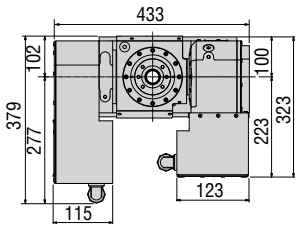
Table Model	TWA-100		TWA-130		TWA-160		TWA-200		TN-320	
Table axis	Rotary	Tilt	Rotary	Tilt	Rotary	Tilt	Rotary	Tilt	Rotary	Tilt
TPC model	TPC-Jr K2		TPC-Jr K2		TPC-Jr K2		TPC-Jr K3		TPC5 SR6	
Speed reduction ratio	1/60	1/120	1/60	1/120	1/72	1/120	1/45	1/90	1/120	1/240
Table rpm (motor @2,000)	33.3	16.7	33.3	16.7	27.8	16.7	44.4	27.8	16.7	8.3

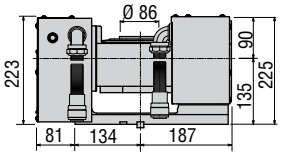
Complete table specifications on page 48 • Contact KOMA Precision for TPC use with continuous cutting or eccentric load applications.

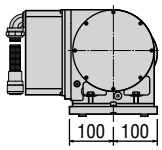
Dimensions

Drawings not to scale • Dimensions = mm

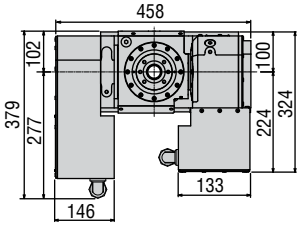
TWA-100/TPC-Jr K2

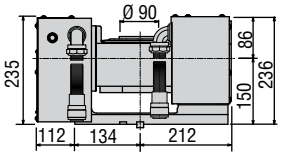


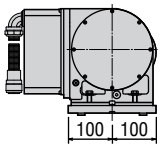




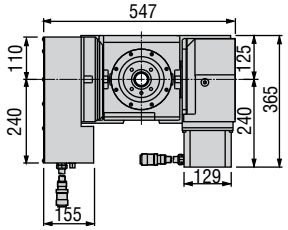
TWA-130/TPC-Jr K2

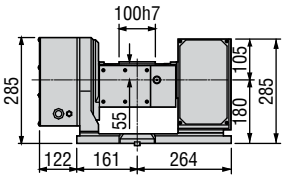


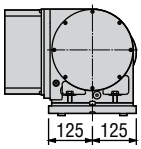




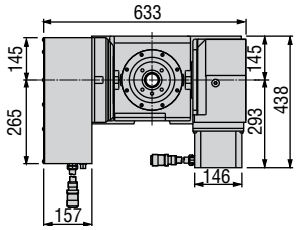
TWA-160/TPC-Jr K2

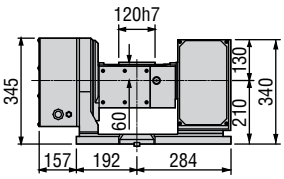


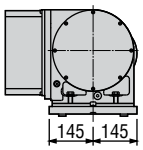




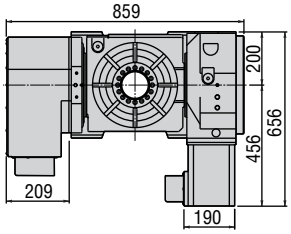
TWA-200/TPC-Jr K3

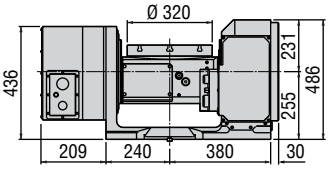


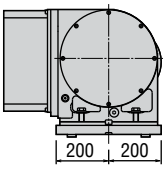




TN-320/TPC5 SR6

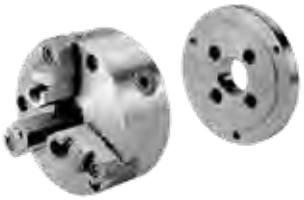


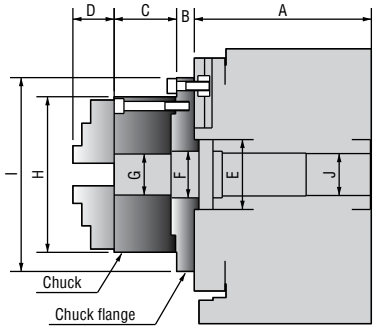




CHUCKS

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

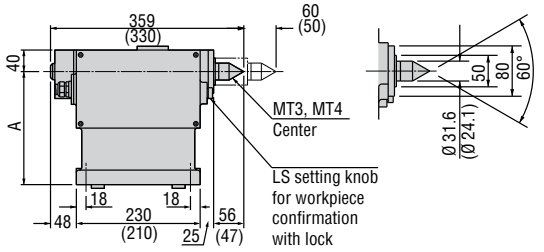
Rotary Table Model	Tailstock Model (Number = Center Height)			Support Spindle Model (Number = Center Height)		
	Manual (M)	Hydraulic (H)	Pneumatic (P)	No Clamping	Pneumatic (P)	Hydraulic (H)
						
RN-100	TL-110M	-	-	-	-	-
RWE-160, RWA-160, RWE-160 TPC	TL-135M	TLH-135	TLP-135	TS-135	TS-135P	-
	TTJ-135M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

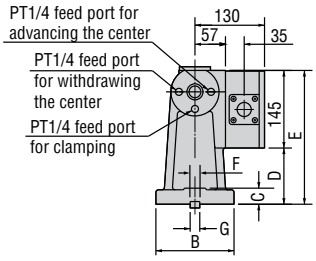
*All tailstocks & support spindles can be mounted on risers to match the required table center height.

HYDRAULIC TAILSTOCK DIMENSIONS

▶ **TLH -** ☐☐☐

TLH-160



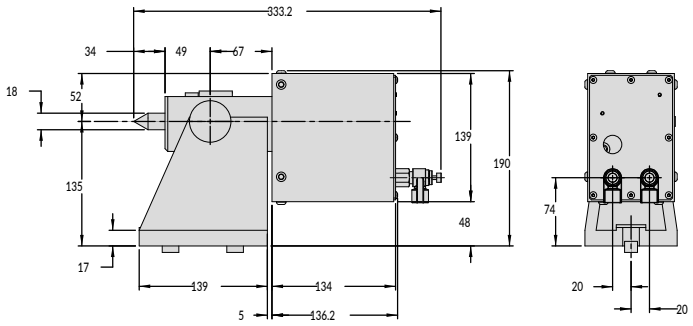


Tailstock Model	A	B	C	D	E	F	Carbide center	Hydraulic pressure PSI	Center thrust force N (lbf.)	Clamp torque N (lbf.)	Weight kg (lbs.)
TLH-135	135	110	25	30	175	19	MT3	218 ~ 986	1,666 (373)	2,450 (549)	28 (62)
TLH-160	160	130	30	55	200		MT4		2,352 (527)		33 (73)
TLH-210	210	146		105	250	23					36 (79)
TLH-255	255	170	35	150	295						40 (88)

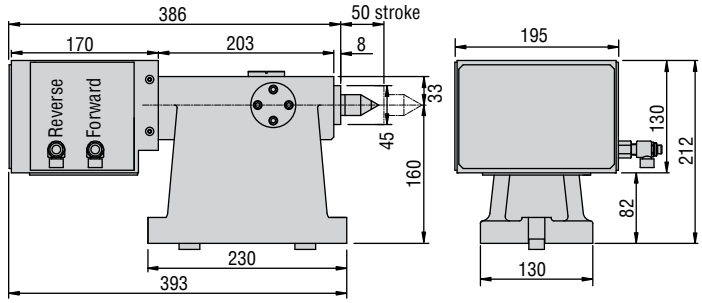
The above table shows the center thrust force and clamp torque when hydraulic pressure is 500 PSI.

PNEUMATIC TAILSTOCK DIMENSIONS

▶ **TLP-135**



▶ **TLP-160**

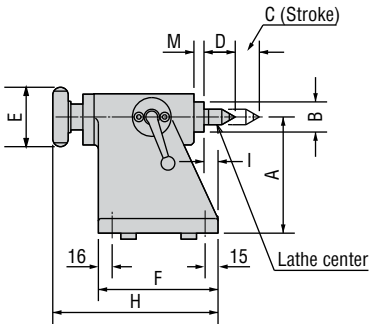


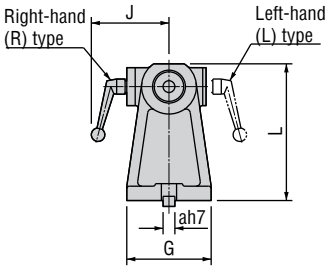
Tailstock Model	Stroke	Morse Taper	Forward thrust force @72 psi	Reverse thrust force @72 psi
TLP-135	30mm	MT2	1,557 N (349 lbf)	1,400 N (314 lbf)
TLP-160	50mm	MT3		

MANUAL TAILSTOCK DIMENSIONS

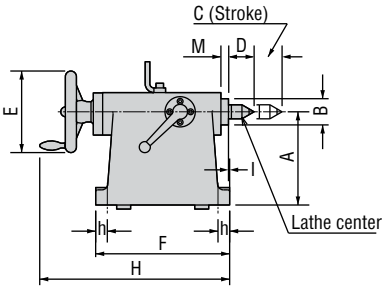
Tailstock Model	Morse taper	A Center height	B Center dia.	C Stroke	D Lathe center	E Handle dia.	F x G Base Dimension	H	I	J	K	L	M	a	b	c	d	e	g	h	Weight kg (lbs.)
TL-110M	MT2	110	35	28	36	69	139 x 100	192	16	92	-	137	12	14	12	55	8	23	20	-	8 (18)
TL-135M	MT2	135	35	28	36		139 x 100					162									9 (20)
TL-160M	MT3	160	45	48	44	140	230 x 130	326	2	129	53	193	13	18	16	75	11	28	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		270	8			80			35		30 (66)
TL-255M	MT4	255					270 x 170					290									38 (84)
TL-280M	MT4	280																			
TL-310M	MT4	310	60			180	315 x 220	417	15	154	65	350	10			85			40	20	63 (139)
TL-350M	MT4	350																			
TL-400M	MT4	400					315 x 240					440									76 (167)
TL-530M	MT4	530	80	68		225	410 x 290	532	30	164		590	5	22	18	90		32			138 (304)

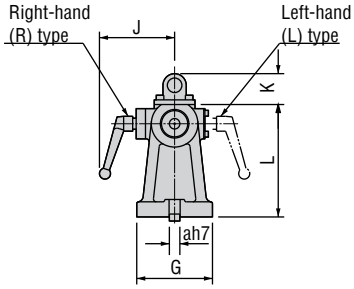
TL-110M/135M





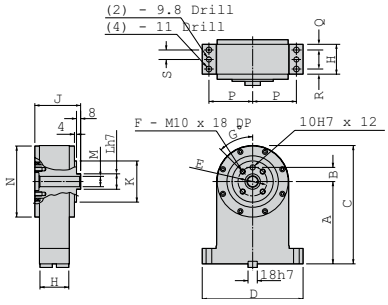
TL - ☐☐☐ M





SUPPORT SPINDLES

TS - ☐☐☐ (No clamping)



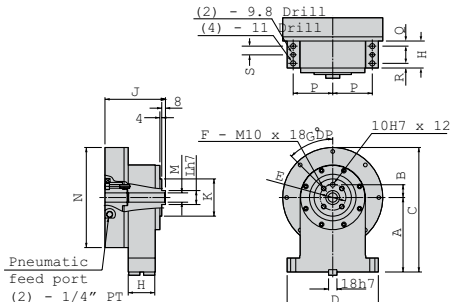

TS-135


TS-135 + RWA-160

Unit: mm

Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	Net Weight kg (lbs.)
TS-135	135	27.5	205	196	55	4	45	58	89	80	30	20	138	85	11	10	18.5	13 (29)
TS-160	160	27.5	230	196	55	4	45	58	89	80	30	20	138	85	11	10	18.5	15 (33)
TS-210	210	37.5	295	226	75	6	30	67	101	100	50	40	168	100	11	11	22.5	18 (40)

TS - ☐☐☐ P (Pneumatic clamping)



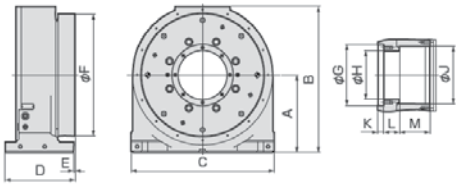

TS-160P


TS-210P + RWA-320R,B

Unit: mm

Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	Clamp torque Nm (ft. lbs) @ 72 PSI	Net Weight kg (lbs.)
TS-135P	135	27.5	218.5	196	55	4	45	58	130	80	30	20	167	85	11	10	18.5	156.9 (115.6)	20 (44)
TS-160P	160	27.5	267.5	196	55	4	45	58	130	80	30	20	215	85	11	10	18.5	383.7 (282.8)	27 (59)
TS-210P	210	37.5	337.5	226	75	6	30	67	141	100	50	40	255	100	11	11	22.5	779.1 (574.2)	45 (99)

SSB - ☐☐☐ (Hydraulic clamping)




SSB-160


SSB-210 + RWB-320

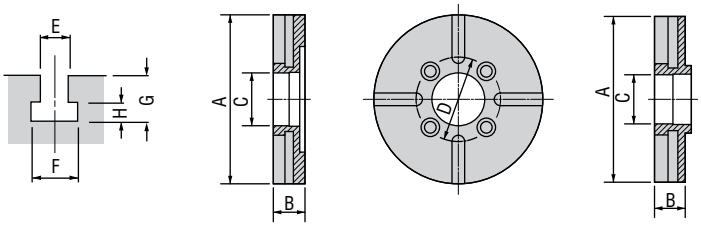
Unit: mm

Model	A	B	C	D	E	F	G	H	J	K	L	M	Clamp torque Nm (ft. lbs) @ 500 PSI	Net Weight kg (lbs.)
SSB-160	160	303	290	175	5	250	105H7	80H7	95H8	15	42	66	2,000 (1,475)	60 (132)
SSB-210	210	396	380	210	5	320	150H7	120H7	145H8	15	50	90	4,700 (3,467)	120 (265)
SSB-255	255	480	470	230	5	400	200H7	160H7	190H8	20	52	100	8,000 (5,900)	185 (408)
SSB-310	310	560	470	230	5	500	200H7	160H7	190H8	20	52	100	8,000 (5,900)	230 (507)

FACE PLATES

Unit: mm

Model	A	B	C	D	E	F	G	H
RN-100	135	30	50H7	-	10H8 $^{+2}_{-0}$	16	17 $^{+1}_{-0}$	7
TWM-100, TWA-100, TWA-130	135	25	40H7	70	12H8	19	19 $^{+1}_{-0}$	8
RWE-160, RWA-160, RWE-160 TPC, TWA-160	160	30	50H7	80	12H8 $^{+2}_{-0}$			
RWE-160, RWA-160, RWE-160 TPC, TWA-160	200	30	50H7	80	12H8			
RWE-200, RWA-200, RWE-200 TPC, TWA-200	200	35	60H7	90	12H8			
RWE-200, RWA-200, RWE-200 TPC, TWA-200	250	35	60H7	90	12H8			



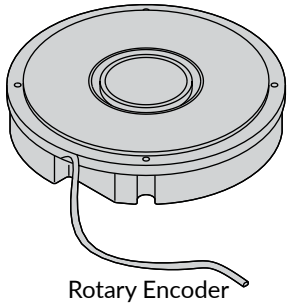
HIGH RESOLUTION ENCODERS & SCALES

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

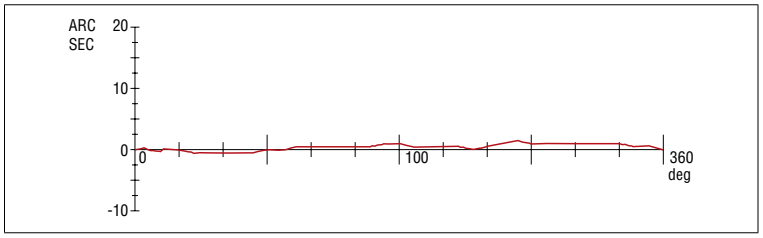
▶ "RWB - ☐☐☐ R, ☐☐ "

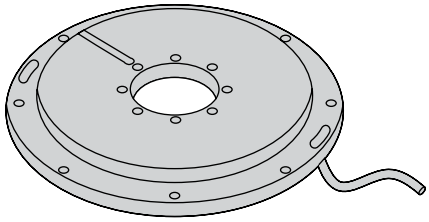
- **RE** (with Rotary Encoder)
- **RI** (with MP Scale)



Rotary Encoder

Example of indexing accuracy measurement with encoders or scales.





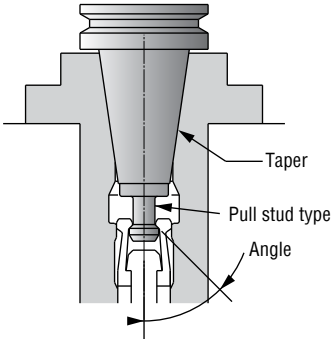
MP Scale

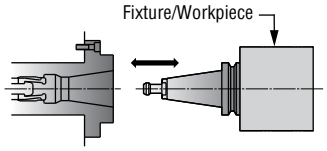
TABLE ACCURACIES WITH SCALES / ENCODERS

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	Rotary axis	MPI 736B	±5 arc sec.	RCN-2590	±3 arc sec.
RNCM-251, 301	Rotary axis	MPI 736B	±5 arc sec.	RCN-2590	±3 arc sec.
RWB-250(K)	Rotary axis	MPI 736B	±5 arc sec.	RCN-2590	±3 arc sec.
RWB-320(K)	Rotary axis	MPI 1072B	±4 arc sec.	RCN-2590	±3 arc sec.
RWB-400(K)	Rotary axis	MPI 1272B	±4 arc sec.	RCN-2590	±3 arc sec.
RWB-500(K)	Rotary axis	MPI 1272B	±4 arc sec.	RCN-2590	±3 arc sec.
RNCM-401 ~ 631	Rotary axis	MPI 1272B	±4 arc sec.	RCN-2590	±3 arc sec.
RCV-800 ~ 1000	Rotary axis	MPI 1272B	±4 arc sec.	RCN-2590	±3 arc sec.
RNCV-801 ~ 1501	Rotary axis	MPI 1272B	±4 arc sec.	RCN-2590	±3 arc sec.
TWA-130	Rotary axis	MPI 536A	±7.5 arc sec.	RCN-2590	±7.5 arc sec.
	Tilt axis				
TWA-160	Rotary axis	MPI 536A	±7.5 arc sec.	RCN-2590	±7.5 arc sec.
	Tilt axis				
TWA-200	Rotary axis	MPI 536A	±7.5 arc sec.	RCN-8590	±3 arc sec.
	Tilt axis				
TN-320	Rotary axis	MPI 736B	±5 arc sec.	RCN-8590	±3 arc sec.
	Tilt axis	MPI 1072B			
TWB-630	Rotary axis	MPI 736B	±5 arc sec.	RCN-8590	±3 arc sec.
	Tilt axis		±7.5 arc sec.		
TTNC-1001	Rotary axis	MPI 1272B	±4 arc sec.	RCN-8590	±3 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	Stud
45°	I
60°	II
90°	Other

TWA-130 with CAT-40 Pull Stud

PULL STUD MODELS

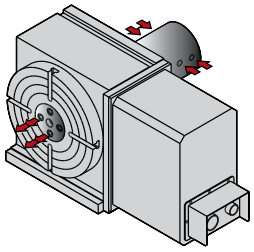
Rotary Table Model	Taper shank	Pull stud clamp force N (lbf.)	Hydraulic pressure PSI	Pneumatic pressure for air blow PSI
RWE-160, 200, 250, 320 RWA-160, 200, 250, 320	CAT/BT-40	11,000 (2,464)	500	30 ~ 60
TN-101 TWA-130, 160				
RWE-200, 250, 320 RWA-200, 250, 320	CAT/BT-50			
RWB-250(K)				
TWA-200,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

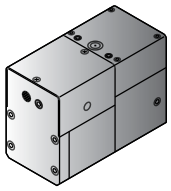
Rotary Table Model	Maximum number of ports	Typical supplied pressure PSI
RWE-160, RWA-160, 200, 250	6	3000 (Custom designs available)
RWE-320, RWA-320	6	
RNCM-251, 301, 401	6	
RNCM-501	6	
RCV-Series	Varies	
RNCV-Series	Varies	
RWB-250(K), 320(K)	12	
RWB-400(K), 500(K)	16	
RNCK-631	8	
RC/RNC-Series	Varies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

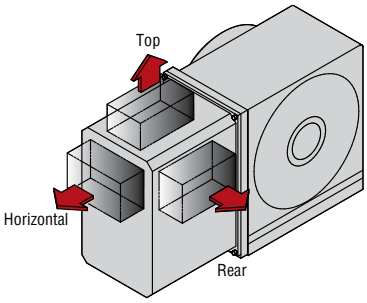


RWB-400K with Capto C8 Pull Stud and custom rotary joint

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	

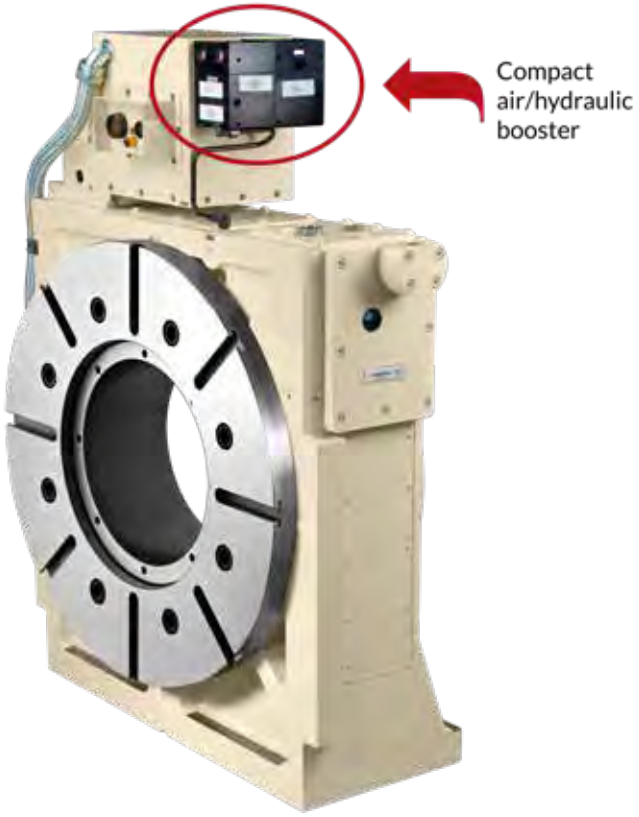


Booster Mounting Locations

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.

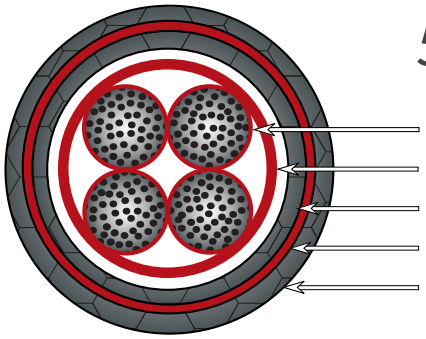
*If the machine tool does not have a hydraulic source to power the rotary table clamp mechanism, a Tsudakoma air/hydraulic booster is used to power the clamping. An air source is plumbed to the inlet port of the booster, and the outlet port of the booster is plumbed to the rotary table hydraulic inlet 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.

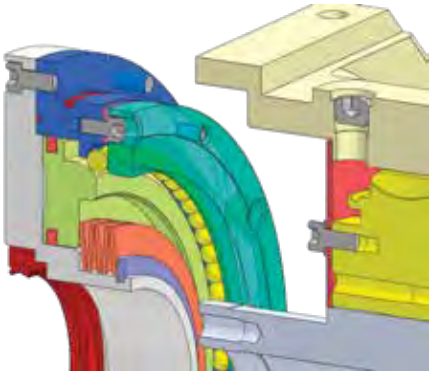


5 Layers of Protection:

- 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



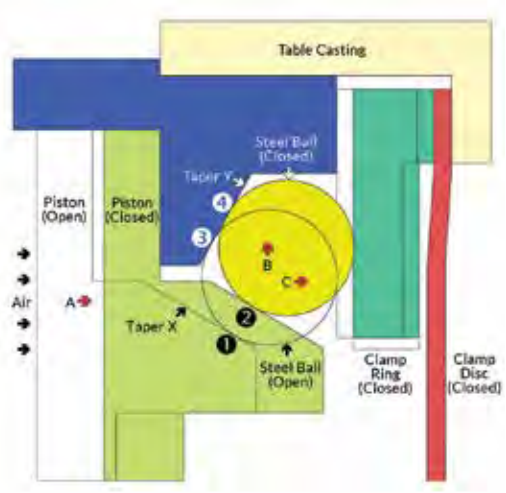
Tsudakoma Dual Taper Clamping Mechanism

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

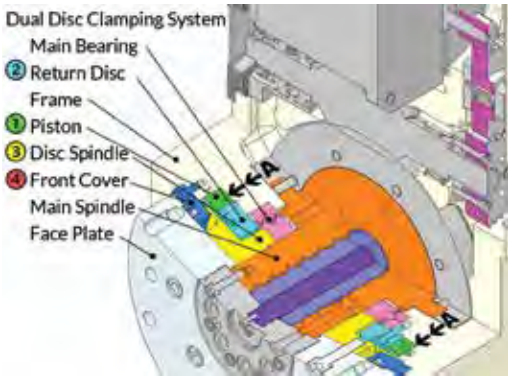
4) Steel Ball moving in Direction C forces Clamp Ring against Clamp Disc. The movement of the Steel Ball along Taper X and Taper Y results in the applied force being multiplied by a factor of 1.73 x 1.73 = 3.0



Tsudakoma Dual Disc Clamping Mechanism

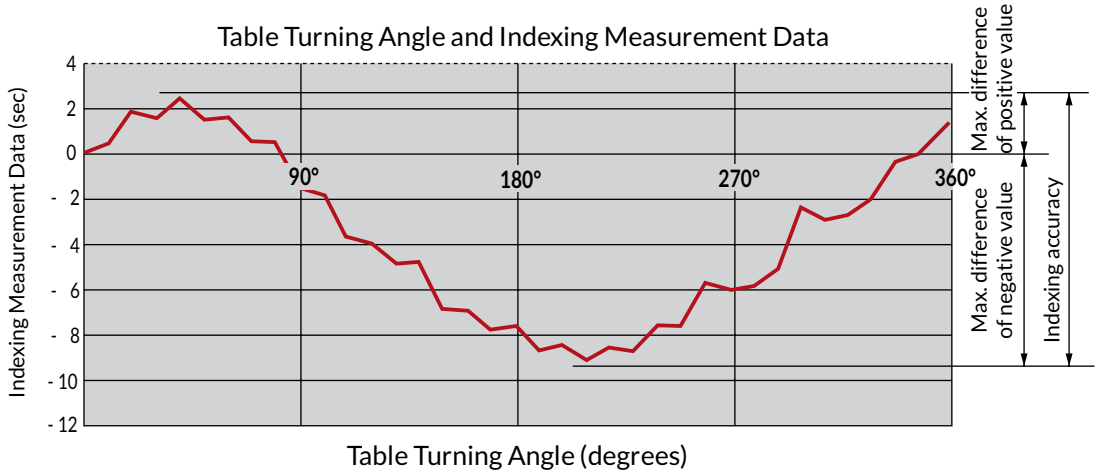
1) Hydraulic pressure* moves Piston ① in Direction A.

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	HG104T	HG154T	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.

A: Without clamp command

B: For hydraulic clamp

C: For pneumatic clamp

D: For air/hydraulic clamp

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

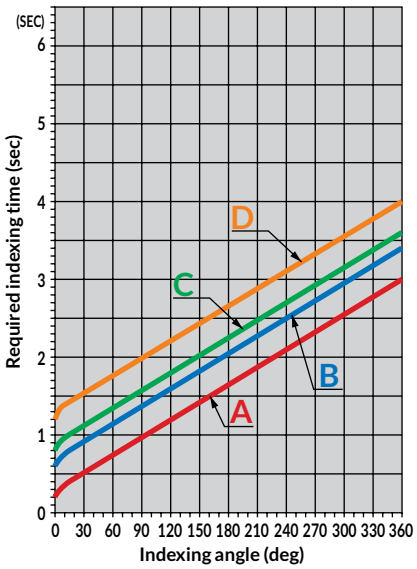
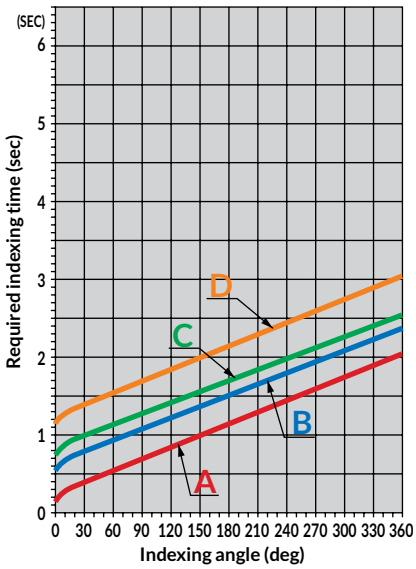


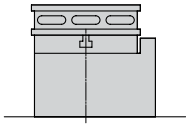
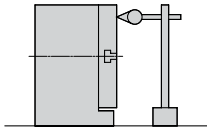
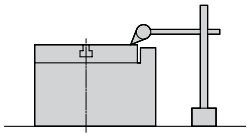
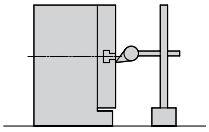
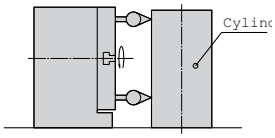
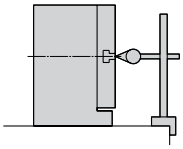
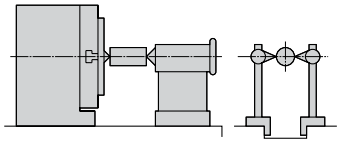
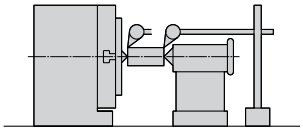
Table rotation speed, 8,000 deg/min (22.2rpm)
Acceleration/deceleration constant, 150msec



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 | ISO 230-1

SINGLE AXIS ROTARY TABLES

1		2		3	
4		5		6	
7	Indexing accuracy is measured by an optical measuring device.	8		9	

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

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.

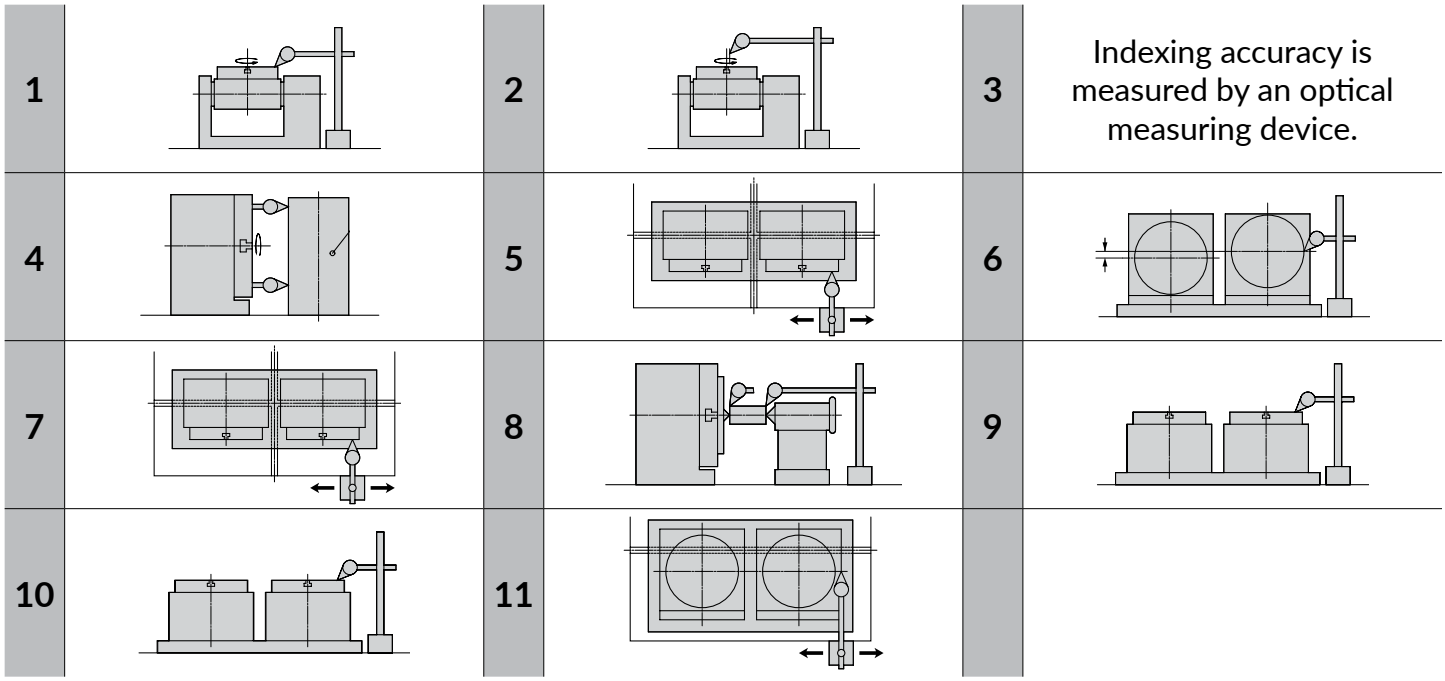
RWE-SERIES INDEXERS

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

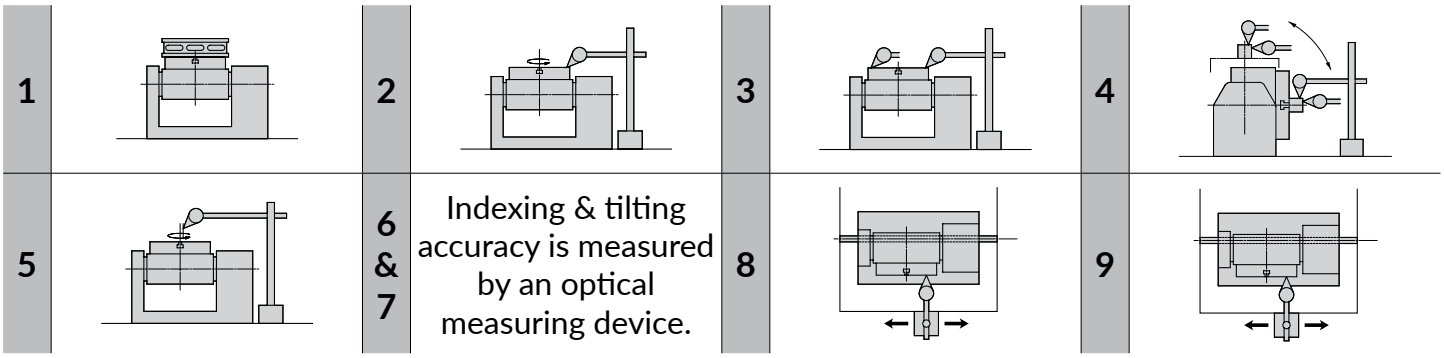
Unit: mm

No.	Inspection items			RN-100,n	RWM-160,n	RWM-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		TWA-100	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		TWB-630		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

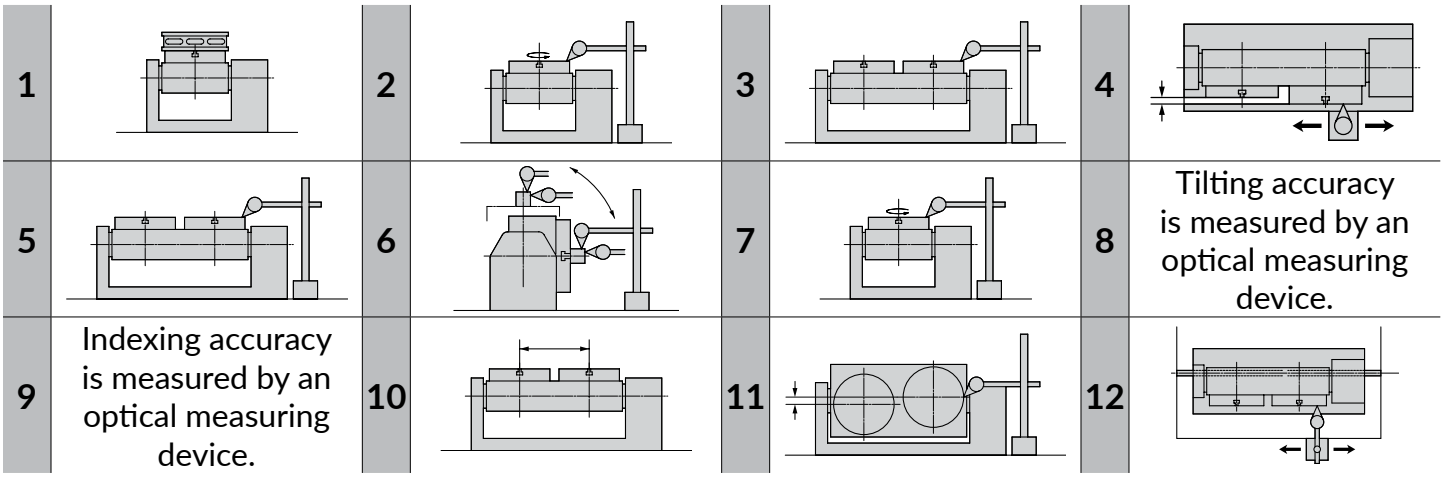
Unit: mm

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

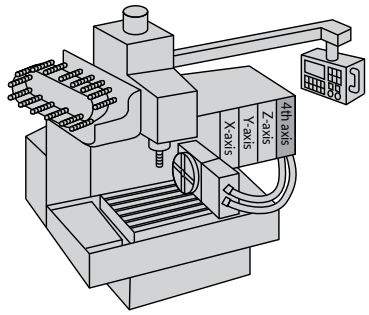
No.	Inspection items		TWM-100	TTNC-101,4	TWM-160	TWM-250,2
1	Table top flatness (concave)	Per overall length	—	—	0.02	0.01
2	Table top runout		0.015	0.015	0.015	0.015
3	Difference between average heights of both tables	at 0° position	0.02	0.02	0.02	0.02
4	Difference between distances between frame standard 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.”

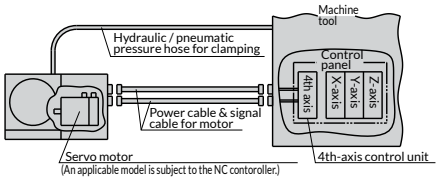
ROTARY TABLE SELECTION

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.



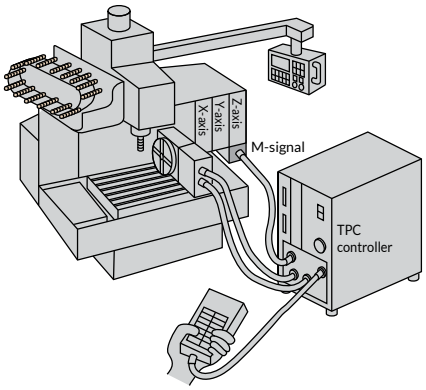
Structure



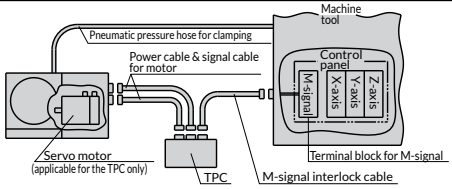
Features

- 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

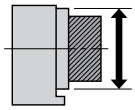


Features

- 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.

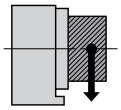
2. Select a rotary table by determining the workpiece parameters and the machining operations to be performed.

- Workpiece diameter



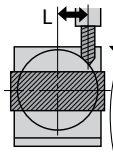
(Should not be larger than the rotary table diameter.)

- Workpiece weight



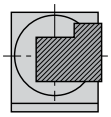
(Should not exceed the maximum specified figure.)

- Workpiece positioning



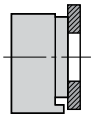
(The value of (F×L) should not be greater than the clamp force.)

- Workpiece with eccentric load



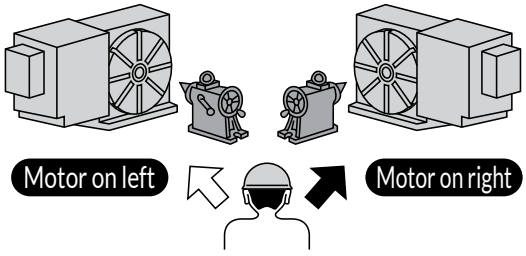
(The workpiece inertia should not exceed the maximum specified figure. The part must not have any machine tool interference.)

- Workpiece of larger diameter, but lighter weight



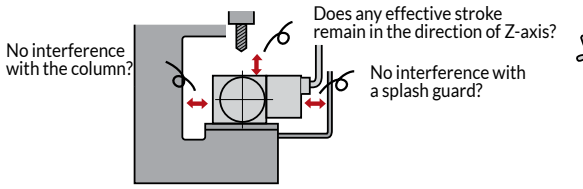
(The workpiece must not have any machine tool interference.)

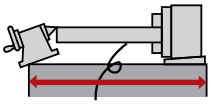
3. Determine the motor location on the rotary table.



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.





Will the combined size of the workpiece and the rotary table fit on the machine tool?

- 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: _____

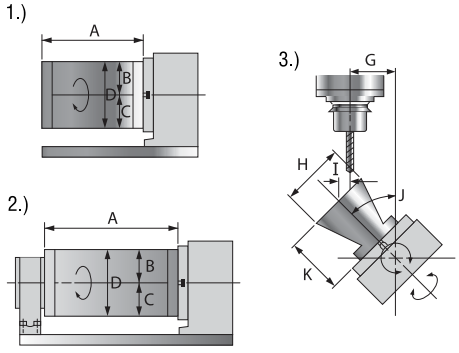
B: _____ B: _____ H: _____

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:

This form is available online at www.komaprecision.com.

ROTARY TABLE INTEGRATION

Koma now offers rotary table integration with cable management and onsite installation. We can add additional axes to your VMC or HMC. Cable Management systems allows the table to remain connected to the machine control throughout a pallet change. Add a hydraulic power system to your HMC (with/without rotary table) which can be used to automatically actuate fixturing/workholding. Koma's integration division assures the upmost integrity of our installations using the highest quality components along with our custom engineering designs.

SUPPORT

Koma application engineers - with AutoCAD® and SolidWorks® 3D CAD support - ensure products purchased from KOMA will be the best available for the required machining operations. Torque calculations and interference drawings are standard no-charge, value added services offered by Koma Precision. Koma's regional managers partner with OEM's and machine tool dealers from coast to coast to assist with product selection, guaranteeing complete customer satisfaction.

NOTES

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

This form is available online at www.komaprecision.com.