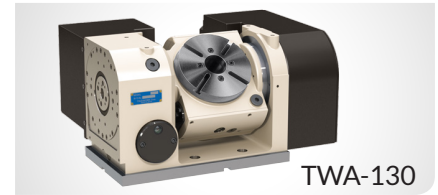




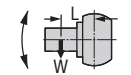
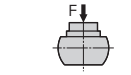
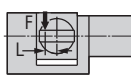
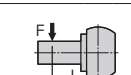
**TN-101, 320 / TWA-130, 160, 200**

POWERFUL, HIGH SPEED TILTING TABLES

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



TWA-130

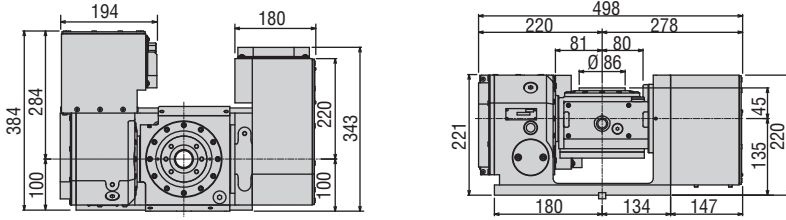
Model		TN-101	TWA-130	TWA-160	TWA-200	TN-320					
Tilt Range		-17° ~ +107°	-17° ~ +107°	-30° ~ +110°	-30° ~ +110°	-30° ~ +110°					
Spindle outer diameter	mm	86h7	90h7	100h7	120h7	-					
Table diameter (optional)	mm	(135)	(135)	(160 or 200)	(200 or 250)	320					
Table height at 0° position	mm	180 (205 w/face plate)	210 (235 w/face plate)	235 (260 w/face plate)	270 (300 w/face plate)	355					
Center height at 90° position	mm	135	150	180	210	255					
Center bore	Nose Diameter (w/ face plate)	mm	55H7 (40H7)	55H7 (40H7)	55H7 (50H7)	65H7 (60H7)	105H7				
	Thru Diameter	mm	35	35	40	45	102				
Table T-slot width		12H8 (w/ face plate)	12H8 (w/ face plate)	12H8 (w/ face plate)	12H8 (w/ face plate)	14H7					
Guide block width		14h7	14h7	18h7	18h7	18h7					
Servo motor (Fanuc)*	Rotary	Alpha 2i	Alpha 2i	Alpha 2i	Alpha 2i	Alpha 4i	Alpha 4i	Alpha 8i	Alpha 8i		
	Tilt	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	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 <sup>-3</sup> kg·m <sup>2</sup>	.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 <sup>2</sup>	.08	.08	.19	.59	1.53					
Allowable work weight	0° tilt angle 	kg (lbs)	35 (77)	35 (77)	60 (132)	120 (264)	150 (330)				
	0° ~ 90° tilt angle 	kg (lbs)	20 (44)	20 (44)	40 (88)	70 (154)	100 (220)				
Allowable work moment	 Nm (ft. lbs.)	24 (17.7)	24 (17.7)	39.2 (28.9)	53.7 (39.6)	163.3 (120.4)					
Allowable load when table clamped	 N (lbf)	3,920 (878)	3,920 (878)	7,840 (1,756)	13,720 (3,073)	19,600 (4,390)					
	 Nm (ft. lbs.)	200 (147)	500 (369)	500 (369)	800 (590)	2,200 (1,621)					
	 Nm (ft. lbs.)	300 (221)	500 (369)	800 (590)	1,000 (737)	2,200 (1,621)					

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

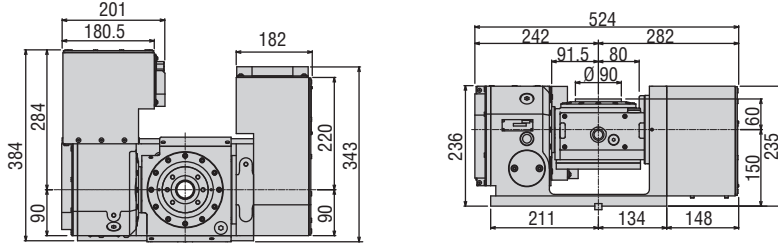
## Dimensions

Drawings not to scale • Dimensions = mm

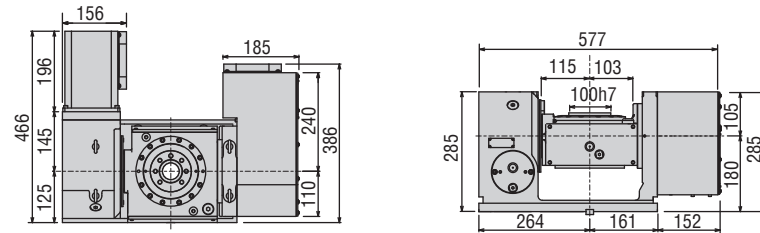
### TN-101



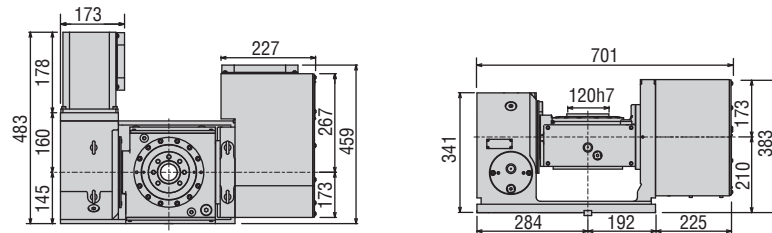
### TWA-130



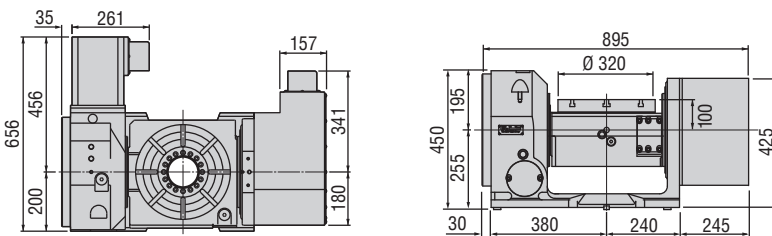
### TWA-160



### TWA-200



### TN-320

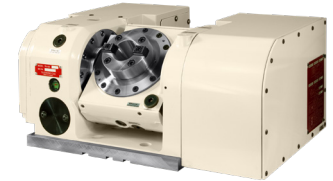


The dimensions above are for tables with a FANUC servo motor. Other motors available (dimensions may increase).

**TWA-Series**  
**Monoblock Construction**  
 TWA-Series tilting rotary tables feature Tsudakoma's Monoblock one piece casting construction. Monoblock construction results in tilting tables with superior rigidity and clamping characteristics, which translates into parts with smoother surface finishes. Tsudakoma is the only rotary table manufacturer with its own casting foundry.



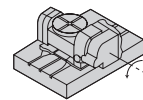
TWA-130  
 Pull Stud Option



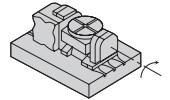
### Options & Accessories

TPC NC Controller	p.68
Chucks	p.79
Tailstock	p.81
Support Spindle	p.81
Face Plate	p.83
Encoder / Scale	p.84
Pull Stud Device	p.85
Rotary Joint	p.85
PVC or Steel Cables	p.86

Layout a



Layout b

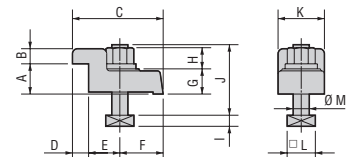


### Clamping Block and Bolt

Dimensions = mm

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

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.)