

# Screw Driven automation tables

Precise multi-axis positioning systems play an integral part in today's semiconductor, computer peripheral, solar power, flat panel, life sciences, lab automation, biomedical and electronics industries. The demands for tighter specifications, improved throughput and consistent quality have become increasingly stringent. Because of the complexity associated with these systems, many manufacturers insist on a single source supplier to eliminate multiple vendor design incompatibilities and delivery conflicts. With over forty years' experience as a global leader in the development of products and technology, Parker provides the most advanced, easy to integrate high-precision electromechanical systems.

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## 200RT Series Rotary Tables

### Features

- Highly repeatable indexing (12 arc-sec)
- Load capacities to 200 lbs
- 360 degrees continuous travel
- Performance tested worm gear drive
- Selectable table sizes and drive ratio
- Dual race angular contact support bearing

### Quality Design and Construction

The 200RT Series Rotary Tables are designed for precise motor-driven rotary positioning and indexing. These tables are designed to function independently or in conjunction with linear tables used in the high-precision and precision automation applications. Their low profile design minimizes stack height in multi-axis configurations and enables them to fit in many places where other motorized rotary devices cannot.

Models are available in 5, 6, 8, 10, or 12 inch diameters and are offered with four gear ratios making it convenient to match size, speed, and load requirements. They can be selected in either English or metric mounting. They are found in virtually all industries where intermittent part indexing, part scanning, skew adjustment, or precise angular alignment is required.

At the heart of these tables is a rugged main support bearing which is comprised of two preloaded angular contact bearing races. It is designed for high load capacity and smooth, flat rotary motion. The drive is a precision worm gear assembly which is preloaded to remove backlash. The top and base are constructed of high quality aluminum with an attractive black anodized finish. The top and bottom mounting surfaces are precision ground to assure flatness.

### High Performance Direct Drive Rotary Tables

Parker's DM1004 direct drive brushless servo motor tables offer an alternative to the 200RT series for high throughput precision indexing.

Visit our website for complete information.



### Options and Accessories

#### Motor Couplings

A wide range of coupling styles and bores are available to match motor requirements. Bellows-style couplings, offering the lowest windup are required for all precision grade tables, while the aluminum and stainless steel helix couplers offer good windup characteristics and high durability at a lower cost.

#### Motor Mounts

The motor mount is designed for an industry standard NEMA 23 motor flange and a maximum shaft length of 0.85".

#### Home Sensor

The Home sensor provides a fixed reference point to which the table can always return. This is a mechanical reed switch which is mounted the body of the rotary table and is activated by a magnet imbedded on the table top.

#### Rotary Encoders

High resolution, high accuracy rotary encoders can be added for direct positional feedback of the table top position. Rotary encoders can be mounted directly to the base of the rotary table. The encoder input shaft is then coupled directly to the rotary table top, supplying positional feedback of the table top, with no drive train errors. They can be supplied with or without a base housing which encloses and protects the encoder.

#### Seals

Custom designed sealed units are offered to prevent excessive wear or internal damage resulting from dust and contaminates.

#### Motors, Drives & Controls

Micro-step motors with drives are available for direct mounting to the rotary tables. Motion controllers can also be added to provide systems with seamless connectivity.



## 200RT Common Characteristics

	Units	Precision	Standard
Positional Repeatability (unidirectional)	arc-min	0.2	0.5
Duty Cycle	%	50	50
Table Runout (Max.)	in (µm)	±0.001 (±25)	±0.003 (±75)
Concentricity	in (µm)	±0.001 (±25)	±0.005 (±127)
Wobble	arc-sec	30	60
Input Velocity (Max.)	revs./sec.	15	15

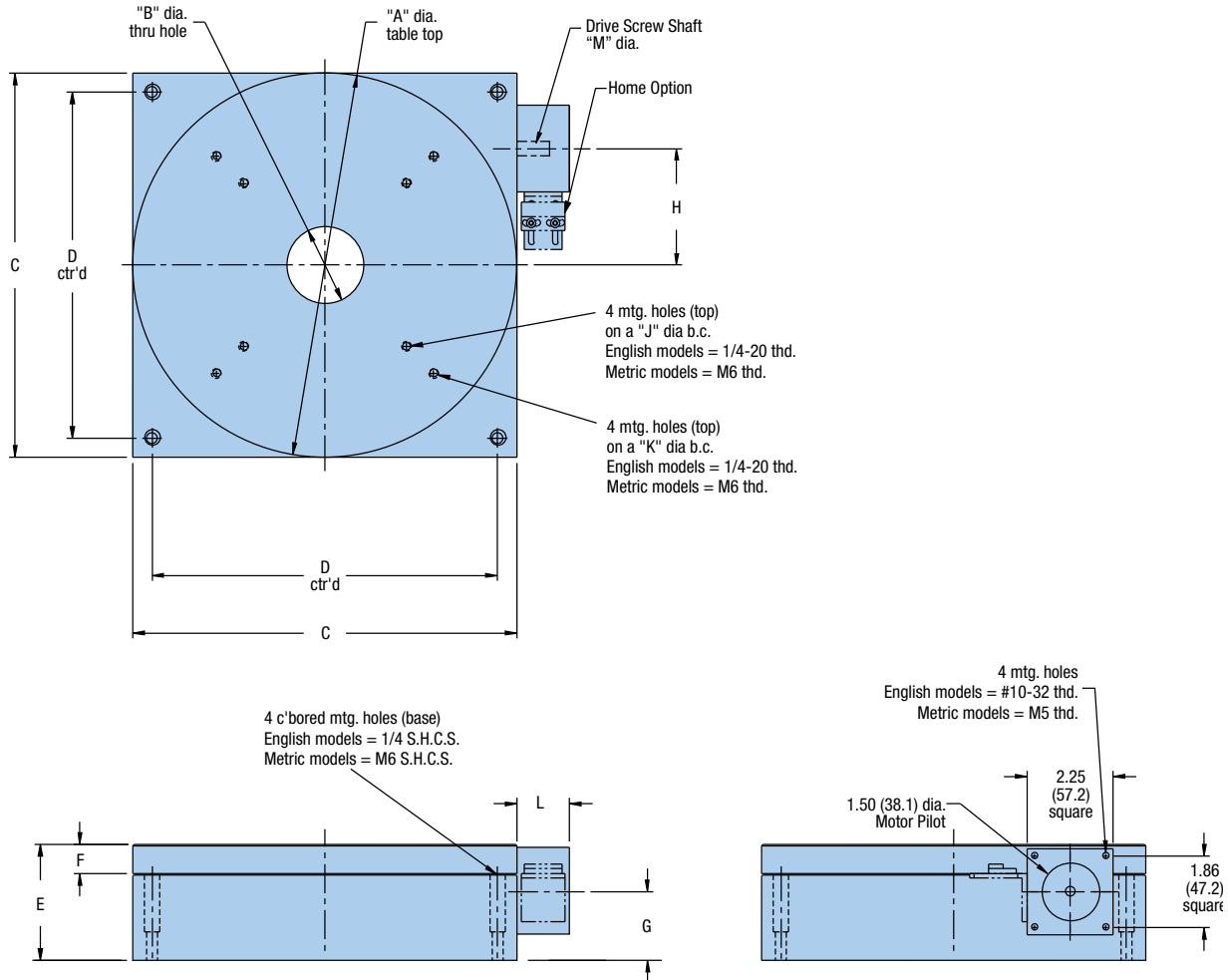
## Travel Dependent Characteristics

Table Diameter inches	Drive Ratio	Load Capacity lbs (kgf)	Accuracy arc-min		Output Torque in-lb (N-m)	Inertia 10 <sup>-3</sup> -oz.-in-sec <sup>2</sup> (10 <sup>-6</sup> kg-m-sec <sup>2</sup> )	Input Breakaway Torque (max.) oz.-in (N-m)	Running Torque (max) oz-in (N-m)	Weight lb (kgf)	
			Precision	Standard					Standard Top	Total
5.0	180:1	25 (11)	3	10	25 (2.8)	0.14 (0.102)	22 (0.16)	20 (0.13)	0.67 (0.3)	6.0 (2.7)
5.0	90:1	25 (11)	3	10	25 (2.8)	0.15 (0.112)	22 (0.16)	20 (0.13)	0.67 (0.3)	6.0 (2.7)
5.0	36:1	25 (11)	5	12	25 (2.8)	0.24 (0.173)	22 (0.16)	20 (0.13)	0.67 (0.3)	6.0 (3.6)
6.0	180:1	150 (68)	3	10	40 (4.5)	0.16 (0.112)	22 (0.16)	20 (0.13)	0.91 (0.42)	8.0 (2.7)
6.0	90:1	150 (68)	3	10	40 (4.5)	0.20 (0.132)	22 (0.16)	20 (0.13)	0.91 (0.42)	8.0 (3.6)
6.0	45:1	150 (68)	5	12	40 (4.5)	0.29 (0.204)	22 (0.16)	20 (0.13)	0.91 (0.42)	8.0 (3.6)
8.0	180:1	150 (68)	3	10	40 (4.5)	0.24 (0.163)	28 (0.19)	25 (0.18)	2.23 (1.01)	15.0 (6.8)
8.0	90:1	150 (68)	3	10	40 (4.5)	0.66 (0.459)	28 (0.19)	25 (0.18)	2.23 (1.01)	15.0 (6.8)
8.0	36:1	150 (68)	5	12	40 (4.5)	0.90 (0.642)	28 (0.19)	25 (0.18)	2.30 (1.05)	15.0 (6.8)
10.0	180:1	200 (90)	3	10	190 (21.5)	0.74 (0.530)	33 (0.22)	30 (0.21)	5.26 (2.30)	29.0 (13.1)
10.0	90:1	200 (90)	3	10	190 (21.5)	1.02 (0.734)	33 (0.22)	30 (0.21)	5.26 (2.30)	29.0 (13.1)
10.0	45:1	200 (90)	5	12	190 (21.5)	2.13 (1.53)	33 (0.22)	30 (0.21)	5.26 (2.30)	29.0 (13.1)
12.0	180:1	200 (90)	3	10	190 (21.5)	0.99 (0.713)	33 (0.22)	30 (0.21)	7.67 (3.49)	32.0 (14.5)
12.0	90:1	200 (90)	3	10	190 (21.5)	1.59 (1.12)	33 (0.22)	30 (0.21)	7.67 (3.49)	32.0 (14.5)
12.0	45:1	200 (90)	5	12	190 (21.5)	3.83 (2.75)	33 (0.22)	30 (0.21)	7.67 (3.49)	32 (14.5)

NOTE: For moment load calculations, refer to the technical section of Parker's web site [www.parkermotion.com](http://www.parkermotion.com)

**200RT Series Dimensions**

Dimensions - inches (mm)



**English Units**

A	B	C	D	E		F		G	H	J	K	L	M
				Standard (T2)	Option (T3)	Standard (T2)	Option (T3)						
5.0	1.0	5.0	4.0	1.8	2.42	0.38	1.00	1.11	1.66	3.0	4.0	1.38	0.188
6.0	1.75	6.0	5.0	2.0	2.62	0.38	1.00	1.23	2.04	4.0	5.0	1.38	0.25
8.0	1.75*	8.0	6.0	2.5	3.12	0.50	1.00	1.57	2.04	4.0	6.0	1.38	0.25
10.0	2.0	10.0	9.0	3.0	3.62	0.75	1.00	1.81	3.03	6.0	8.0	1.38	0.25
12.0	2.0	10.0	9.0	3.0	3.62	0.75	1.00	1.81	3.03	8.0	10.0	2.38	0.25

\*On the 8.0" (203,2) diameter table with 36:1 ratio, this dimension is 1.0" (25,4).

**Metric Units**

A	B	C	D	E		F		G	H	J	K	L	M
				Standard (T2)	Option (T3)	Standard (T2)	Option (T3)						
127.0	25.4	127.0	100	46.0	61.5	9.6	25.0	28.1	42.1	75	100	35	4.76
152.4	44.5	152.4	125	50.8	66.5	9.6	25.0	31.4	51.8	100	125	35	6.35
203.2	44.5*	203.2	175	63.5	79.2	12.7	25.0	39.8	51.8	100	150	35	6.35
254.0	50.8	254.0	225	76.2	91.9	19.0	25.0	45.9	76.9	150	200	35	6.35
304.8	50.8	254.0	225	76.2	91.9	19.0	25.0	45.9	76.9	200	250	60.4	6.35

\*On the 8.0" (203,2) diameter table with 36:1 ratio, this dimension is 1.0" (25,4).



Fill in an order code from each of the numbered fields to create a complete model order code.

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

**Order Example:** 2 08 01 RT M S H1 C1 M1 E1 T1

**① Series**

2

**② Table Diameter**

05 5 in, 125 mm  
 06 6 in, 150 mm  
 08 8 in, 200 mm  
 10 10 in, 250 mm  
 12 12 in, 300 mm

**③ Gear Ratio**

01 180:1, Available on all dia.  
 02 90:1, Available on all dia.  
 04 45:1, Available on 6", 10" and 12" dia. only  
 05 36:1, Available on 5" and 8" dia. only

**④ Table Style**

RT

**⑤ Mounting**

E English  
 M Metric (800CT only)

**⑥ Grade**

S Standard  
 P Precision

**⑦ Home**

H1 No home switches  
 H2 Magnetic home switches

**⑧ Motor Coupling**

C1 No coupling  
 C2 0.25 in bore, helix, aluminum  
 C3 0.25 in bore, helix, stainless steel (not available on 205 model)  
 C4 0.25 in bore, bellows, required for precision grade  
 C5 0.375 in bore, helix, aluminum  
 C6 0.375 in bore, helix, stainless steel (not available on 205 model)  
 C7 0.375 in bore, bellows, required for precision grade

**⑨ Motor Mount**

M1 23 frame size

**⑩ Encoder**

E0 No encoder  
 E8 Ring encoder – 314,880 post quad. counts/rev  
 E9 Ring encoder – 3,148,800 post quad. counts/rev

**⑪ Table Top**

T1 No top  
 T2 Standard top  
 T3 Oversized top (raises height to clear NEMA 23 motor)

Screw Driven  
Tables

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