100CT & 800CT Series

Features

- Twice as strong as the same size ball bearing table
- Nonrecirculating bearing design for the smoothest linear translation
- Leadscrew drive for smooth motion or ballscrew drive for 100% duty cycle
- Highly repeatable positioning (+/-0.00005")
- Precision ground top and bottom mounting surfaces

Quality Design and Construction

The 100CT and 800CT linear tables employ a non-recirculating cross roller bearing system to provide smooth linear translation of heavier loads where mechanical disturbance cannot be tolerated. They are offered in two styles – the 100CT and 800CT. The 100CT is a low profile light duty cross roller table. It is similar in size and shape to the 100BT ball bearing table and utilizes the same pre-loaded leadscrew drive. It is designed to fit those applications whose load requirements exceed the 100BT and whose duty cycle is less than 75%. The 800CT is a rugged table rated at 100% duty cycle. It has a larger cross roller bearing system and an efficient (90%) ballscrew drive, and should be considered in high to ultra high-end applications that require accurate positioning over a relatively short distance at slow to moderate speeds and accelerations.

Options:

Motor Couplings
A wide range of coupling styles and bores are available to match motor requirements. Bellows-style couplings are required for all precision grade tables and have the lowest radial windup, 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 with shaft lengths between 0.65 and 0.85 inches.

Limit and Home Switches
All styles can be equipped with either mechanical reed switch or optical sensor type limit and home switch assemblies. The limit switches provide a signal when the table is approaching its end of travel which is used to command the motor to stop. The Home sensor provides a fixed reference point to which the table can always return.

Linear Encoders
This option mounts to the side of the table and is used to give direct positional feedback of the carriage. English resolution of 0.0001 inch and Metric resolution of 0,001 mm are available.

Z-Brackets
Brackets for vertical mounting of these units are offered as a standard accessory.

NOTE: ***Refer to Daedal's web site www.daedalpositioning.com or contact a Daedal applications engineer for additional detailed information pertaining to any of these options or accessories.***

800CT Series Characteristics

Common Characteristics	Units	Precision	Standard
Performance			
Positional Repeatability (bidirectional)	x 0.001 in (µm)	+/-0.05 (+/-1,3)	+/-0.2 (+/-5)
Life @ rated Load Cap.	x 1 million in (km)	100 (2540)	100 (2540)
Duty Cycle	%	100	100
Acceleration (Max.)	in/sec² (m/sec²)	96 (2,4)	96 (2,4)
Maximum Screw Speed	rps	50	50
Motor Sizing			
Ballscrew Diameter	in (mm)	0.625 (15,9)	0.625 (15,9)
Drive screw Efficiency	%	90	80
Breakaway Torque (Max.)	oz-in (N-m)	17.6 (0,12)	26.4 (0,19)
Running Torque (Max.)	oz-in (N-m)	16.0 (0,11)	24.0 (0,17)
Coefficient of Friction - Linear Brg.		0.003	0.003

Travel Dependent Characteristics

	Travel Inches (mm)	Load Capacity* lbs (kgf) Normal	Inverted	Axial	Accuracy x 0.001 in (µm) Positional	Straightness	Input Inertia** 10^{-3} oz-in.-sec² 6" wide	(10^{-5} kg-m²) 8" wide	Weight lbs (kgf) Carriage 6" wide	8" wide	Total 6" wide	8" wide
Precision Grade	**4.0 (100)**	200 (90)	100 (45)	200 (91)	0.32 (8)	0.32 (8)	2.33 (1,65)	2.38 (1,68)	5.4 (2,5)	7.2 (3,3)	12.4 (5,6)	16.6 (7,5)
	6.0 (150)	220 (100)	110 (50)	200 (91)	0.48 (12)	0.48 (12)	2.73 (1,93)	2.80 (1,98)	6.6 (3,0)	9.2 (4,2)	14.6 (6,6)	20.0 (9,1)
	8.0 (200)	240 (108)	120 (54)	200 (91)	0.60 (15)	0.64 (16)	3.14 (2,22)	3.23 (2,28)	7.6 (3,5)	10.8 (4,9)	15.8 (7,2)	23.3 (10,6)
	10.0 (250)	260 (118)	130 (59)	200 (91)	0.60 (15)	0.80 (20)	3.55 (2,51)	3.64 (2,57)	8.7 (3,9)	12.5 (5,7)	19.8 (8,6)	26.7 (12,1)
	12.0 (300)	280 (128)	140 (64)	200 (91)	0.60 (15)	0.96 (24)	3.95 (2,79)	4.06 (2,87)	10.0 (4,5)	14.1 (6,4)	21.6 (9,8)	30.0 (13,7)
Standard Grade	**4.0 (100)**	200 (90)	100 (45)	200 (91)	0.60 (15)	0.32 (8)	2.33 (1,65)	2.38 (1,68)	5.4 (2,5)	7.2 (3,3)	12.4 (5,6)	16.6 (7,5)
	6.0 (150)	220 (100)	110 (50)	200 (91)	0.9 (23)	0.48 (12)	2.73 (1,93)	2.80 (1,98)	6.6 (3,0)	9.2 (4,2)	14.6 (6,6)	20.0 (9,1)
	8.0 (200)	240 (108)	120 (54)	200 (91)	1.0 (25)	0.64 (16)	3.14 (2,22)	3.23 (2,28)	7.6 (3,5)	10.8 (4,9)	15.8 (7,2)	23.3 (10,6)
	10.0 (250)	260 (118)	130 (59)	200 (91)	1.0 (25)	0.80 (20)	3.55 (2,51)	3.64 (2,57)	8.7 (3,9)	12.5 (5,7)	19.8 (8,6)	26.7 (12,1)
	12.0 (300)	280 (128)	140 (64)	200 (91)	1.0 (25)	0.96 (24)	3.95 (2,79)	4.06 (2,87)	10.0 (4,5)	14.1 (6,4)	21.6 (9,8)	30.0 (13,7)

*For moment load calculations, refer to the technical section of Daedal's web site www.daedalpositioning.com
**Input Inertia based on 0.2 inch lead ballscrew.

100CT Series Characteristics

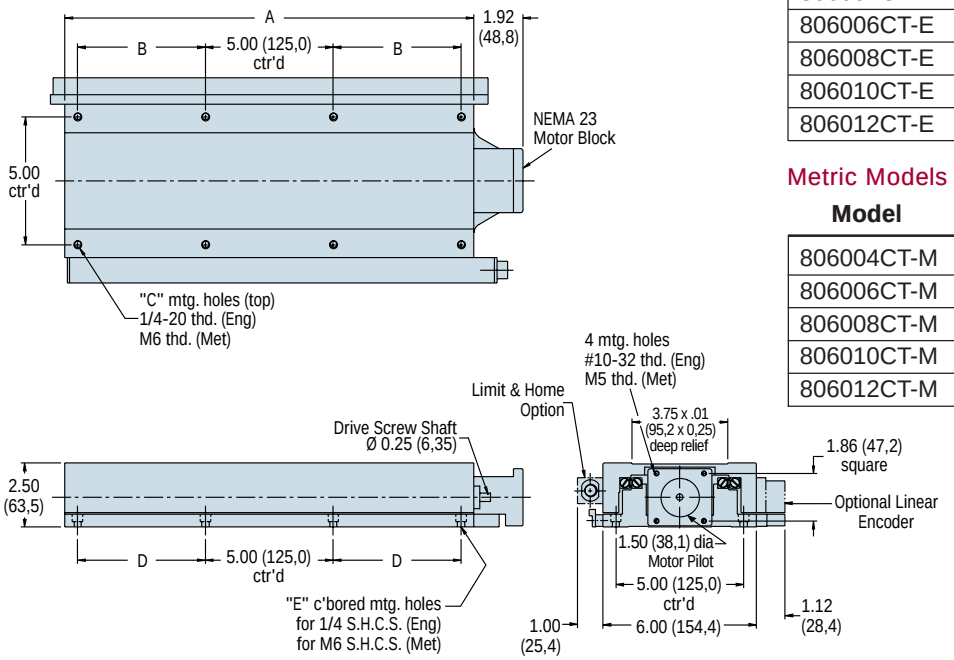
Common Characteristics	Units	Precision	Standard
Performance			
Positional Repeatability (bidirectional)	x 0.001 in (µm)	+/-0.12 (+/- 3,0)	+/-0.47 (+/- 12)
Life @ rated Load Cap.	x 1 million in (km)	10 (254)	10 (254)
Duty Cycle	%	75	75
Acceleration (Max.)	in/sec² (m/sec²)	48 (1,2)	24 (0,6)
Maximum Screw Speed	rps	25	25
Motor Sizing			
Leadscrew Diameter	in (mm)	0.50 (12,7)	0.50 (12,7)
Drive screw Efficiency	%	30	30
Breakaway Torque (Max.)	oz-in (N-m)	16.5 (0,117)	16.5 (0,117)
Running Torque (Max.)	oz-in (N-m)	15 (0,106)	15 (0,103)
Coefficient of Friction - Linear Brg.		0.003	0.003

Travel Dependent Characteristics

	Travel Inches (mm)	Load Capacity* lbs (kgf) Normal	Inverted	Axial	Accuracy x 0.001 in (µm) Positional	Straightness	Input Inertia** 10^{-3} oz-in.-sec² (10^{-5} kg-m²)	Weight lbs (kgf) Carriage	Total
Precision Grade	**4 (100)**	200 (90)	100 (45)	55 (25)	0.6 (16)	0.32 (8)	0.79 (0,56)	5.4 (2,4)	7.6 (3,4)
	6 (150)	220 (100)	110 (50)	55 (25)	0.9 (24)	0.48 (12)	1.02 (0,72)	7.4 (3,4)	10.5 (4,8)
	8 (200)	240 (108)	120 (54)	55 (25)	1.3 (32)	0.64 (16)	1.22 (0,86)	10.5 (4,8)	13.6 (6,2)
	10 (250)	260 (118)	130 (59)	55 (25)	1.6 (40)	0.64 (16)	1.43 (1,01)	11.6 (5,3)	16.7 (7,6)
	12 (300)	280 (128)	140 (64)	55 (25)	1.9 (48)	0.64 (16)	1.63 (1,15)	13.5 (6,1)	19.8 (9)
Standard Grade	**4 (100)**	200 (90)	100 (45)	55 (25)	0.8 (20)	0.8 (20)	0.79 (0,56)	5.4 (2,4)	7.6 (3,4)
	6 (150)	220 (100)	110 (50)	55 (25)	1.2 (30)	1.2 (30)	1.02 (0,72)	7.4 (3,4)	10.5 (4,8)
	8 (200)	240 (108)	120 (54)	55 (25)	1.6 (40)	1.6 (40)	1.22 (0,86)	10.5 (4,8)	13.6 (6,2)
	10 (250)	260 (118)	130 (59)	55 (25)	2.0 (50)	2.0 (50)	1.43 (1,01)	11.6 (5,3)	16.7 (7,6)
	12 (300)	280 (128)	140 (64)	55 (25)	2.4 (60)	2.4 (60)	1.63 (1,15)	13.5 (6,1)	19.8 (9)

*For moment load calculations, refer to the technical section of Daedal's web site www.daedalpositioning.com
**Input Inertia based on 0.2 inch lead ballscrew.

806CT Series Dimensions inch (mm)



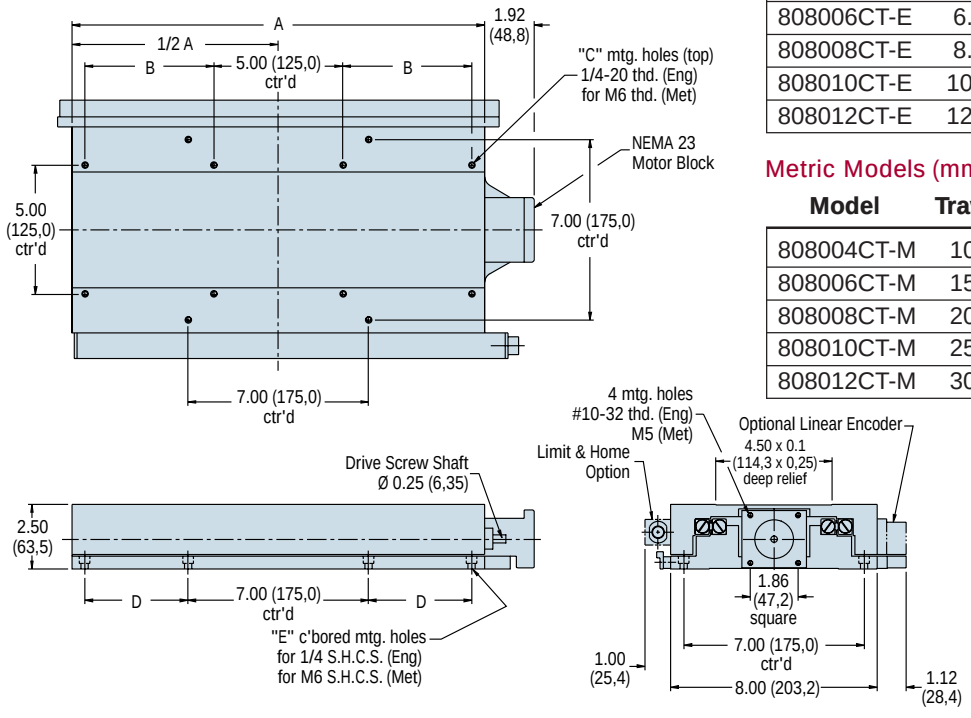
English Models (inch)

Model	Travel	A	B	C	D	E
806004CT-E	4.0	8.0	—	4	—	4
806006CT-E	6.0	10.0	2.0	8	2.0	8
806008CT-E	8.0	12.0	3.0	8	3.0	8
806010CT-E	10.0	14.0	4.0	8	4.0	8
806012CT-E	12.0	16.0	5.0	8	4.0	8

Metric Models (mm)

Model	Travel	A	B	C	D	E
806004CT-M	100	203,2	—	12	—	4
806006CT-M	150	254,0	—	12	50	8
806008CT-M	200	304,8	75	16	75	8
806010CT-M	250	355,6	100	16	100	8
806012CT-M	300	406,4	125	16	100	8

808CT Series Dimensions



English Models (inch)

Model	Travel	A	B	C	D	E
808004CT-E	4.0	8.0	—	4	—	4
808006CT-E	6.0	10.0	2.0	8	2.0	8
808008CT-E	8.0	12.0	3.0	8	3.0	8
808010CT-E	10.0	14.0	4.0	8	4.0	8
808012CT-E	12.0	16.0	5.0	8	5.0	8

Metric Models (mm)

Model	Travel	A	B	C	D	E
808004CT-M	100	203,2	—	12	—	4
808006CT-M	150	254,0	—	12	50	8
808008CT-M	200	304,8	75	16	75	8
808010CT-M	250	355,6	100	16	100	8
808012CT-M	300	406,4	125	16	125	8

106CT Series Dimensions

NOTE: 106CT Series dimensions are identical to those of the 106BT on page B54.

100CT & 800CT Series How to Order

Order Example

8	08	006	CT	M	P	D2	L1	C2	M1	E2

Model Series

100CT	1
800CT	8

Table Width

6 in ..... 150 mm	06
8 in ..... 200 mm (800 Series)	08

Table Travel

4 in ..... 100 mm	004
6 in ..... 150 mm	006
8 in ..... 200 mm	008
10 in ..... 250 mm	010
12 in ..... 300 mm	012

Table Style

Cross Roller Bearing	CT

Mounting

English	E
Metric (800CT only)	M

Grade

Standard Grade	S
Precision Grade	P

Drive Screw

100CT Series Designators		800CT Series Designators	
0.02 in Lead (50 Pitch)	D1	0.20 in Lead Ballscrew	D1
0.10 in Lead (10 Pitch)	D2	5,0 mm Lead Ballscrew	D2
0.20 in Lead (5 Pitch)	D3		
1,0 mm Lead	D4		
2,0 mm Lead	D5		
5,0 mm Lead	D6		
0.1 in Lead (ACME)	D7	-for vertical applications, motor up	
0.1 in Lead (ACME)	D8	-for vertical applications, motor down	

Limit/Home

No Limit/Home Switches	L1
Magnetic Limit/Home Switches	L2
Optical Limit/Home Sensors	L3

Motor Coupling

No Coupling	C1
0.25 in Bore, Helix, Aluminum	C2
0.25 in Bore, Helix, Stainless Steel	C3
0.25 in Bore, Bellows, required for precision grade	C4
0.375 in Bore, Helix, Aluminum	C5
0.375 in Bore, Helix, Stainless Steel	C6
0.375 in Bore, Bellows, required for precision grade	C7

Motor Mount

23 Frame Size	M1

Encoder

No Encoder	E1
Linear Encoder, English, 0.0001 in Resolution	E2
Linear Encoder, Metric, 1.0 µm Resolution	E3