

614 **6** **06** - **NE** - **TB0** - **BC0** - **1** - **S005** - **M02** - **C155** - **L01R** - **E00** - **B00**

Table Series

4 - 4 bearing carriage

Carriage Length

6 - 6 inches

Travel Length (see pages F-6 to F-7)

06 - 6 to 60 inches

Screw Style

NE - no screw extension **SE** - screw extension

Tapped Mounting holes in Base (see page F-7)

TB0 - No holes **TB1** - English holes **TB2** - Metric holes

Linear Bearing Type (See page F-11)

BC0 - No Ball Chain **BC1** - With Ball Chain

Carriage Inserts (see page F-7)

1 - English mount **2** - Metric mount

Screw Options (see pages F-12 to F-17)

Rolled ball screws

S005 - .625 x .200 NPL
S006 - .625 x .200 PL
S007 - .625 x .200 NPL(T)
S008 - .625 x .200 PL(T)
S009 - .625 x 1.000 NPL
S010 - .625 x 1.000 PL
S011 - .625 x 1.000 NPL(T)
S012 - .625 x 1.000 PL(T)
S013 - .750 x .200 NPL
S014 - .750 x .200 PL
S015 - .750 x .200 NPL(T)
S016 - .750 x .200 PL(T)

Rolled ball screws

S017 - .750 x .500 NPL
S018 - .750 x .500 PL
S019 - .750 x .500 NPL(T)
S020 - .750 x .500 PL(T)

Ground ball screws

S212 - .625 x .200 PL
S213 - .625 x .500 PL
S214 - 16 x 5 PL
S215 - 16 x 16 PL

Precision ball screws

S114 - .625 x .200 NPL
S115 - .625 x .200 PL
S116 - 16 x 5 NPL
S117 - 16 x 5 PL
S118 - 16 x 10 NPL
S119 - 16 x 10 PL
S120 - 16 x 16 NPL
S121 - 16 x 16 PL
S122 - .750 x .200 NPL
S123 - .750 x .200 PL
S124 - 20 x 5 NPL
S125 - 20 x 5 PL
S128 - 20 x 20 NPL
S129 - 20 x 20 PL

S999 - other

Rolled acme screws

S300 - .625 x .100 NPL
S301 - .625 x .100 PL
S302 - .625 x .200 NPL
S303 - .625 x .200 PL

Motor Mount (see pages F-24 to F-25)

M00 - none **M02** - NEMA 23 mount (E) **M06** - NEMA 23 (RH) wrap
M01 - hand crank **M03** - NEMA 23 mount (M) **M07** - NEMA 23 (LH) wrap
M16 to M98 - see Website **M04** - NEMA 34 mount (E) **M08** - NEMA 34 (RH) wrap
M99 - other **M05** - NEMA 34 mount (M) **M09** - NEMA 34 (LH) wrap

Coupling Options (see pages F-22 to F-23)

C000 - none **C025 to C030** - C100 **C130 to C136** - H100 **C407 to C415** - G100
C999 - other **C048 to C069** - C125 **C155 to C184** - H131 **C435 to C464** - G126
C196 to C199 - H163 **C470 to C480** - G158

Limit & Home Switches (see pages F-19 to F-21 for location and specification)

L00 - no switches Mechanical Reed Hall Prox (NPN) Prox (PNP)
L99 - other EOT & home switches **L01R or L** **L04R or L** **L07R or L** **L10R or L** **L13R or L**
EOT switches only **L02R or L** **L05R or L** **L08R or L** **L11R or L** **L14R or L**
home switch only **L03R or L** **L06R or L** **L09R or L** **L12R or L** **L15R or L**

Encoder Options - SE OPTION ONLY (see page F-27)

E00 - none **E01** - rotary (500 lines/rev) **E02** - rotary (1000 lines/rev) **E03** - rotary (1270 lines/rev) **E99** - other (linear or rotary)

Power-off Brakes - SE OPTION ONLY (see page F-26)

B00 - none **B01** - 24 VDC **B02** - 90 VDC **B99** - other

Specifications

Load Capacities		Four (4) Bearing Carriage	
Dynamic Horizontal	2 million inches (50 km) of travel	7,780 lbs	(3530 kgf)
Dynamic Horizontal	100 million inches (2540 km) of travel	2,090 lbs	(948 kgf)
Static Horizontal		11,640 lbs	(5280 kgf)
Dynamic Roll Moment	2 million inches (50 km) of travel	920 ft-lbs	(1247 N-m)
Dynamic Roll Moment	100 million inches (2540 km) of travel	247 ft-lbs	(335 N-m)
Static Roll Moment		1,680 ft-lbs	(2277 N-m)
Dyn. Pitch & Yaw Moment	2 million inches (50 km) of travel	980 ft-lbs	(1328 N-m)
Dyn. Pitch & Yaw Moment	100 million inches (2540 km) of travel	263 ft-lbs	(356 N-m)
Static Pitch & Yaw Moment		1,770 ft-lbs	(2400 N-m)
Each Bearing Dyn. Capacity	2 million inches (50 km) of travel	1,945 lbs	(882 kgf)
Each Bearing Dyn. Capacity	100 million inches (2540 km) of travel	525 lbs	(238 kgf)
Each Bearing Static Load Capacity		2,910 lbs	(1320 kgf)
Thrust Force Capacity	10 million screw revolutions	895 lbs	(406 kgf)
Thrust Force Capacity	500 million screw revolutions	240 lbs	(109 kgf)
Maximum Acceleration		772 in/sec ²	(19,6 m/sec ²)
d₁	Center to center distance (spread) between the two rails	3.228 in	(81,99 mm)
d₂	Center to center distance (spacing) of the bearings on a single rail	3.476 in	(88,29 mm)
d_r	Center distance of the bearing to top of carriage plate surface	1.299 in	(32,99 mm)

Other	Four (4) Bearing Carriages
Table Material	Base, Carriage, End Plates & Cover Plate Option - 6061 anodized aluminum
Linear Rail Material	Case Hardened Steel
Screw Material (see pages F-13 to F16)	Acme Screw - Stainless Steel
Screw Material (see pages F-13 to F16)	Rolled Ball, Precision Ball, & Ground Ball - Case Hardened Steel
Unidirectional Repeatability	+/- 0.0002 in (5 microns)
Bidirectional Repeatability	+/- 0.0002 in (5 microns) to +/- 0.0082 in (208 microns) - depends on selected screw
Straightness	< 0.00016 in/in (< 4,06 microns/25mm)
Flatness	< 0.00016 in/in (< 4,06 microns/25mm)
Orthogonality (multi-axis systems)	< 30 arc-seconds
Friction Coefficient	< 0.01
Motor Mount	NEMA 23 & 34 Mounts, Metric Mounts, Motor Wraps, and Hand Crank Option
Coupling	Three (3) different styles available
Belt Cover Strip Material	Black - Polyurethane

Specifications subject to change without notice

Dimensions & Specifications

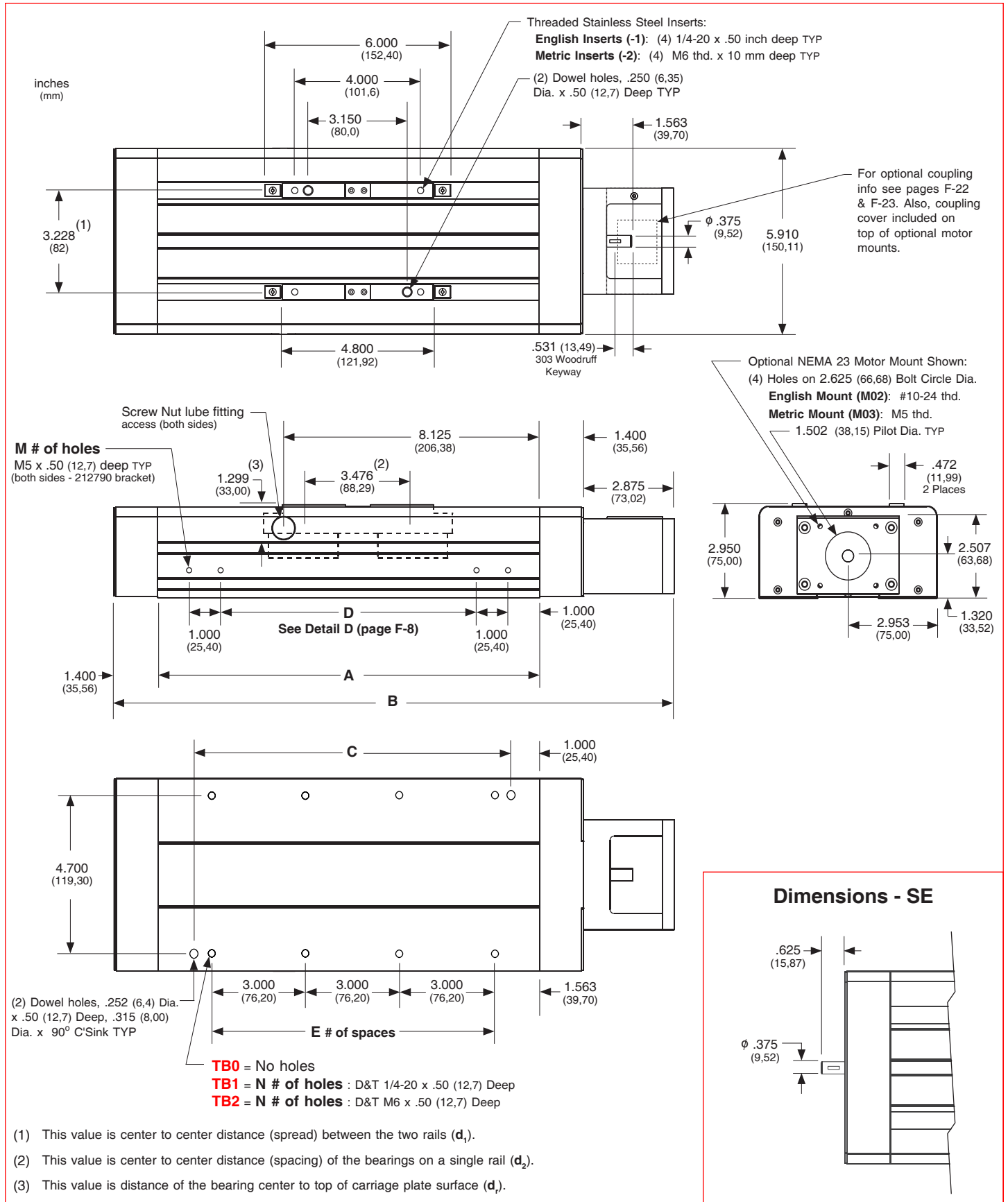
Model Number	Travel Length inches (mm)	Table Dimensions inches (mm)		Mounting Dimensions inches (mm)					Screw Length inches (mm)	Table ⁽²⁾ Weight lbs (kgf)
		A	B	C	D	E	M ⁽¹⁾	N		
614606-NE	6 (150)	12.125 (308,0)	17.800 (452,1)	10.125 (257,18)	8.125 (206,38)	3	8	8	13.40 (340)	18.3 (8,3)
614612-NE	12 (300)	18.125 (460,4)	23.800 (604,5)	16.125 (409,58)	14.125 (358,78)	5	8	12	19.40 (493)	23.5 (10,7)
614618-NE	18 (455)	24.125 (612,8)	29.800 (756,9)	22.125 (561,98)	20.125 (511,18)	7	8	16	25.40 (645)	28.7 (13,0)
614624-NE	24 (605)	30.125 (765,2)	35.800 (909,3)	28.125 (714,38)	12.563 (319,10)	9	12	20	31.40 (798)	34.0 (15,4)
614630-NE	30 (760)	36.125 (917,6)	41.800 (1061,7)	34.125 (866,78)	15.563 (395,30)	11	12	24	37.40 (950)	39.3 (17,8)
614636-NE	36 (910)	42.125 (1070,0)	47.800 (1214,1)	40.125 (1019,18)	18.563 (471,50)	13	12	28	43.40 (1102)	44.6 (20,2)
614642-NE	42 (1060)	48.125 (1222,4)	53.800 (1366,5)	46.125 (1171,58)	21.563 (547,70)	15	12	32	49.40 (1255)	49.8 (22,6)
614648-NE	48 (1215)	54.125 (1374,8)	59.800 (1518,9)	52.125 (1323,98)	16.042 (407,47)	17	16	36	55.40 (1407)	55.1 (25,0)
614654-NE	54 (1370)	60.125 (1527,1)	65.800 (1671,3)	58.125 (1476,38)	18.042 (458,27)	19	16	40	61.4 (1560)	60.4 (27,4)
614660-NE	60 (1520)	66.125 (1679,6)	71.800 (1823,7)	64.125 (1628,78)	20.042 (509,07)	21	16	44	67.4 (1712)	65.7 (29,8)

└ 4; Carriage has 4 bearings; Carriage weight = 3.0 lbs (1,36 kg)

Footnotes:

- (1) Mounting holes are total number. These holes are used for vertically mounting using 212790 "L" bracket. See page F-9 for details on bracket.
- (2) Weight shown is with a 0.625 inch (16 mm) diameter screw, a NEMA 23 motor mount [0.42 lbs (0,19 kg)], a C100 style [0.09 lbs (0,04 kg)] coupling, and a 4 bearing carriage. When using a 0.750 inch (20 mm) diameter screw add 0.042 lbs per inch (0,00075 kg per mm) of screw length for a given model number.

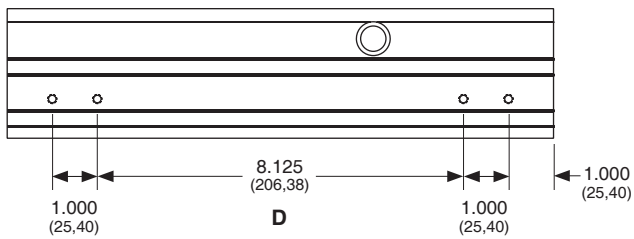
Dimensions - NE and SE



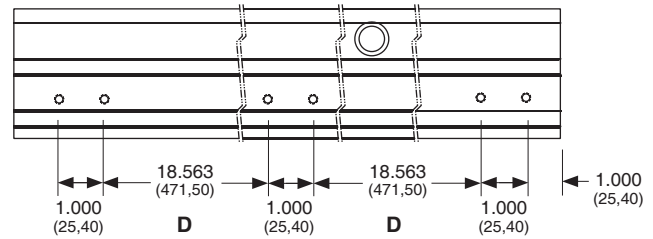
Note: Any 610 series can be mounted on top of a second 610 series table, in order to create X-Y multiple axis configurations. See page F-10 for optional 213320 carriage adapter plate information.

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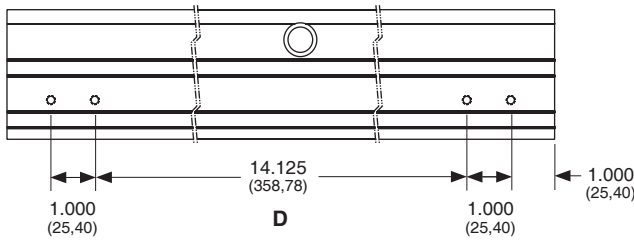
Dimensions - Detail D



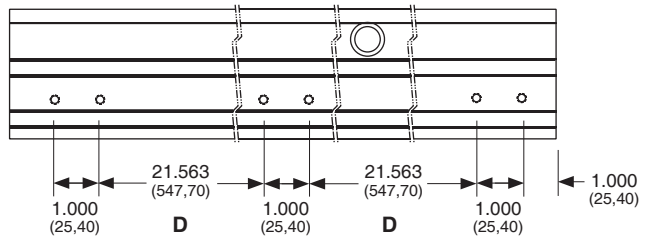
6" travel



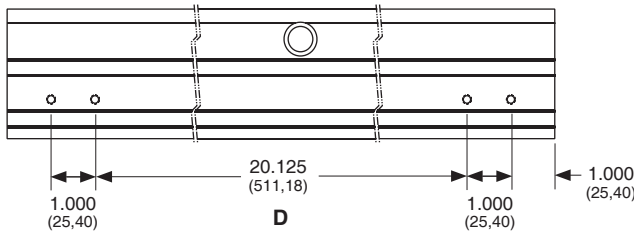
36" travel



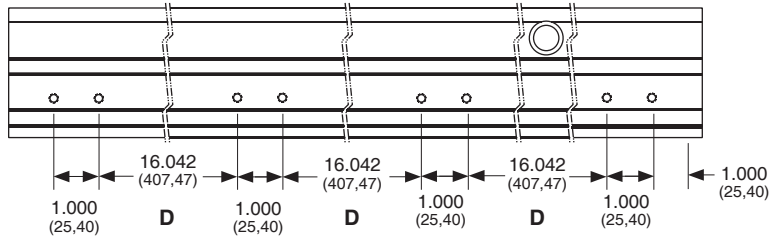
12" travel



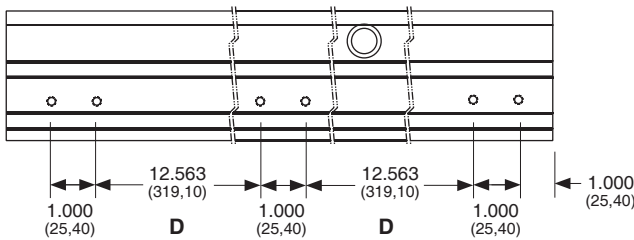
42" travel



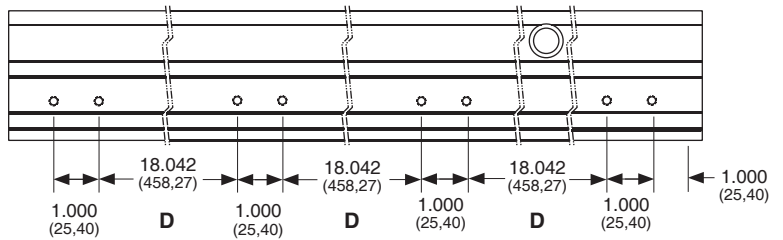
18" travel



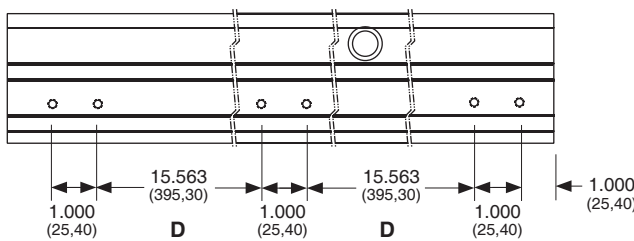
48" travel



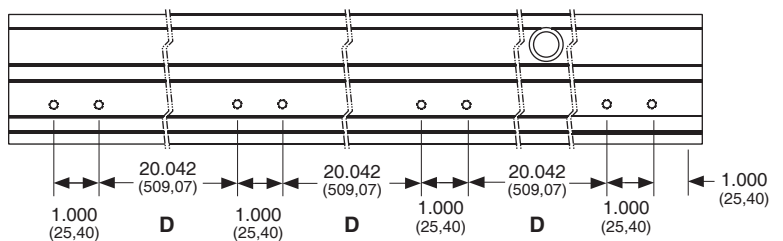
24" travel



54" travel



30" travel



60" travel

Mounting Brackets

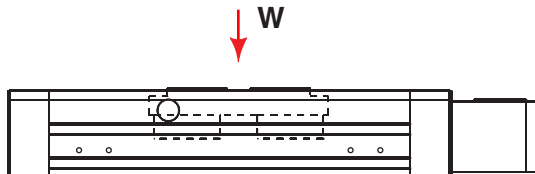
Mounting brackets (or tapped base holes see page F-7) are required in order to install the 610 onto a horizontal or vertical surface. Two bracket styles allow for ease of installation. The horizontal bracket uses the 610 extrusion slot on both sides to rigidly hold the unit. The vertical bracket uses drilled & tapped holes on the extrusion body on both sides. This provides a fixed and safer means of holding the unit when installed vertically.

Horizontal Mount Bracket (part # 208777)	Vertical Mount Bracket (part # 212790)
<p>Material Aluminum</p>	<p>Material Aluminum</p>
<p>Weight 0.40 lbs (0.18 kgf)</p>	<p>Weight 0.09 lbs (0.04 kgf)</p>

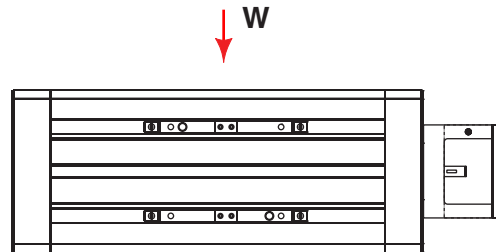
Moment of Inertia Values

The "moment of inertia" of an object is a gauge of the strength of that object to resist deflecting when used in an application or orientation where deflection might occur. The higher an I value relates to a lower amount of deflection.

$I = 3.75 \text{ in}^4 \text{ (} 15.60 \times 10^5 \text{ mm}^4 \text{)}$



$I = 23.84 \text{ in}^4 \text{ (} 99.23 \times 10^5 \text{ mm}^4 \text{)}$



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