MTB SERIES

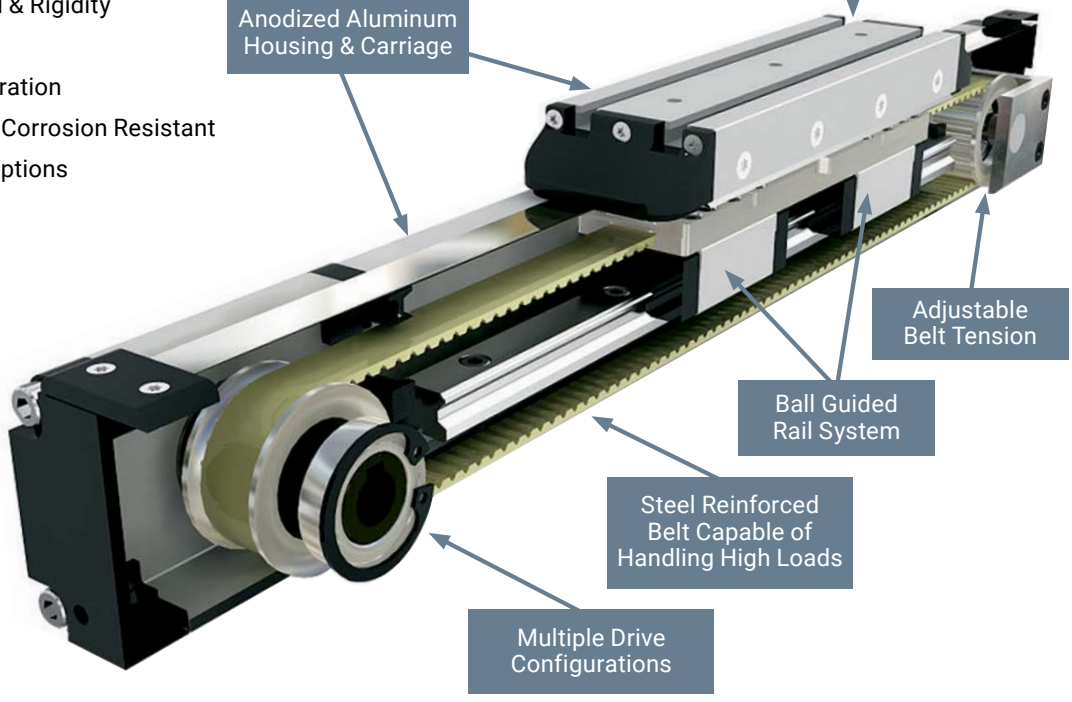
Belt Driven Linear Actuators

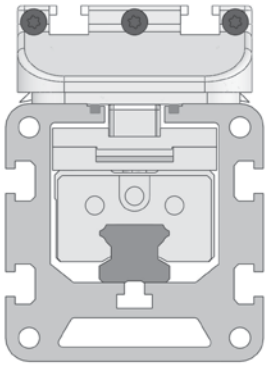
MT 105, 080, 055, 042

The MT Series offers a number of profile sizes with multiple design configurations to fit almost any application.

Features and Benefits

- High Acceleration, Speed & Rigidity
- Long Travel Length
- Low Friction, Noise & Vibration
- Strong yet Lightweight & Corrosion Resistant
- Multiple Accessories & Options

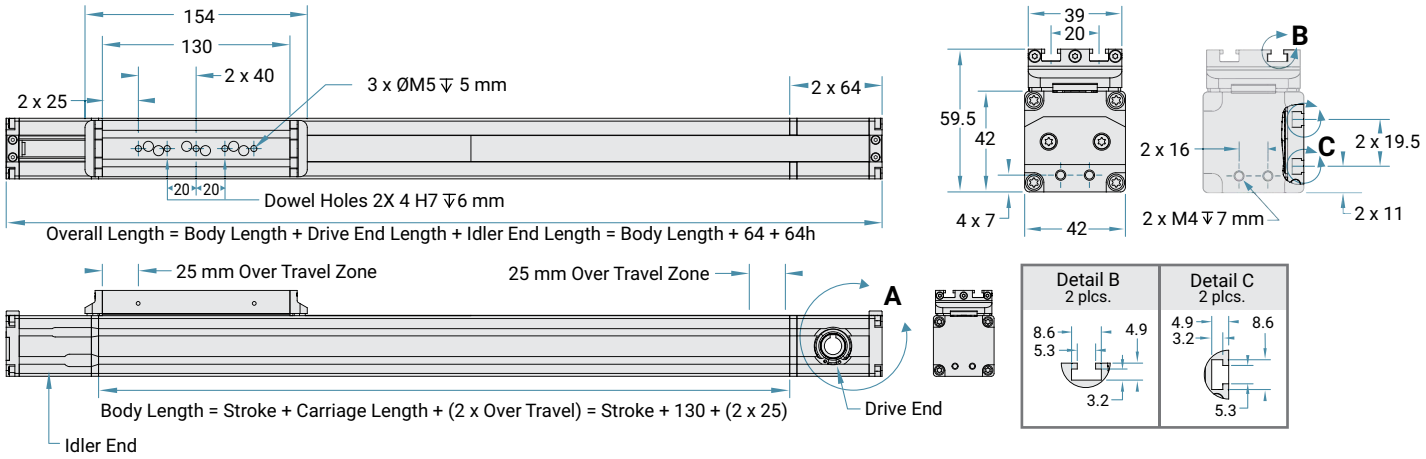




NOTE:

1. Moment arms for calculating moments should be measured from the centerline of the extrusion.
2. Limit switches must be used in order to prevent the carriage from contacting the actuator end blocks, resulting in damage.
3. 25 mm of over-travel has been added to the body length in each direction to allow for carriage over-travel. 25 mm is the recommended over-travel; although a minimum of 10 mm may be specified for special applications.

MTB042 Dimensional information

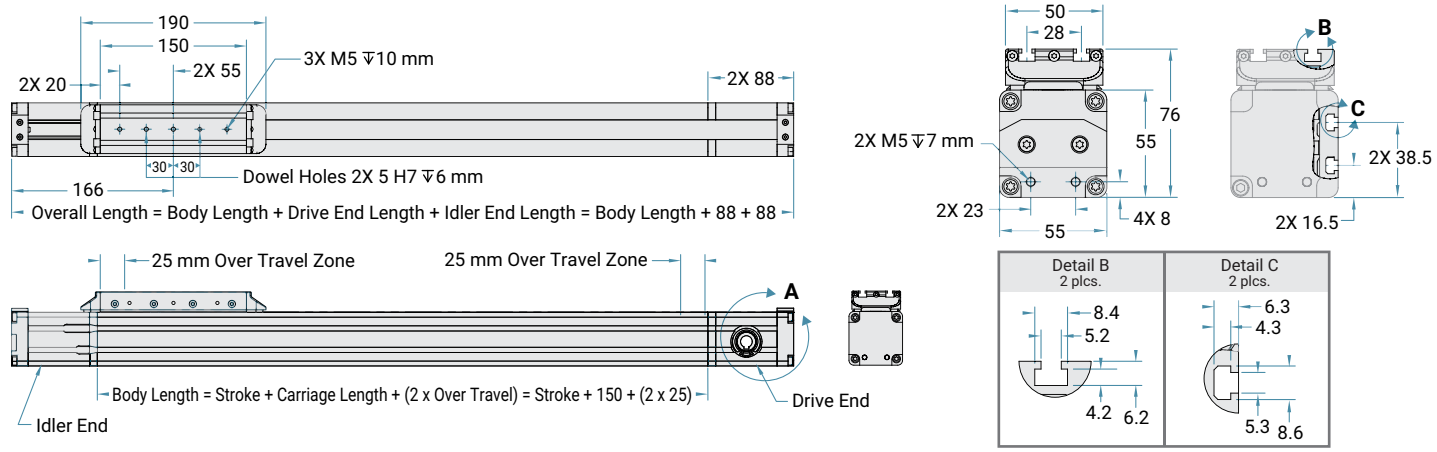


Ordering Information

Example: MTB-042D-1000-12B12

MTB	042	X	-	XXXX	-	XX	XX	-	X	-	X
Series	**Size mm (Base and Height)**	**System Type***		**Body Length****		**Shaft Diameter**	**Shaft Type**		**Carriage****		**Guidance Type**
MTB Belt Driven Unit	42 x 42	D = Driven N = Undriven		2,000 mm (max.) Must include 50 mm over-travel For lengths greater than 1,500 mm consult factory		00 = No shaft (undriven system) 10 = 10 mm 12 = 12 mm	F = Female hollow (10) L = Left Male (12) R = Right Male (12) B = Both Male (12) 0 = No shaft (undriven system) LW = Left Male w/o Keyway RW = Right Male w/o Keyway BW = Both Male w/o Keyway		1 Standard 2 3 4		2 = Profile rail w/2 runner blocks per carriage

MTB055 Dimensional information

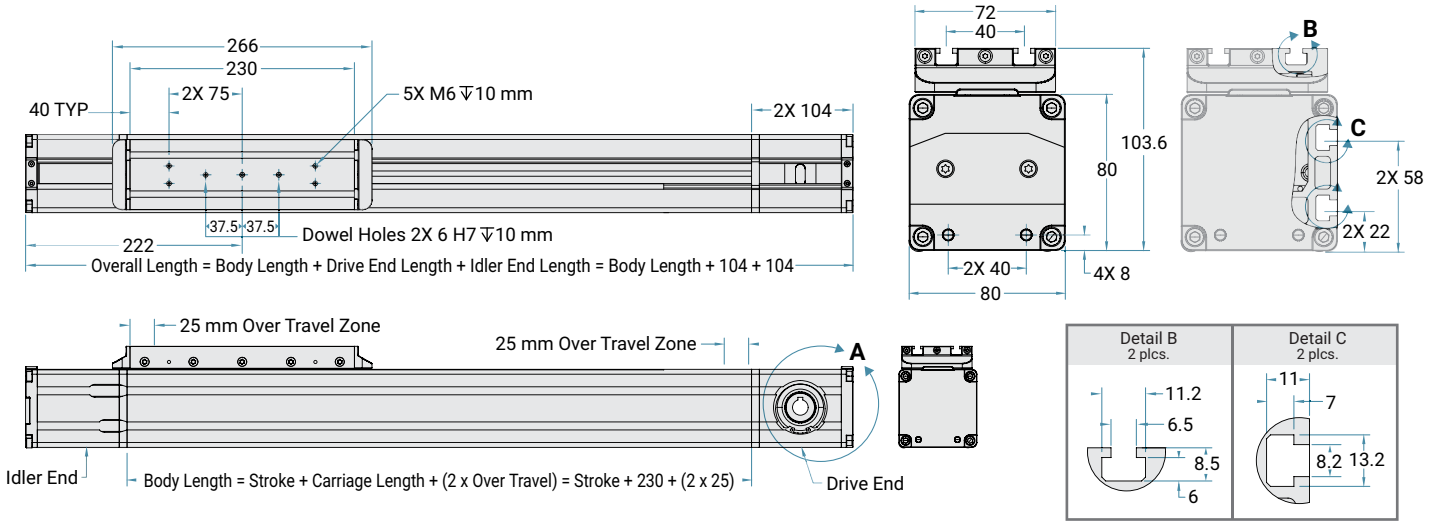


Ordering Information

Example: MTB-055D-1000-12F12

MTB	055	X	-	XXXX	-	XX	XX	-	X	-	X
Series	**Size mm (Base and Height)**	**System Type***		**Body Length****		**Shaft Diameter**	**Shaft Type**		**Carriage****		**Guidance Type**
MTB Belt Driven Unit	55 x 55	D = Driven N = Undriven		6,000 mm (max.) Must include 50 mm over-travel For lengths greater than 1,500 mm consult factory		00 = No shaft (undriven system) 12 = 12 mm 14 = 14 mm 16 = 16 mm	F = Female hollow (12, 14) L = Left Male (16) R = Right Male (16) B = Both Male (16) 0 = No shaft (undriven system) LW = Left Male w/o Keyway RW = Right Male w/o Keyway BW = Both Male w/o Keyway		1 Standard 2 3 4		2 = Profile rail w/2 runner blocks per carriage

MTB080 Dimensional information

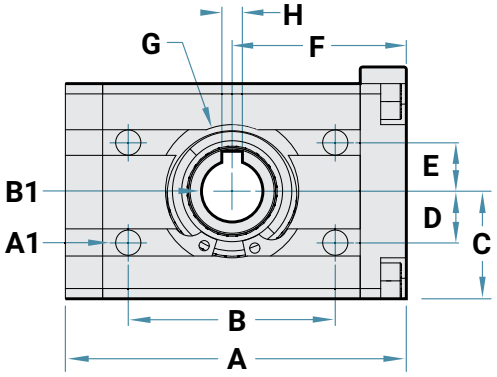


Ordering Information

Example: MTB-080D-1000-19F12

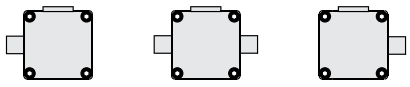
MTB	080	X	-	XXXX	-	XX	XX	-	X	-	X
Series	**Size mm (Base and Height)**	**System Type***		**Body Length****		**Shaft Diameter**	**Shaft Type**		**Carriage****		**Guidance Type**
MTB Belt Driven Unit	80 x 80	D = Driven		6,000 mm (max.) Must include 50 mm over-travel For lengths greater than 1,500 mm consult factory		16 = 16 mm 19 = 19 mm	F = Female hollow (16,19) L = Left Male (19) R = Right Male (19) B = Both Male (19) LW = Left Male w/o Keyway RW = Right Male w/o Keyway BW = Both Male w/o Keyway		1 Standard 2 3 4		2 = Profile rail w/2 runner blocks per carriage

Detail A - Drive End



MTB Size	A mm	B MAX	C mm	D mm	E mm	F mm	G
MTB 42	64	42	21	10	9.5	34	2 x Ø30 H7↧1.5 mm
MTB 55	88	55	25	8.5	13.5	48.5	2 x Ø32 H7↧1.5 mm
MTB 80	104	71	41	19	17	54	2 x Ø55 H7↧2 mm

Male Shaft Type Options:
As viewed from drive end with carriage on top



MTB Size	Male Input Shaft Size	A1 Square Nut Included	B1 Female mm	B1 Male mm	H Female Bore Dia.	H Keyway Width
MTB 42	12H7 +0.018/-0 Dia. X 18 mm length	M5 DIN526	Ø 10	Ø 12	10H7 -0/+0.018	3N9 -0.004/-0.029
MTB 55	16H7 +0.018/-0 Dia. X 18.5 mm length	M5 NIN557	Ø 12 Ø 14	Ø 16	12H7 -0/+0.018 14H7 -0/+0.018	4N9 -0.030/+0 5N9 -0.030/+0
MTB 80	19H7 +0.021/-0 Dia. X 30 mm length	M8 DIN557	Ø 16 Ø 19	Ø 19	16H7 -0/+0.018 19H7 -0/+0.018	5N9 -0.030/+0 6N9 -0.030/+0

* No belt or motor mount, contact manufacturer for "N" version.
** Contact manufacturer for other options and availability.
Profile rail will be segmented for lengths over 1 m.

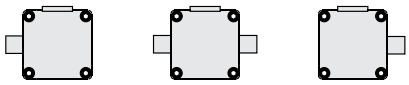
MTB105

Belt Driven Linear Actuators

Ordering Information

MTB	105	X	-	XXXX	-	XX	XX	-	X	-	X
Series	**Size mm (Base and Height)**	**System Type***		**Body Length****		**Shaft Diameter**	**Shaft Type**		**Carriage****		**Guidance Type**
MTB Belt Driven Unit	105 x 105	D = Driven		6,000 mm (max.) Must include 50 mm over-travel For lengths greater than 1,500 mm consult factory		22 = 22 mm 25 = 25 mm	F = Female hollow (22,25) L = Left Male (25) R = Right Male (25) B = Both Male (25) LW = Left Male w/o Keyway RW = Right Male w/o Keyway BW = Both Male w/o Keyway		1 Standard 2 3 4		2 = Profile rail w/2 runner blocks per carriage

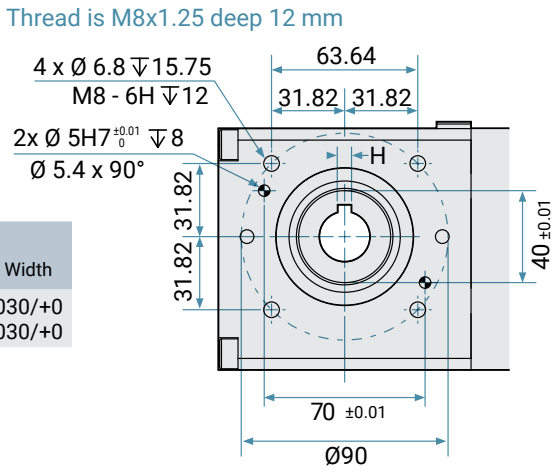
Male Shaft Type Options:
As viewed from drive end with carriage on top



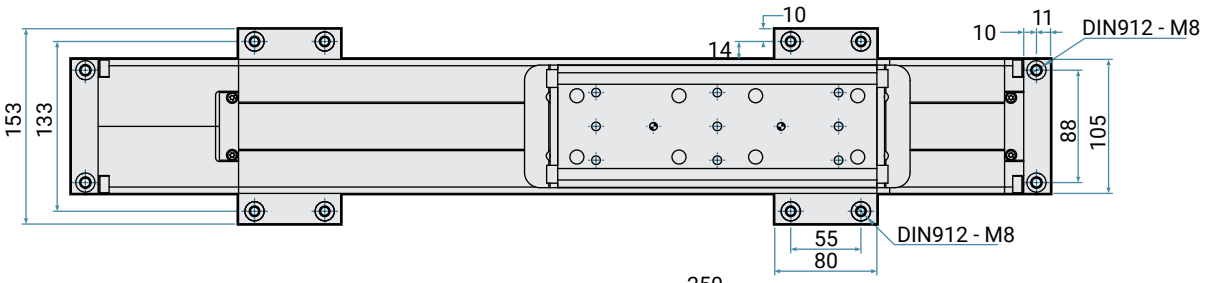
Left Mount Dual Mount Right Mount

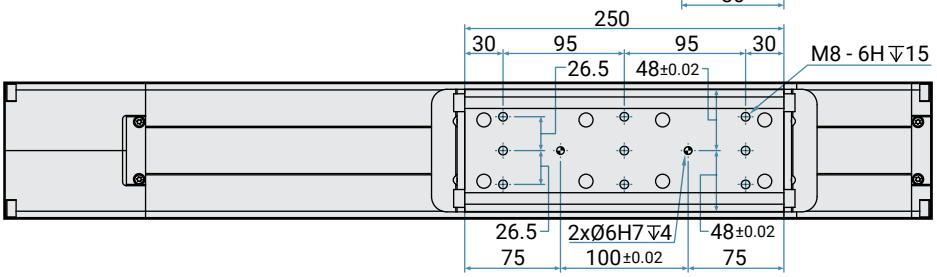
MTB Size	Male Input Shaft Size	Female mm	Male mm	H	
				Female Bore Dia.	Keyway Width
MTB 105	25H7 +0.021/-0 Dia. X 37.5 mm length	Ø 22 Ø 25	Ø 25	22H7 -0/+0.021 25H7 -0/+0.021	6N9 -0.030/+0 8N9 -0.030/+0

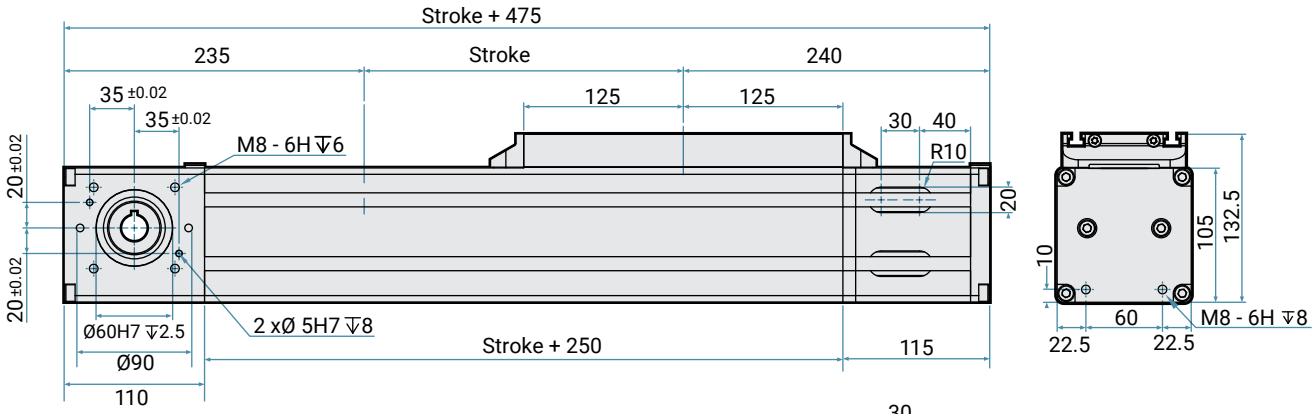
* No belt or motor mount, contact manufacturer for "N" version.
** Contact manufacturer for other options and availability.
Profile rail will be segmented for lengths over 1 m.

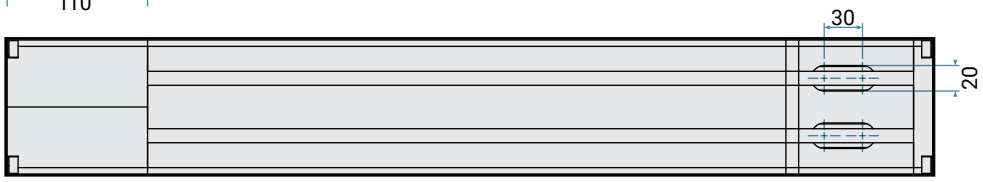


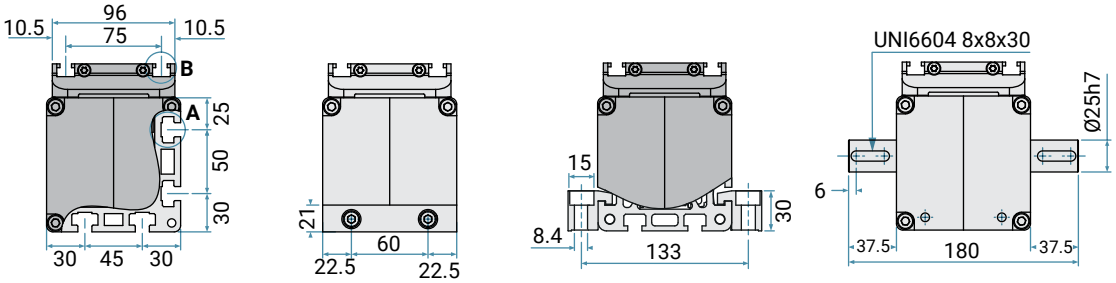
MTB 105 Dimensional information



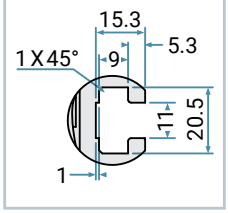




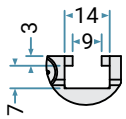




View A



View B

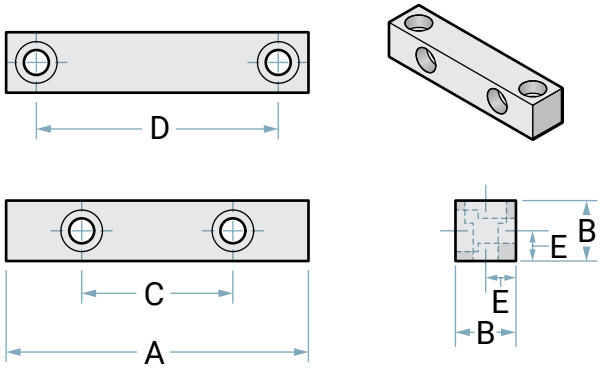


MTB ACCESSORIES

Two styles of clamps are available for the MT series actuators. The end mount style clamps fix the MT actuator to the base plate via the end blocks. The mid mount style clamps fix the MT actuator to the base plate via the side t-slots with T-nuts.

Accessories (Available upon request.)

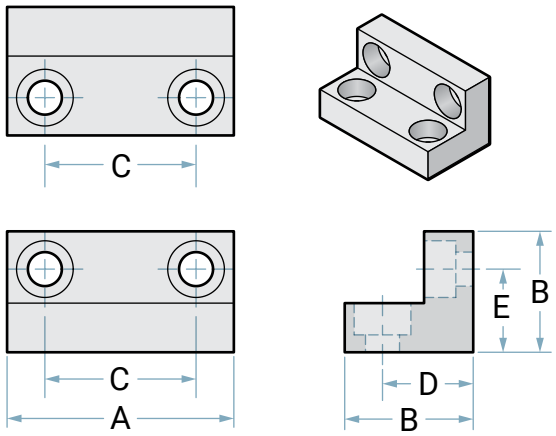
End Cap
Mounting Bracket



End Mount Style Clamp

MTB Size	Part Number	A mm	B mm	C mm	D mm	E mm	Screw	Torque	Tool
MTB 42	MTB042A-A0AA001-KIT	42	14	16	30	7	M4 SHCS	2.8 N-m(25 in-ob)	3 mm hex wrench
MTB 55	MTB055A-A1AA001-KIT	55	15	23	41	7.5	M5 SHCS	5.7 N-m (50 in-lb)	4 mm hex wrench
MTB 80	MTB080A-A2AA001-KIT	80	16	40	64	8	M6 SHCS	6.8 N-m (60 in-lb)	5 mm hex wrench
MTB 105	MTB105A-A3AA001-KIT	105	21	60	88	10	M8 SHCS		

Mid Section
Mounting Bracket

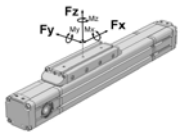


Mid Mount Style Clamp

MTB Size	Part Number	A mm	B mm	C mm	D mm	E mm	Screw	Torque	Tool
MTB 42	MTB042A-A0AA002-KIT	40	17	25	10.5	11	M4 SHCS	2.8 N-m(25 in-ob)	3 mm hex wrench
MTB 55	MTB055A-A1AA002-KIT	50	23	30	16.5	16.5	M5 SHCS	5.7 N-m (50 in-lb)	4 mm hex wrench
MTB 80	MTB080A-A2AA002-KIT	60	32	40	24	22	M6 SHCS	8.5 N-m (60 in-lb)	6 mm hex wrench
MTB 105	MTB105A-A3AA002-KIT	80	30	55	15	10	M8 SHCS		

Technical Data

Size		mm / in		42 x 42 (1.65 x 1.65)		55 x 55 (2.17 x 2.17)		80 x 80 (3.15 x 3.15)		105 x 105 (4.13 x 4.13)	
Max. Speed		m/s	in/s	3	118.11	3	118.11	3	118.11	3	118.11
Max. Stroke Length		mm	in	2000	78.74	6000	236.22	6000	236.22	6000	236.22
Min. Stroke Length		mm	in	100	3.94	100	3.94	100	3.94	100	3.94
Pulley Drive Ratio		mm	in	90	3.54	120	4.72	160	6.30	210	8.27
Number of Pulley Teeth				18		24		32		21	
MAX RPM				2,000		1,500		1,125		850	
Base Weight		Kg	lb	1.60	3.53	4.80	10.58	6.00	13.23	12.50	27.56
Add for 100 mm or 3.94 in of Stroke		Kg	lb	0.25	0.55	0.37	0.816	0.90	1.98	1.50	3.31
Max. Load	Fx	N	lbf	460	103	820	184	1650	370.93	2750	618.22
	Fy	N	lbf	1560	351	1850	416	4500	1,011.64	7500	1,686.07
	Fz	N	lbf	1560	351	1850	416	4500	1,011.64	7500	1,686.07
Max. Moments	Mx	Nm	lbf-in	20	177	25	221	80	708	120	1,062.10
	My	Nm	lbf-in	55	487	120	1,062	450	3,983	700	6,195.52
	Mz	Nm	lbf-in	55	487	120	1,062	450	3,983	700	6,195.52
Moment of Inertia	Ix	cm^4	in^4	12	0.29	36	0.86	183	4.39	440	10.571
	Iy	cm^4	in^4	15	0.36	45	1.08	226	5.42	535	12.853
Max. Radial Load on Input Shaft		N	lbf	220	49.5	300	67.4	300	67.4	400	89.92
No Load Torque		Nm	lbf-in	0.8	7.1	1	8.9	1.1	9.7	0.8	7.1



For combined loads, the combined loading cannot exceed the following formula.

$$\frac{Fy_A}{Fy}+\frac{Fz_A}{Fz}+\frac{Mx_A}{Mx}+\frac{My_A}{My}+\frac{Mz_A}{Mz}<=1$$

End Mount Style Clamp

MTB Size	Part Number	Screw
MTB042	MTB042A-A0AA001-KIT	M4 SHCS
MTB055	MTB055A-A1AA001-KIT	M5 SHCS
MTB080	MTB080A-A2AA001-KIT	M6 SHCS
MTB105	MTB105A-A3AA001-KIT	M8 SHCS

Mid Mount Style Clamp

MTB Size	Part Number	Screw
MTB042	MTB042A-A0AA002-KIT	M4 SHCS
MTB055	MTB055A-A1AA002-KIT	M5 SHCS
MTB080	MTB080A-A2AA002-KIT	M6 SHCS
MTB105	MTB105A-A3AA002-KIT	M8 SHCS

PBC Linear

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