

MT Series

MTB 42 BELT DRIVEN LINEAR ACTUATOR



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

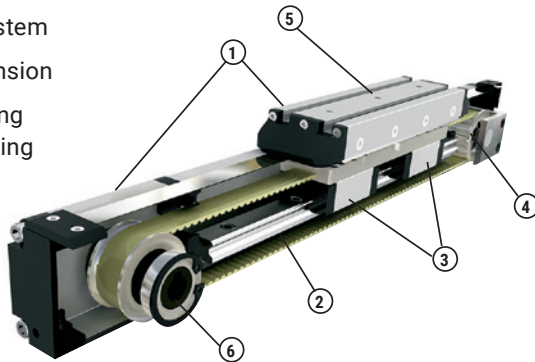


FEATURES & BENEFITS

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

KEY FEATURES

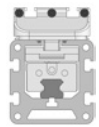
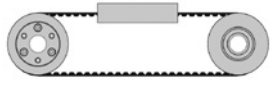
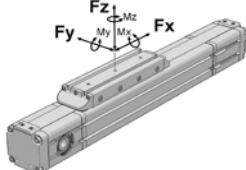
- 1 – Anodized aluminum housing and carriage
- 2 – Steel reinforced belt capable of handling high loads
- 3 – Ball guided rail system
- 4 – Adjustable belt tension
- 5 – T-slots for mounting and sensor mounting
- 6 – Multiple drive configurations



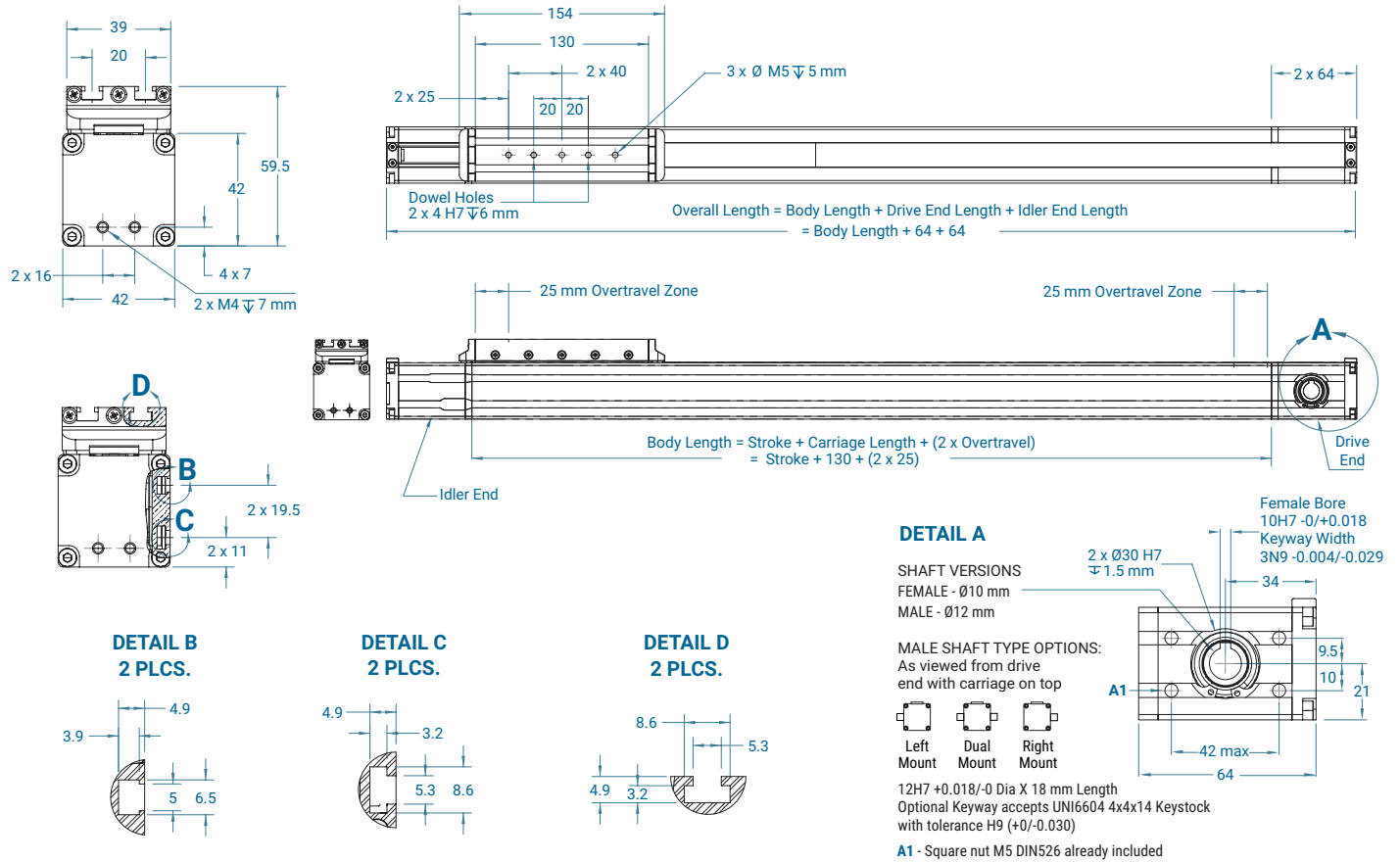
NOTE:

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.

TECHNICAL DATA

					
Size	mm	42 x 42	in	1.65 x 1.65	
Max. Speed	m/s	3	in/s	118.11	
Max. Stroke Length	mm	2,000	in	78.74	
Min. Stroke Length	mm	100	in	3.94	
Pulley Drive Ratio	mm	90	in	3.54	
Number of Pulley Teeth	18				
Max RPM	2,000				
Base Weight	Kg	1.6	lb	3.53	
Add for 100 mm or 3.94 in of Stroke	Kg	0.25	lb	0.55	
Max. Load	F_x	N	460	lbf	103
	F_y	N	1,560	lbf	351
	F_z	N	1,560	lbf	351
Max. Moments	M_x	Nm	20	lbf-in	177
	M_y	Nm	55	lbf-in	487
	M_z	Nm	55	lbf-in	487
Moment of Inertia	I_x	cm ⁴	12	in ⁴	0.29
	I_y	cm ⁴	15	in ⁴	0.36
Max. Radial Load on Input Shaft	N	220	lbf	49.5	
No Load Torque	Nm	0.8	lbf-in	7.1	
Repeatability	±0.05 mm				
	<p><i>For combined loads, the combined loading cannot exceed the following formula.</i></p> $\frac{F_{yA}}{F_y} + \frac{F_{zA}}{F_z} + \frac{M_{xA}}{M_x} + \frac{M_{yA}}{M_y} + \frac{M_{zA}}{M_z} \leq 1$				

DIMENSIONAL INFORMATION

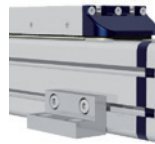


ACCESSORIES (Available upon request.)



End Cap Mounting Bracket
MTB042A-A0AA001
MTB042A-A0AA001-Kit

MTB042A-A0AA001-Kit Includes:
(2 PCS) MTB042A-A0AA001 Bracket
(4 PCS) M4 X 16 mm SHCS
(Secondary Support - Do Not Use Alone)



Mid Section Mounting Bracket
MTB042A-A0AA002
MTB042A-A0AA002-Kit

MTB042A-A0AA002-Kit Includes:
(2 PCS) MTB042A-A0AA002 Bracket
(4 PCS) M5 X 8 mm SHCS
(4 PCS) M5 T-Nut

Sq Nut & T-Nut Accessories for Details B, C & D
6100504 Sq Nut M5 X 0.8

For Detail C
6100443 T-Nut M5 X 0.8

ORDERING INFORMATION

Example: MTB-042D-1000-12B12

MTB	042	X	XXXX	XX	XX	X	X
Series	Size (mm) (Base x Height)	System Type*	Body Length**	Shaft Diameter	Shaft Type	# Carriage**	Guidance Type
MTB Belt Driven Unit	42 mm x 42 mm	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) O = 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

* 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.

Common Drive Combinations

12B - 40% 12F - 20% 12R - 20% 12L - 10% 10F - 10%

Product information and 2D/3D CAD drawings available for download at www.pbclinear.com
For technical & application information call 1-888-962-8979.

The data and specifications in this publication have been carefully compiled and are believed to be accurate and correct. However, it is the responsibility of the user to determine and ensure the suitability of PBC Linear® products for a specific application. PBC Linear® only obligation will be to repair or replace without charge, any defective components if returned promptly. No liability is assumed beyond such replacement. Specifications are subject to change without notice.

LITMTB042-001 [9-2018]

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MT Series

MTB 55 BELT DRIVEN LINEAR ACTUATOR



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

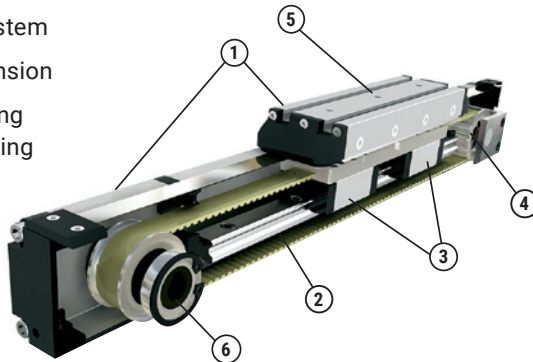


FEATURES & BENEFITS

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

KEY FEATURES

- 1 – Anodized aluminum housing and carriage
- 2 – Steel reinforced belt capable of handling high loads
- 3 – Ball guided rail system
- 4 – Adjustable belt tension
- 5 – T-slots for mounting and sensor mounting
- 6 – Multiple drive configurations

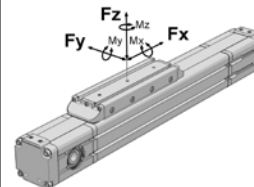


NOTE:

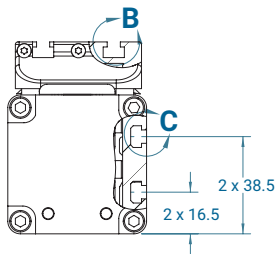
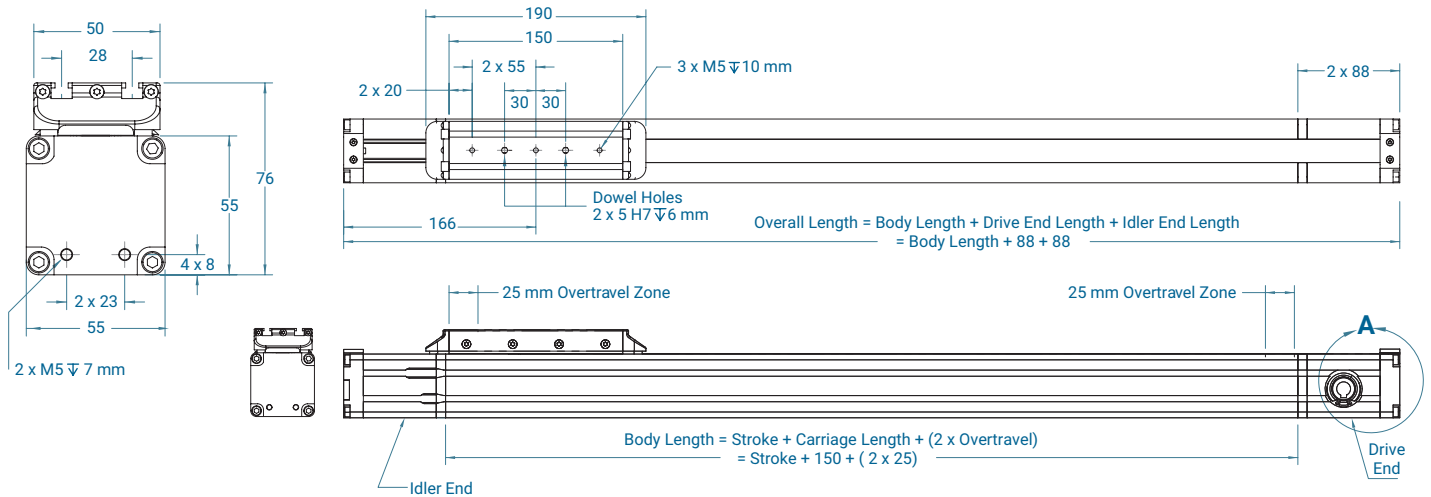
1. Moment arms for calculating moments should be measured from the centerline of the extrusion.
2. Limit switches must be used in order to prevent the carriage from contacting the actuator end blocks, resulting in damage.
3. 25 mm of over-travel has been added to the body length in each direction to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

TECHNICAL DATA

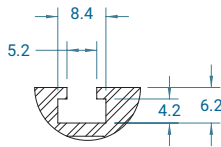
		mm		in	
Size		55 x 55		2.17 x 2.17	
Max. Speed	m/s	3	in/s	118.11	
Max. Stroke Length	mm	6,000	in	236.22	
Min. Stroke Length	mm	100	in	3.94	
Pulley Drive Ratio	mm	120	in	4.72	
Number of Pulley Teeth		24			
Max RPM		1,500			
Base Weight	Kg	4.8	lb	10.58	
Add for 100 mm or 3.94 in of Stroke	Kg	0.37	lb	0.816	
Max. Load	F_x	N	820	lbf	184
	F_y	N	1,850	lbf	416
	F_z	N	1,850	lbf	416
Max. Moments	M_x	Nm	25	lbf-in	221
	M_y	Nm	120	lbf-in	1,062
	M_z	Nm	120	lbf-in	1,062
Moment of Inertia	I_x	cm ⁴	36	in ⁴	0.86
	I_y	cm ⁴	45	in ⁴	1.08
Max. Radial Load on Input Shaft	N	300	lbf	67.4	
No Load Torque	Nm	1	lbf-in	8.9	
Repeatability		+/-0.05 mm			
		<p>For combined loads, the combined loading cannot exceed the following formula.</p> $\frac{F_{yA}}{F_y} + \frac{F_{zA}}{F_z} + \frac{M_{xA}}{M_x} + \frac{M_{yA}}{M_y} + \frac{M_{zA}}{M_z} \leq 1$			



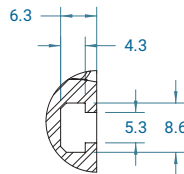
DIMENSIONAL INFORMATION



DETAIL B
2 PLCS.



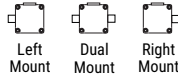
DETAIL C
4 PLCS.



DETAIL A

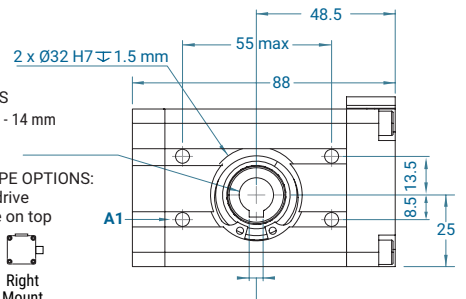
SHAFT VERSIONS
FEMALE - \varnothing 12 mm - 14 mm
MALE - \varnothing 16 mm

MALE SHAFT TYPE OPTIONS:
As viewed from drive end with carriage on top



16H7 +0.018/-0 DIA X 18.5 mm Length
Optional Keyway accepts UNI6604 5x5x20
Keystock with tolerance H9 (+0/-0.030)

A1 - Square nut M5 DIN557 already included



Female Bore & Keyway Width
12H7 -0/+0.018 Dia Bore with
4N9 -0.030/+0 Keyway Width
14H7 -0/+0.018 Dia Bore with
5N9 -0.030/+0 Keyway Width

ACCESSORIES (Available upon request.)



End Cap Mounting Bracket
MTB055A-A1AA001
MTB055A-A1AA001-Kit

MTB055A-A1AA001-Kit Includes:
(2 PCS) MTB055A-A1AA001 Bracket
(4 PCS) M5 X 16MM SHCS
(Secondary Support - Do Not Use Alone)



Mid Section Mounting Bracket
MTB055A-A1AA002
MTB055A-A1AA002-Kit

MTB055A-A1AA002-Kit Includes:
(2 PCS) MTB055A-A1AA002 Bracket
(4 PCS) M5 X 10MM SHCS
(4 PCS) M5 T-NUT

Sq Nut & T-Nut Accessories for Detail B
6100445 SQ NUT M5 X 0.8

For Detail C
6100443 T-NUT M5 X 0.8

ORDERING INFORMATION

Example: MTB-055D-1000-12F12

MTB	055	X	XXXX	XX	XX	X	X
Series	Size (mm) (Base x Height)	System Type*	Body Length**	Shaft Diameter	Shaft Type	# Carriage**	Guidance Type
MTB Belt Driven Unit	55 mm x 55 mm	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) O = 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

* 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.

Common Drive Combinations

12F - 40% 14F - 20% 16L - 10% 16B - 20% 16R - 10%

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LITMTB055-001 [9-2018]



MT Series

MTB 80 BELT DRIVEN LINEAR ACTUATOR



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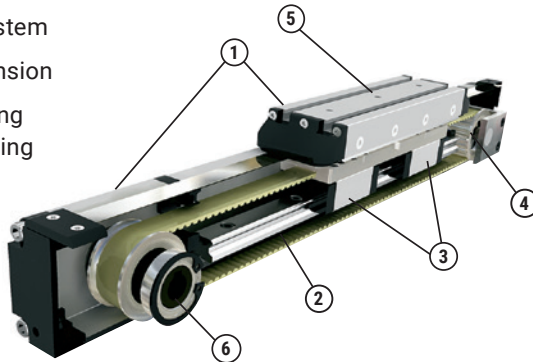


FEATURES & BENEFITS

- High Acceleration, Speed & Rigidity
- Long Travel Length
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KEY FEATURES

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- 6 – Multiple drive configurations



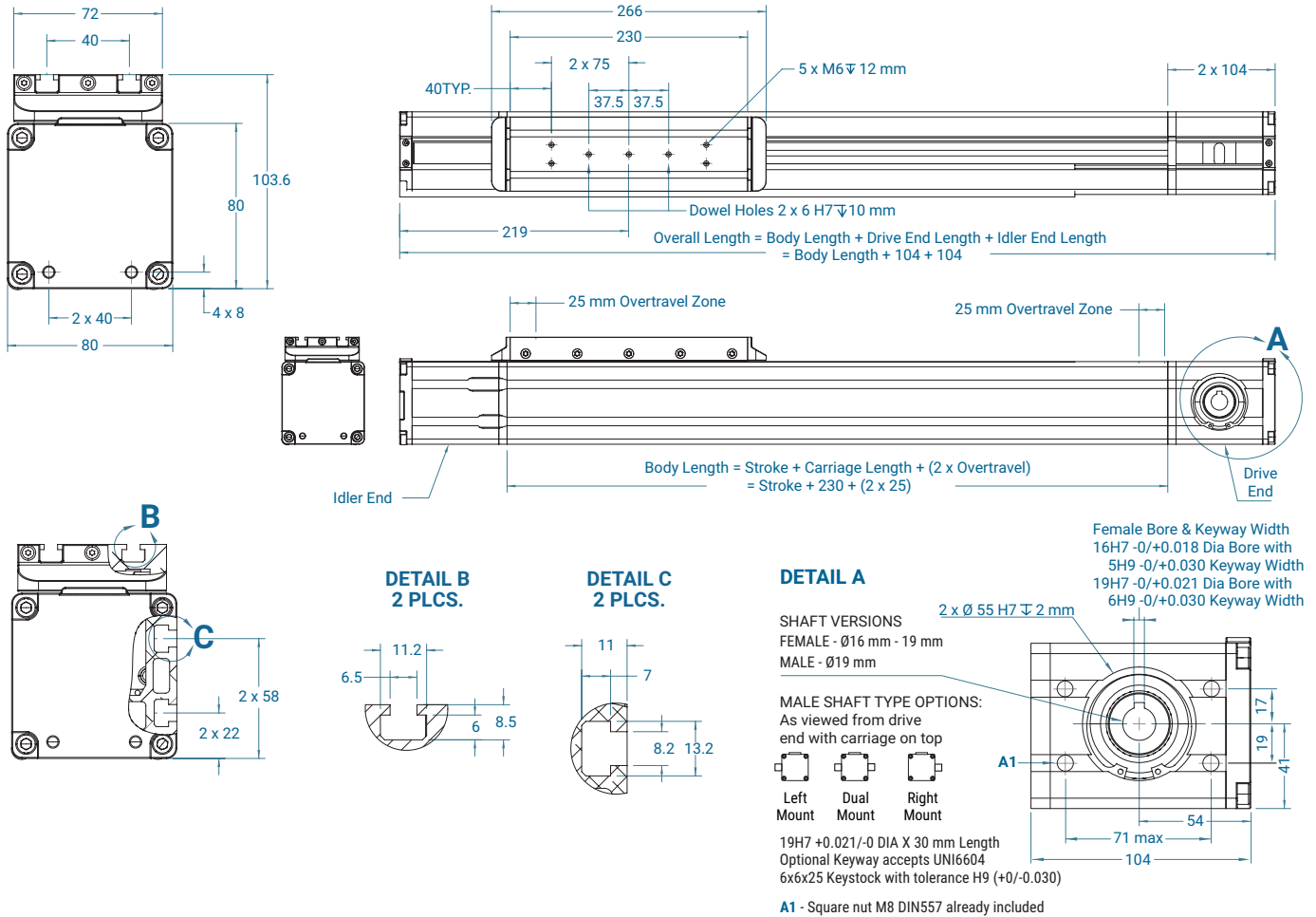
NOTE:

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.

TECHNICAL DATA

Size		mm	80 x 80	in	3.15 x 3.15
Max. Speed		m/s	3	in/s	118.11
Max. Stroke Length		mm	6,000	in	236.22
Min. Stroke Length		mm	100	in	3.94
Pulley Drive Ratio		mm	160	in	6.30
Number of Pulley Teeth		32			
Max RPM		1,125			
Base Weight		Kg	6.0	lb	13.23
Add for 100 mm or 3.94 in of Stroke		Kg	0.90	lb	1.98
Max. Load	F_x	N	1,650	lbf	370.93
	F_y	N	4,500	lbf	1011.64
	F_z	N	4,500	lbf	1011.64
Max. Moments	M_x	Nm	80	lbf-in	708
	M_y	Nm	450	lbf-in	3,983
	M_z	Nm	450	lbf-in	3,983
Moment of Inertia	I_x	cm ⁴	183	in ⁴	4.39
	I_y	cm ⁴	226	in ⁴	5.42
Max. Radial Load on Input Shaft		N	300	lbf	67.4
No Load Torque		Nm	1.1	lbf-in	9.7
Repeatability		+/-0.05 mm			
		<p>For combined loads, the combined loading cannot exceed the following formula.</p> $\frac{F_{yA}}{F_y} + \frac{F_{zA}}{F_z} + \frac{M_{xA}}{M_x} + \frac{M_{yA}}{M_y} + \frac{M_{zA}}{M_z} \leq 1$			

DIMENSIONAL INFORMATION

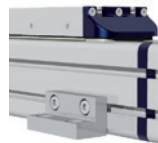


ACCESSORIES (Available upon request.)



End Cap Mounting Bracket
 MTB080A-A2AA001
 MTB080A-A2AA001-Kit

MTB080A-A2AA001-Kit Includes:
 (2 PCS) MTB080A-A2AA001 Bracket
 (4 PCS) M6 X 16MM SHCS
 (Secondary Support - Do Not Use Alone)



Mid Section Mounting Bracket
 MTB080A-A2AA002
 MTB080A-A2AA002-Kit

MTB080A-A2AA002-Kit Includes:
 (2 PCS) MTB080A-A2AA002 Bracket
 (4 PCS) M8 X 16MM SHCS
 (4 PCS) M8 T-NUT

Sq Nut & T-Nut Accessories for Detail B
 6100649 SQ NUT M6 X 1.0
For Detail C
 6100436 T-NUT M8 X 1.25

ORDERING INFORMATION

Example: MTB-080D-1000-19F12

MTB	080	X	XXXX	XX	XX	X	X
Series	Size (mm) (Base x Height)	System Type*	Body Length**	Shaft Diameter	Shaft Type	# Carriage**	Guidance Type
MTB Belt Driven Unit	80 mm x 80 mm	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) 16 = 16 mm 19 = 19 mm	F = Female hollow (16, 19) L = Left Male (19) R = Right Male (19) B = Both Male (19) O = 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

* 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.

Common Drive Combinations

19F - 50% 19L - 20% 19R - 10% 19B - 10% 16F - 10%

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LITMTB080-001 [9-2018]

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