

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.

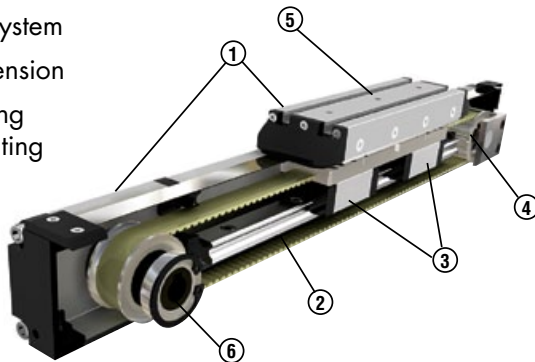


FEATURES & BENEFITS

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

KEY FEATURES

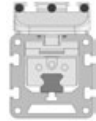

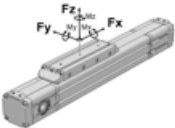
- 1- Anodized aluminum housing and carriage
- 2- Steel reinforced belt capable of handling high loads
- 3- Ball guided rail system
- 4- Adjustable belt tension
- 5- T-slots for mounting and sensor mounting
- 6- Multiple drive configurations



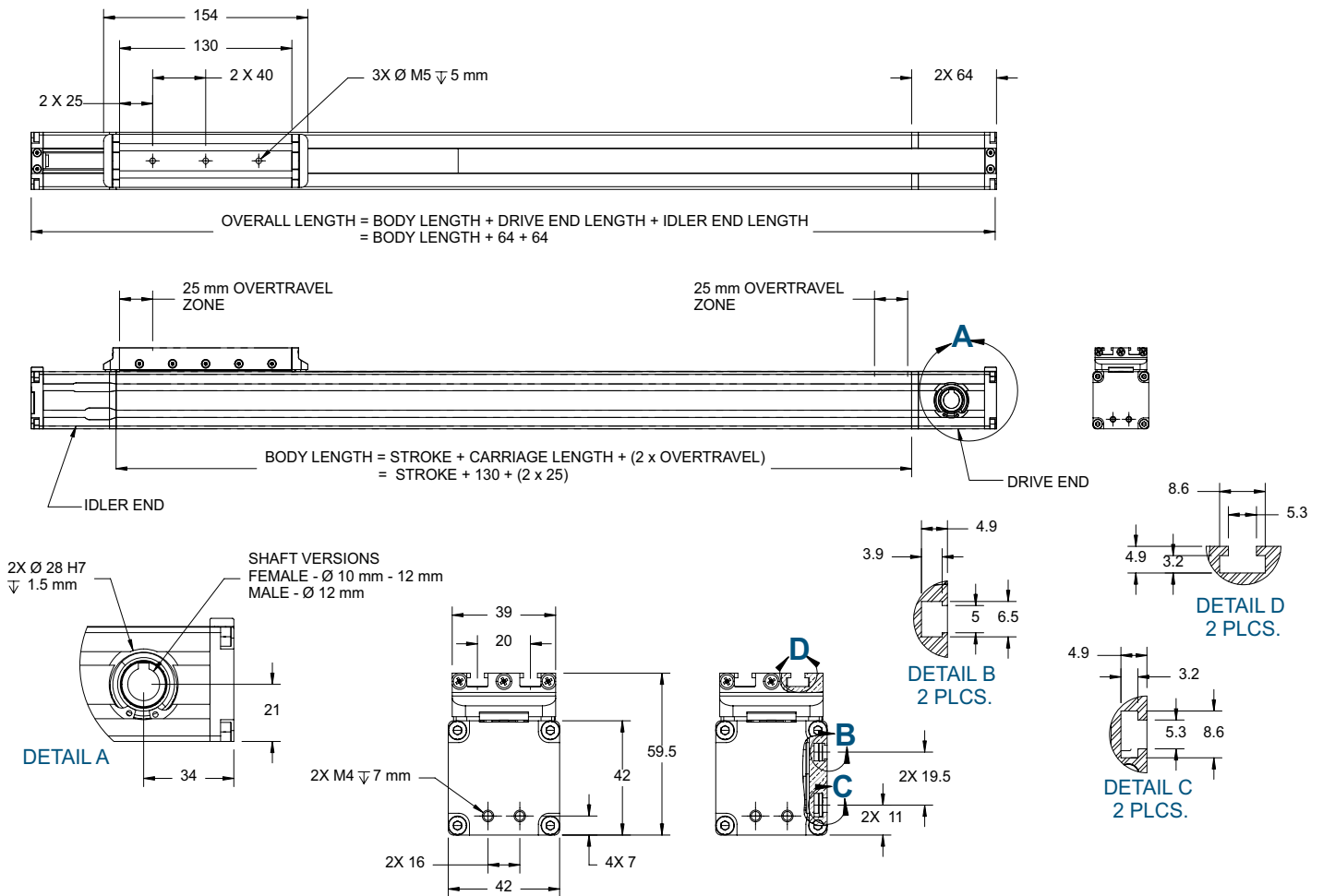
NOTE:

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.

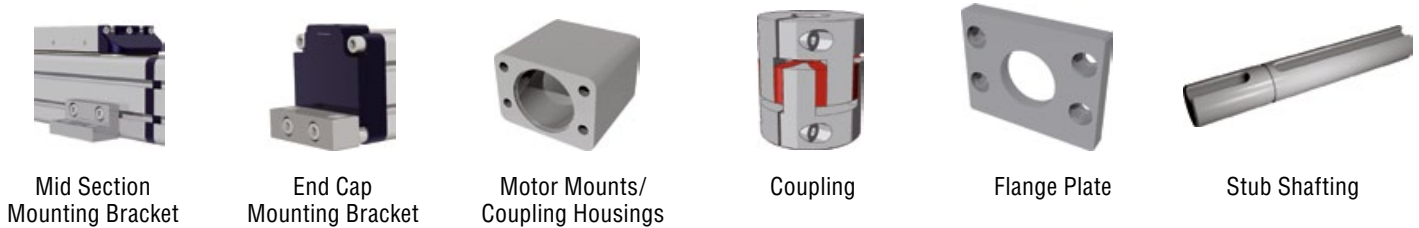
TECHNICAL DATA

					
Size	mm	42 x 42	in	1.65 x 1.65	
Max. Speed	m/s	5	in/s	196.85	
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	3,500				
Base Weight	Kg	0.784	lb	1.73	
Add for 100 mm or 3.94 in of Stroke	Kg	.291	lb	0.64	
Max. Load	Fx	N	460	lbf	103
	Fy	N	1,560	lbf	351
	Fz	N	1,560	lbf	351
Max. Moments	Mx	Nm	20	lbf-in	177
	My	Nm	55	lbf-in	487
	Mz	Nm	55	lbf-in	487
Moment of Inertia	Ix	cm ⁴	12	in ⁴	0.29
	Iy	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	
	<p>For combined loads, the combined loading cannot exceed the following formula.</p> $\frac{Fy_A}{Fy} + \frac{Fz_A}{Fz} + \frac{Mx_A}{Mx} + \frac{My_A}{My} + \frac{Mz_A}{Mz} \leq 1$				

DIMENSIONAL INFORMATION



ACCESSORIES (Available upon request.)



ORDERING INFORMATION

Example: MTB-042D-1000-12B12

MTB	042	X	XXXX	XX	X	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, 12) L = Left Male (12) R = Right Male (12) B = Both Male (12) 0 = No shaft (undriven system)	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% 12R - 20% 10F - 10%
 12F - 20% 12L - 10%

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

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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.

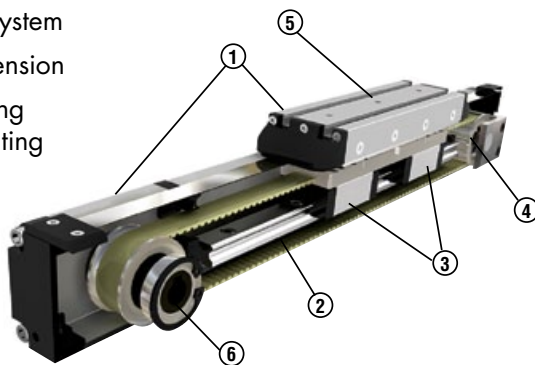


FEATURES & BENEFITS

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

KEY FEATURES

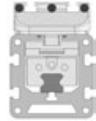

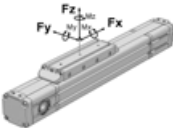
- 1- Anodized aluminum housing and carriage
- 2- Steel reinforced belt capable of handling high loads
- 3- Ball guided rail system
- 4- Adjustable belt tension
- 5- T-slots for mounting and sensor mounting
- 6- Multiple drive configurations



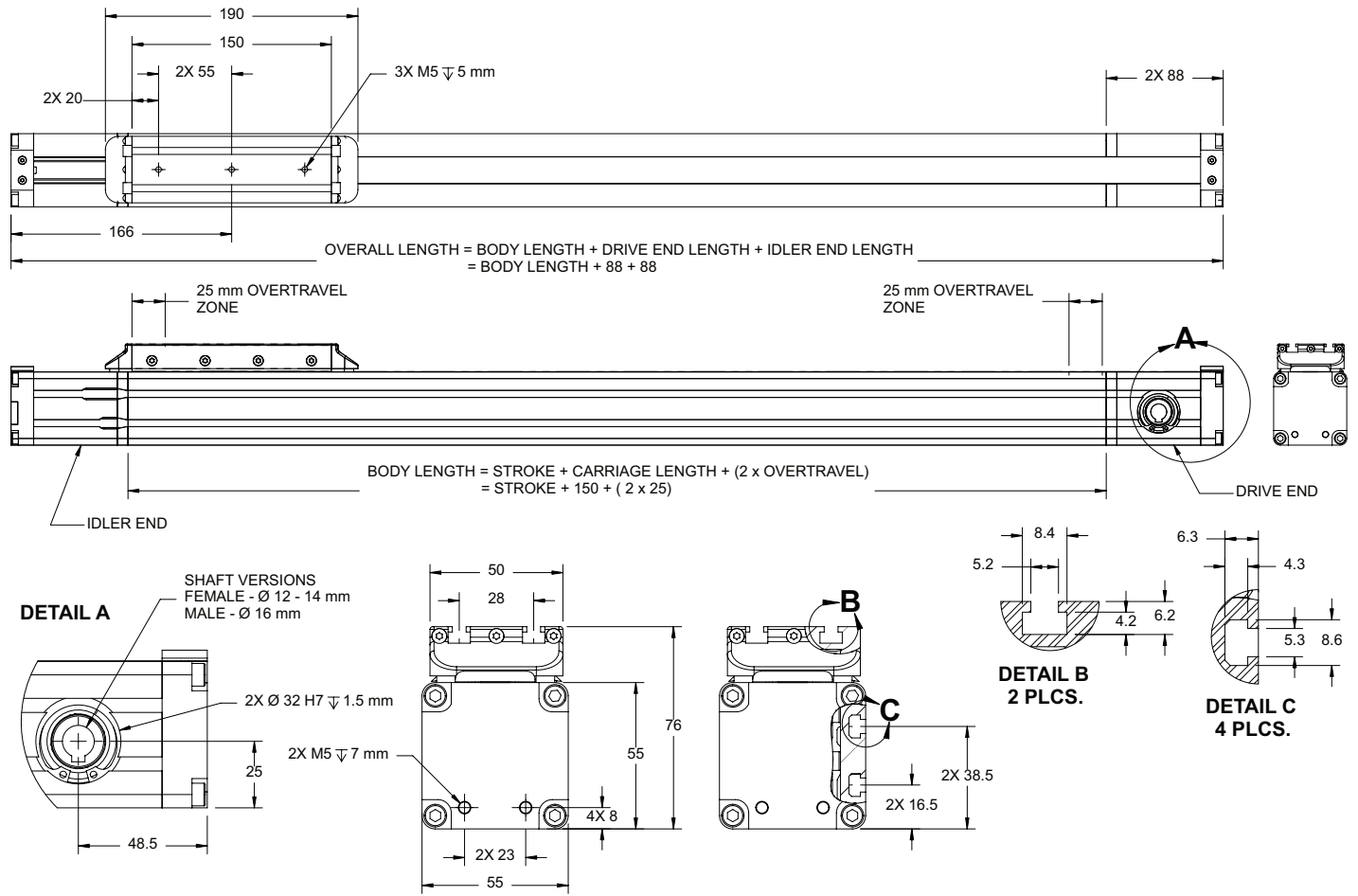
NOTE:

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.

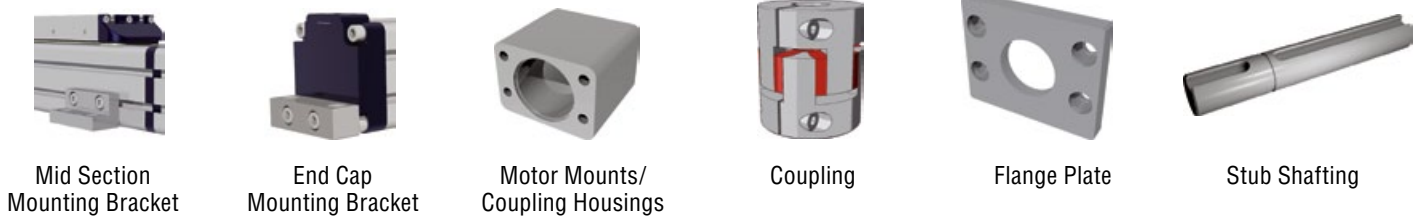
TECHNICAL DATA

					
Size	mm	55 x 55	in	2.17 x 2.17	
Max. Speed	m/s	5	in/s	196.85	
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	2,500				
Base Weight	Kg	1.905	lb	4.20	
Add for 100 mm or 3.94 in of Stroke	Kg	.476	lb	1.05	
Max. Load	Fx	N	820	lbf	184
	Fy	N	1,850	lbf	416
	Fz	N	1,850	lbf	416
Max. Moments	Mx	Nm	25	lbf-in	221
	My	Nm	120	lbf-in	1,062
	Mz	Nm	120	lbf-in	1,062
Moment of Inertia	Ix	cm ⁴	36	in ⁴	0.86
	Iy	cm ⁴	45	in ⁴	1.08
Max. Radial Load on Input Shaft	N	250	lbf	56.2	
No Load Torque	Nm	1	lbf-in	8.9	
	<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.)



ORDERING INFORMATION

Example: MTB-055D-1000-12F12

MTB	055	X	XXXX	XX	X	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) 0 = No shaft (undriven system)	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% 16B - 20% 16L - 10%
 14F - 20% 16R - 10%

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MT Series

MTB 80 BELT DRIVEN LINEAR ACTUATOR



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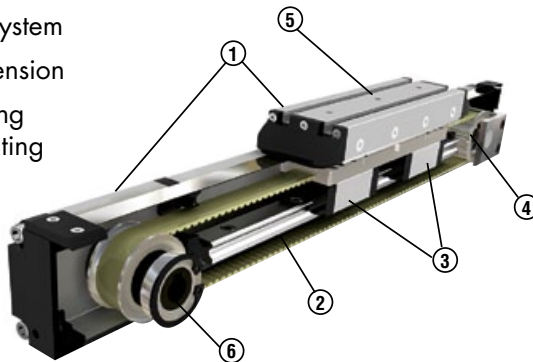


FEATURES & BENEFITS

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

- 1- Anodized aluminum housing and carriage
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- 6- Multiple drive configurations



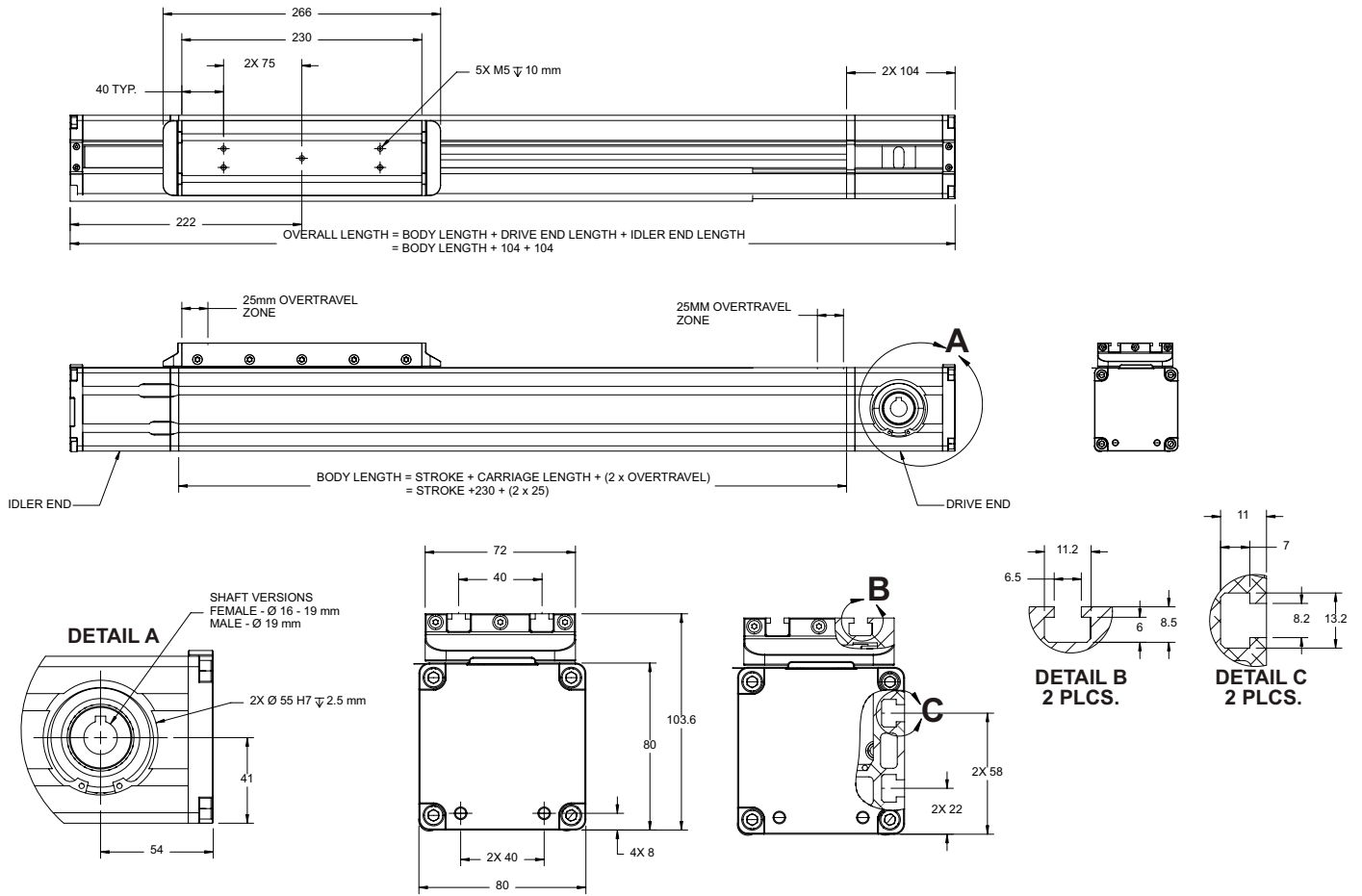
NOTE:

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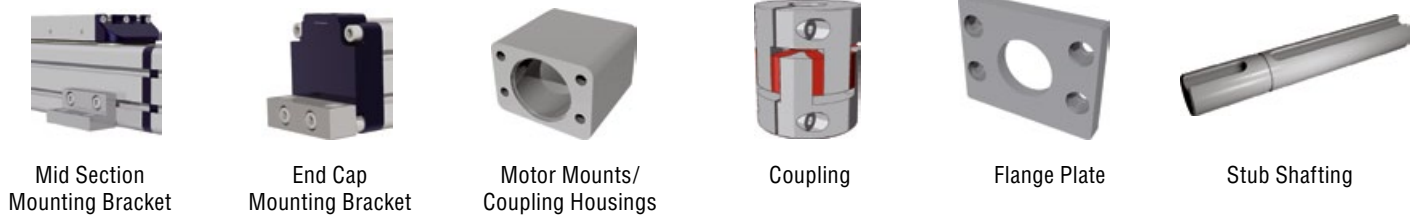
TECHNICAL DATA

		mm	80 x 80	in	3.15 x 3.15
Size		mm	80 x 80	in	3.15 x 3.15
Max. Speed		m/s	5	in/s	196.85
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		1,900			
Base Weight		Kg	4.394	lb	9.69
Add for 100 mm or 3.94 in of Stroke		Kg	.958	lb	2.11
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
		<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.)



ORDERING INFORMATION

Example: MTB-080D-1000-19F12

MTB	080	X	-	XXXX	-	XX	X	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) 0 = No shaft (undriven system)	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% 19R - 10% 16F - 10%
19L - 20% 19B - 10%

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