

# Size 51M–STA® Pull Tubular Solenoids — 13 mm Dia. x 27 mm

LINEAR Tubular

Part Number: 195222 - X XX

All products are RoHS Compliant

Coil AWG Number  
(from performance chart below)

Plunger Configurations and anti-rotation flat on mounting

- 1 Flat face plunger without anti-rotation flat
- 2 60° plunger without anti-rotation flat
- 5 Flat face plunger with anti-rotation flat
- 6 60° plunger with anti-rotation flat

## Performance

	100%	50%	25%	10%
Maximum Duty Cycle	100%	50%	25%	10%
Maximum ON Time (sec) when pulsed continuously <sup>1</sup>	∞	50	5	2
Maximum ON Time (sec) for single pulse <sup>2</sup>	∞	140	30	8
Watts (@ 20°C)	4	8	16	40
Ampere Turns (@ 20°C)	497	704	994	1573

### Coil Data

awg (0XX) <sup>3</sup>	Resistance (@20°C)	# Turns <sup>4</sup>	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
27	1.43	306	2.4	3.4	4.8	7.6
28	1.95	342	2.8	3.9	5.6	8.8
29	3.84	508	3.9	5.5	7.8	12.4
30	5.29	572	4.6	6.5	9.2	14.5
31	9.56	795	6.2	8.8	12.4	19.6
32	16.54	1068	8.1	11.5	16.3	25.7
33	22.60	1194	9.5	13.4	19.0	30.0
34	37.41	1547	12.2	17.3	24.0	39.0
35	60.71	1976	15.6	22.0	31.0	49.0
36	96.19	2475	19.6	28.0	39.0	62.0
37	141.93	3060	23.8	33.7	47.6	75.3

- <sup>1</sup> Continuously pulsed at stated watts and duty cycle
- <sup>2</sup> Single pulse at stated watts (with coil at ambient room temperature 20°C)
- <sup>3</sup> Other coil awg sizes available — please consult factory
- <sup>4</sup> Reference number of turns

## Specifications

Dielectric Strength	500 VRMS
Recommended Minimum Heat Sink	Maximum watts dissipated by solenoid are based on an unrestricted flow of air at 20°C, with solenoid mounted on the equivalent of an aluminium plate measuring 51 mm square by 3.2 mm thick
Coil Resistance	±5% tolerance
Holding Force	Flat Face: 5.3 N @ 20°C 60°: 4.0 N @ 20°C
Weight	24.7 g
Plunger Weight	4.5 g

## How to Order

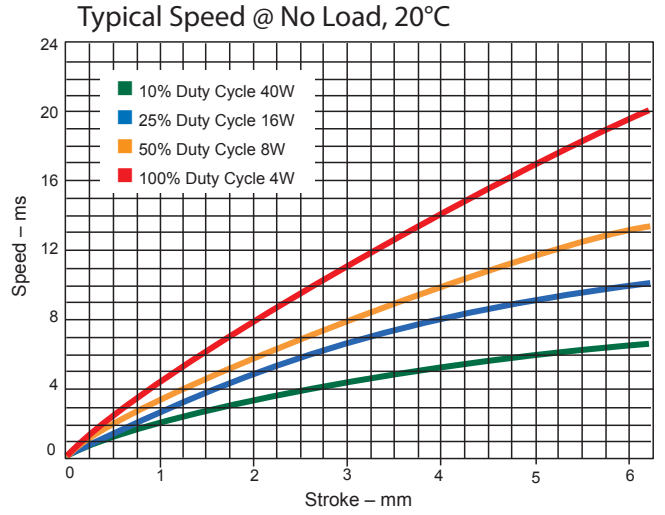
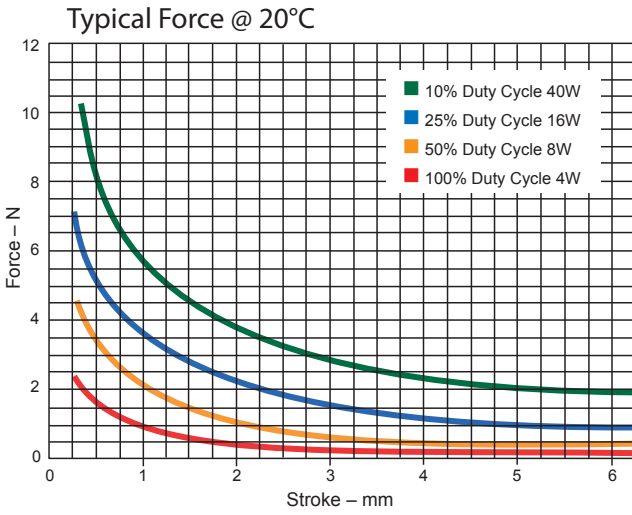
Add the plunger configuration, anti-rotation flat number, and the coil awg number to the part number (for example: to order a unit with a 60° plunger configuration without an anti-rotation flat rated for 4.8 VDC at 25% duty cycle, specify 195222-227).

Please see [www.johnsonelectric.com](http://www.johnsonelectric.com) for our list of stock products available through distribution.

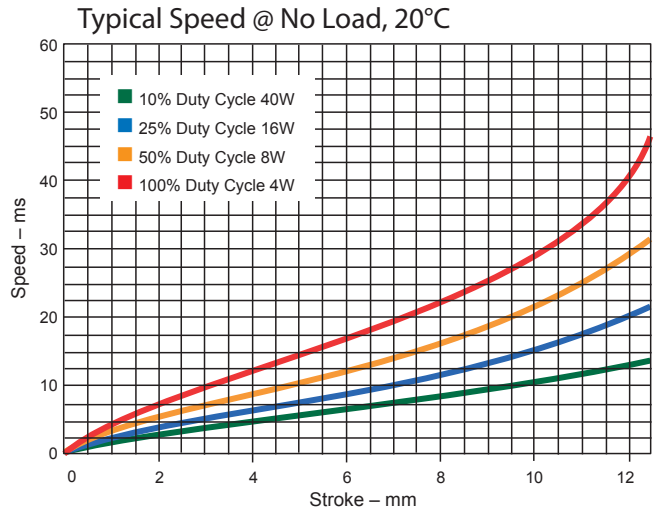
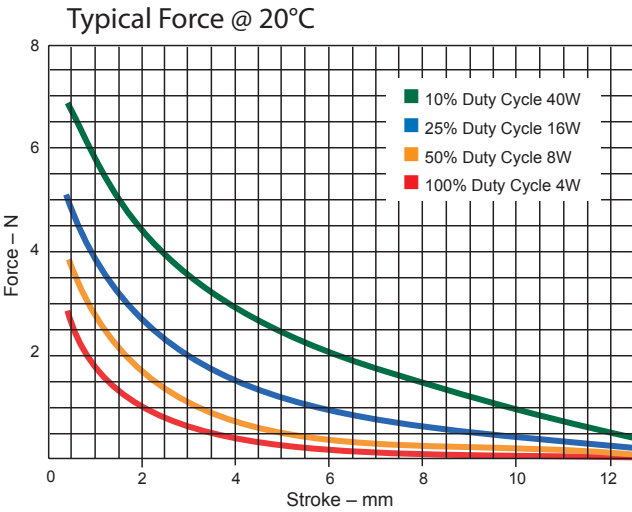
All specifications subject to change without notice.

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## Flat Face Plunger

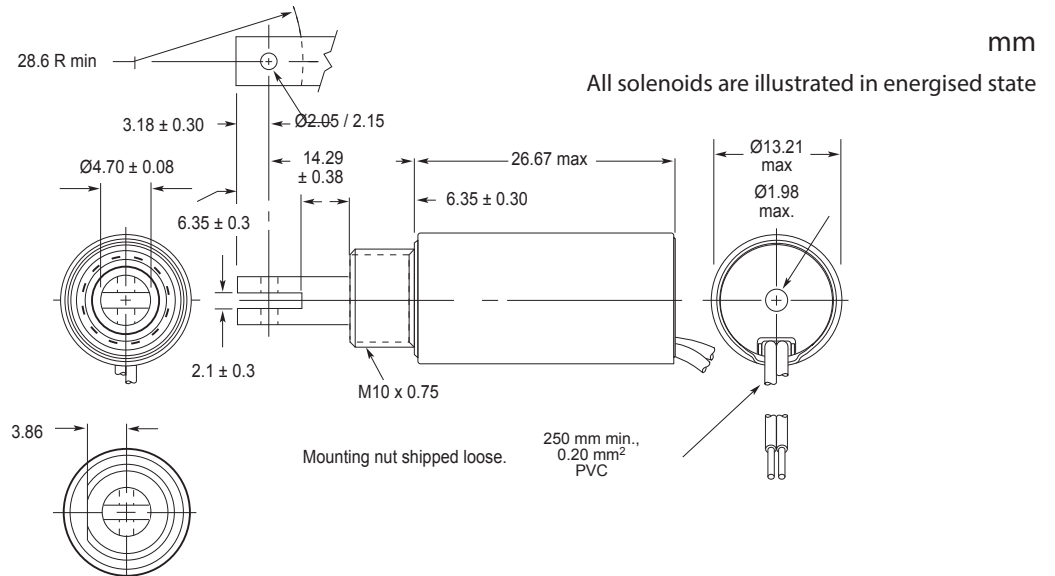


## 60° Plunger



Force values for reference only.

## Dimensions



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Coil AWG Number  
(from performance chart below)

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## Performance

	100%	50%	25%	10%
Maximum Duty Cycle	100%	50%	25%	10%
Maximum ON Time (sec) when pulsed continuously <sup>1</sup>	∞	50	5	2
Maximum ON Time (sec) for single pulse <sup>2</sup>	∞	140	30	8
Watts (@ 20°C)	4	8	16	40
Ampere Turns (@ 20°C)	497	704	994	1573

### Coil Data

avg (0XX) <sup>3</sup>	Resistance (@20°C)	# Turns <sup>4</sup>	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
27	1.43	306	2.4	3.4	4.8	7.6
28	1.95	342	2.8	3.9	5.6	8.8
29	3.84	508	3.9	5.5	7.8	12.4
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37	141.93	3060	23.8	33.7	47.6	75.3

- <sup>1</sup> Continuously pulsed at stated watts and duty cycle
- <sup>2</sup> Single pulse at stated watts (with coil at ambient room temperature 20°C)
- <sup>3</sup> Other coil awg sizes available — please consult factory
- <sup>4</sup> Reference number of turns

## Specifications

Dielectric Strength	500 VRMS
Recommended Minimum Heat Sink	Maximum watts dissipated by solenoid are based on an unrestricted flow of air at 20°C, with solenoid mounted on the equivalent of an aluminium plate measuring 51 mm square by 3.2 mm thick
Coil Resistance	±5% tolerance
Holding Force	Flat Face: 4.5 N @ 20°C 60°: 3.2 N @ 20°C
Weight	25.2 g
Plunger Weight	3.1 g

## How to Order

Add the plunger configuration, anti-rotation flat number and the coil awg number to the part number (for example: to order a unit with a 60° plunger configuration without anti-rotation rated for 4.8 VDC at 25% duty cycle, specify 195223-227.

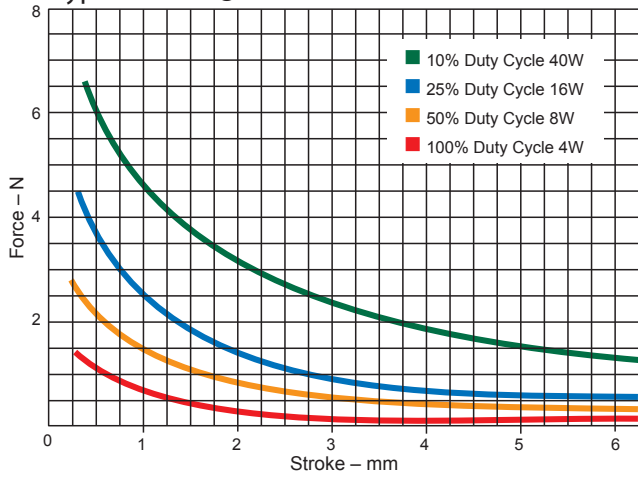
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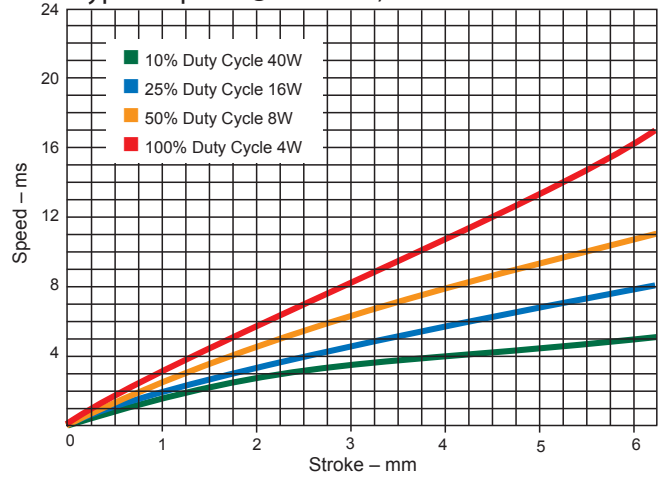
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## Flat Face Plunger

Typical Force @ 20°C

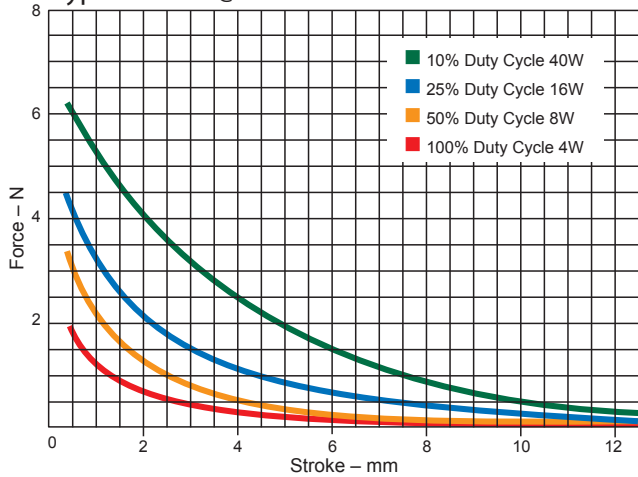


Typical Speed @ No Load, 20°C

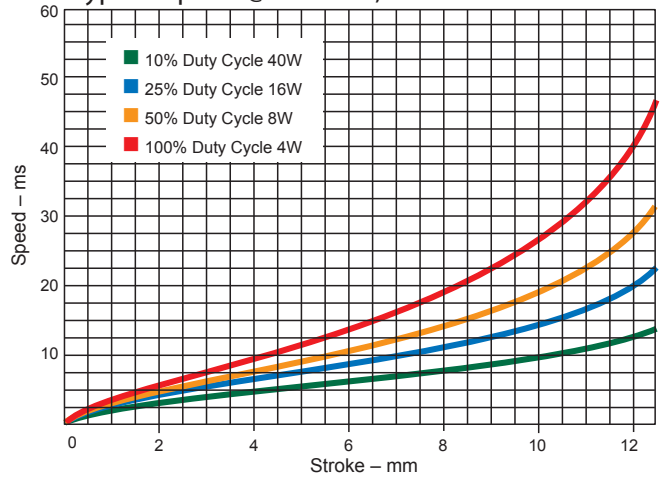


## 60° Plunger

Typical Force @ 20°C



Typical Speed @ No Load, 20°C



Force values for reference only.

## Dimensions

