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Electrical Specs	L320SS	L320DS	L320TS	L320QS
Continuous Force <sup>1</sup>	19N (4.27lbs)	33N (7.42lbs)	48N (10.79lbs)	59N (13.26lbs)
Continuous Current <sup>1</sup>	1.7Arms	1.5Arms		1.3Arms
Acceleration Force <sup>2</sup>	75N (16.86lbs)	132N (29.67lbs)	193N (43.39lbs)	235N (52.83lbs)
Acceleration Current <sup>2</sup>	6.9Arms	6.0Arms	5.9Arms	5.2Arms
Force Constant ( $K_f$ )	11N/amp (2.47lbs/amp)	22N/amp (4.95lbs/amp)	33N/amp (7.42lbs/amp)	45N/amp (10.12lbs/amp)
Back EMF ( $K_e$ )	3.6V/m/s	7.3V/m/s	11V/m/s	15V/m/s
Resistance 25°C <sup>3</sup>	3.6Ω	7.1Ω	11Ω	14Ω
Inductance <sup>3</sup>	5.1mH	7.8mH	12mH	15mH
Electric Time Constant	1.42ms	1.10ms	1.11ms	1.08ms
Fundamental Motor Constant ( $K_m$ )	5.72N√W	8.27N√W	10.01N√W	11.94N√W
Magnetic Pitch (North-North)	60mm (2.36in)			

Is this the proper Linear Shaft Motor for your application? Use our [SMART sizing program](#) to assist in your decision.

This motor can be customized to fit your application demands; contact your application engineer for more information.

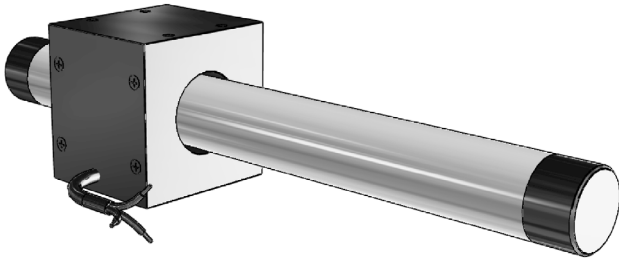
<sup>1</sup> Based on a temp rise of coil surface of 110°K over 25°C ambient temperature stalled forcer, and no external cooling or heat sinking.

<sup>2</sup> Can be maintained for a maximum of 40 seconds. Higher forces and current possible for short periods of time, contact Nippon Pulse for more information.

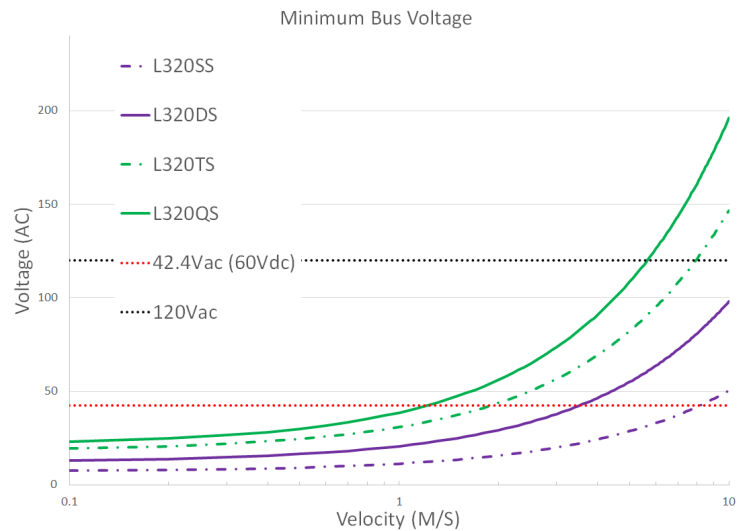
<sup>3</sup> All winding parameters listed are measured line-to-line (phase-to-phase).

Thermal Specs	L320SS	L320DS	L320TS	L320QS
Max Phase Temperature <sup>4</sup>	135°C (275°F)			
Thermal Resistance (Coil) ( $K_c$ )	10.0°C/W (50°F/W)	6.9°C/W (44.42°F/W)	4.7°C/W (40.46°F/W)	4.5°C/W (41°F/W)

<sup>4</sup>The standard temperature difference between the coil and the forcer surface is 40°C.



### Bus Voltage



Forcer Specs	L320SS	L320DS	L320TS	L320QS
Forcer Length (A)	50mm (1.97in)	80mm (3.15in)	110mm (4.33in)	140mm (5.51in)
Forcer Width	60mm (2.36in)			
Forcer Screw Pitch (P)	40mm (1.57in)	70mm (2.8in)	100mm (3.94in)	130mm (5.12in)
Forcer Weight	0.44kg (0.97lbs)	0.68kg (1.50lbs)	0.98kg (2.16lbs)	1.2kg (2.65lbs)
Gap	2.5mm (0.1in)			

Tolerances are as follows:

Dimension (mm)	Tolerance (mm)
0 - 6	±0.1
7 - 30	±0.2
31 - 120	±0.3
121 - 315	±0.5
316 - 1000	±0.8
1001 - 2000	±1.2
2000 -	±1.5

L = See Shaft Length

L1 = Usable Stroke + A

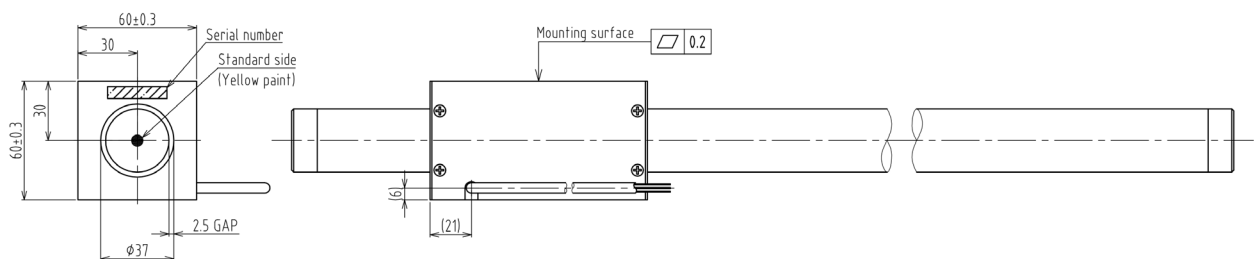
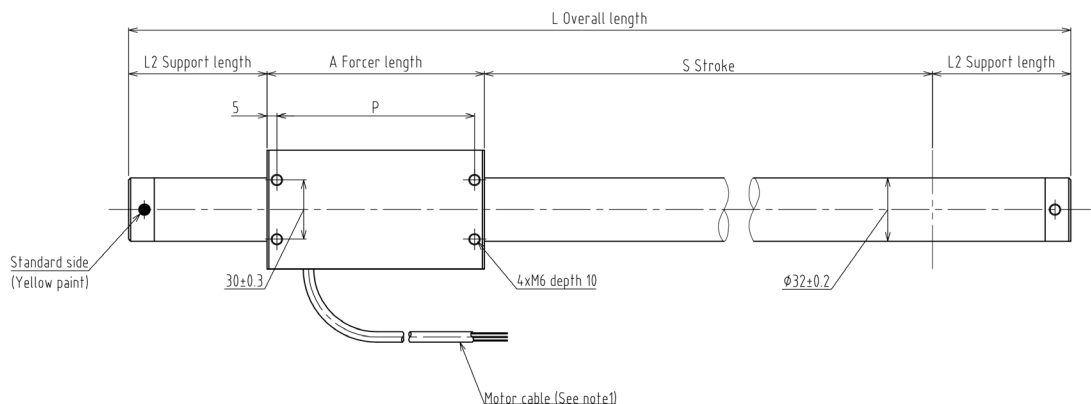
L2 = See Support Length

A = See Forcer Length

P = See Forcer Screw Pitch

Unless otherwise specified,  
dimensions are in mm

Note: Cable length 300mm. The bending radius of the motor cable should be 36.6mm (wire diameter 6.1 \* 6) as suggested by the wire manufacturer. This radius should be maintained. Use supplied connector to attach the proper high-flex cable as required by your application.

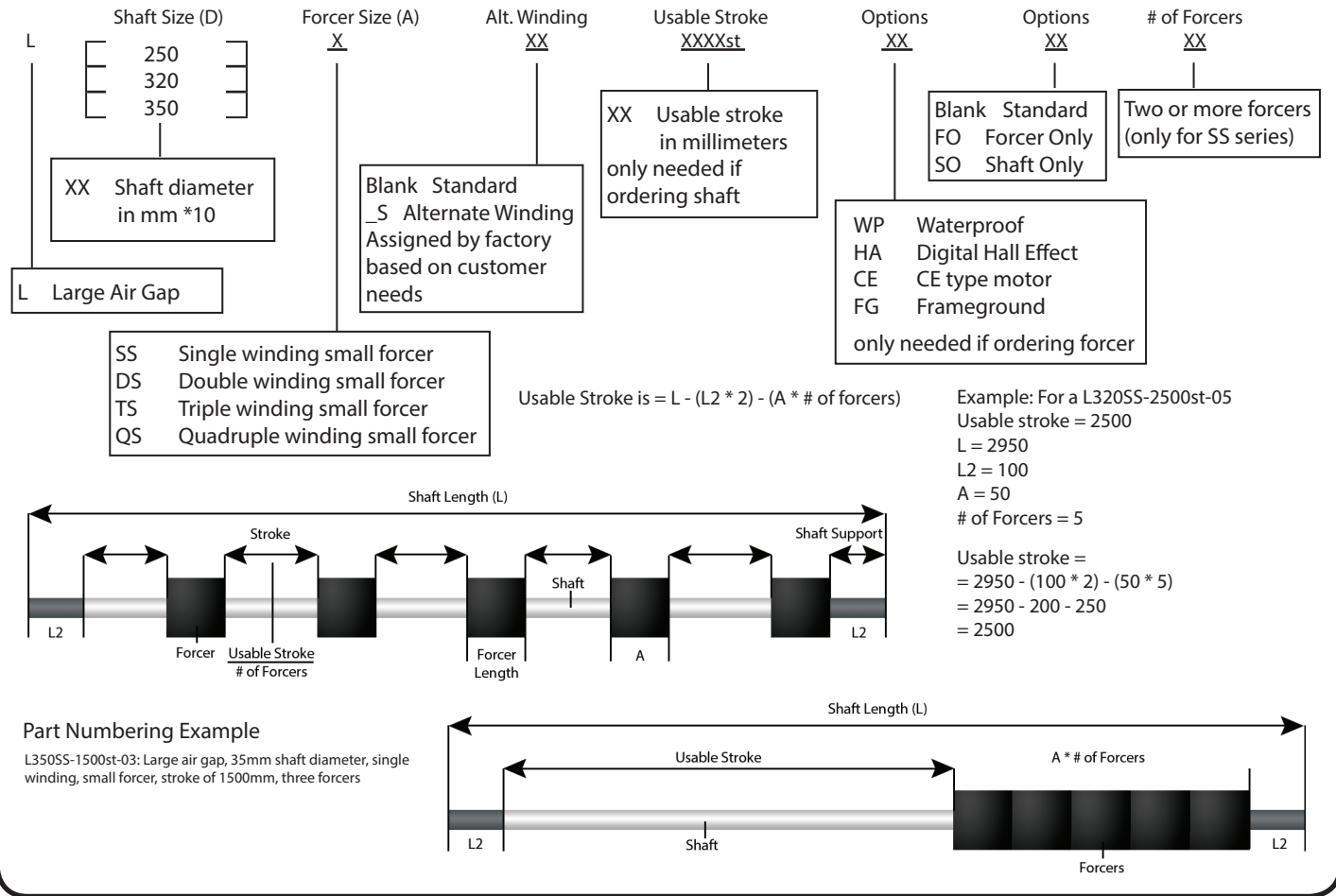


## Support and Bending

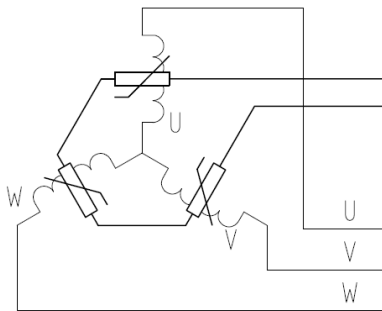
Stroke	Support Length (L2)	Max. Bending
0~850	50mm	0.00mm
900~1650	70mm	0.30mm
1700~max	100mm	0.70mm

Note: Metric units guaranteed. Imperial (United States customary) units are calculated.

## Linear Shaft Motor Part Numbering Guide (SS Series)

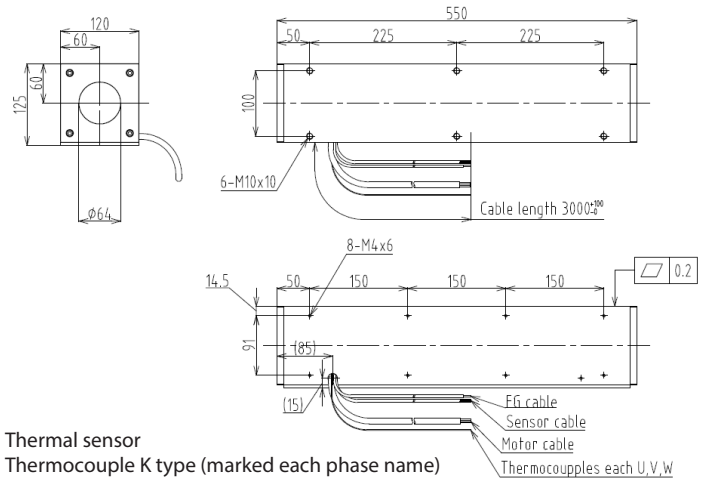


### THM Option



4. Thermistor  
 PTCSL20T071DBE (Vishay)

### Thermocouple



For assistance in selecting the best motor for your application, contact Nippon Pulse to speak with an applications engineer. 1-540-633-1677