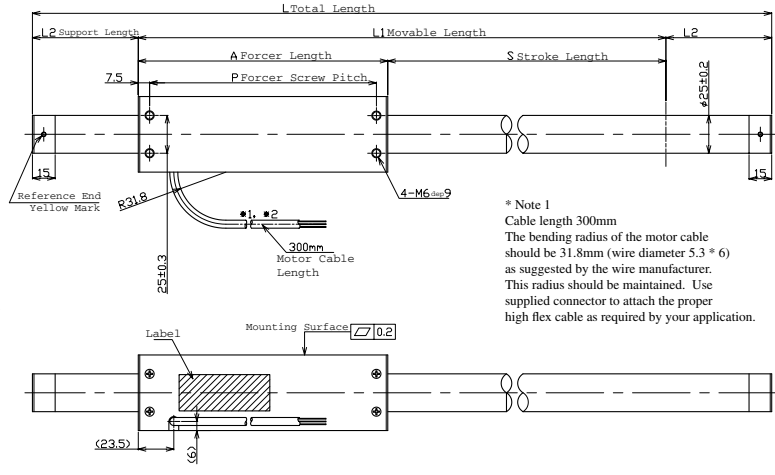
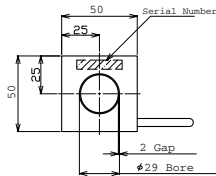


Unless Otherwise Specified:  
Dimensions are in mm  
Tolerances are as follows:

Dimension (mm)	Tolerance (mm)
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 Shaft Support Length  
A = See Moving Coil Length  
P = See Moving Coil Screw Pitch



Electrical Specs	L0250D	L0250T	L0250Q
Continuous Force <sup>1</sup>	34N	52N	69N
Continuous Current <sup>1</sup>	1.3Arms	1.3Arms	1.3Arms
Peak Force <sup>2</sup>	138N	207N	276N
Peak Current <sup>2</sup>	5.2Arms	5.2Arms	5.2Arms
Force Constant (K <sub>f</sub> )	27N/Arms	40N/Arms	53N/Arms
Back EMF (K <sub>e</sub> )	8.8V/m/s	13V/m/s	18V/m/s
Resistance 25°C, <sup>3</sup>	8.4Ω	13Ω	17Ω
Inductance <sup>3</sup>	9.2mH	14mH	18mH
Electric Time Constant	1.11ms	1.11ms	1.11ms
Fundamental Motor Constant (K <sub>m</sub> )	9.17N√W	11.23N√W	12.97N√W
Magnetic Pitch (North-North)	90mm	90mm	90mm

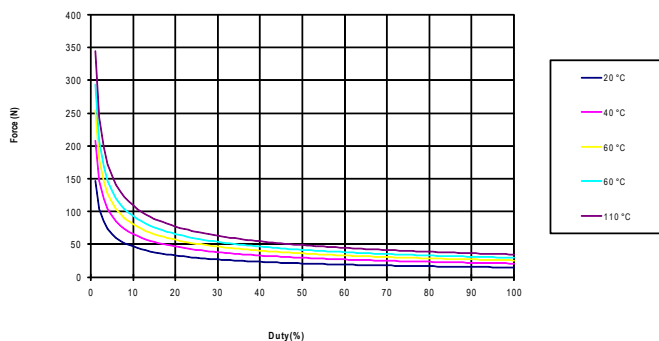
All specifications are for reference only. Specifications may change depending on servo driver selected. Consult Nippon Pulse.  
1) Based on a temp rise of coil surface of 110°K over 25°C ambient temperature stalled forcer, and no external cooling or heat sinking. Addition of 25 cm x 25 cm x 2.5 cm aluminum heat sink increases continuous force by 20%.  
2) Can be maintained for a maximum of 40 seconds, higher forces and current possible for short periods of time, consult Nippon Pulse.  
3) All winding parameters listed are measured line-to-line (phase-to-phase)

Thermal Specs	L0250D	L0250T	L0250Q
Max Phase Temperature <sup>4</sup>	135°C	135°C	135°C
Thermal Resistance (Coil) (K <sub>q</sub> )	7.8°C	5.2°C	3.9°C

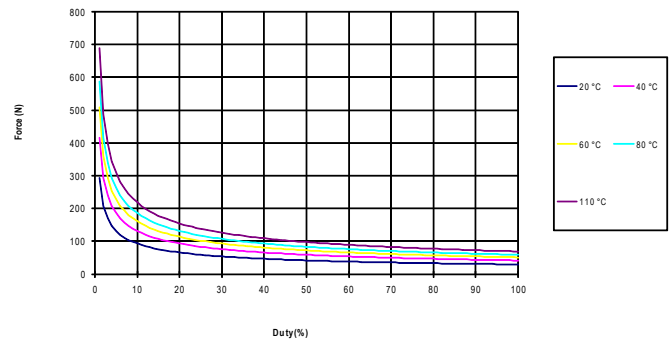
4) The standard temperature difference between the coil and the forcer surface is 20°C

Forcer Specs	L0250D	L0250T	L0250Q
Forcer Length (A)	120mm	165mm	210mm
Forcer Width	50mm	50mm	50mm
Forcer Screw Pitch (P)	105mm	150mm	195mm
Forcer Weight	0.77kg	1.1kg	1.5kg
Gap	2.0mm	2.0mm	2.0mm

L0250D Force Duty Curve



L0250Q Force Duty Curve



## Shaft Length (mm)

Stroke	L0250D	L0250T	L0250Q
100	320	365	410
150	370	415	460
200	420	465	510
250	470	515	560
300	520	565	610
350	570	615	660
400	620	665	710
450	670	715	760
500	720	765	810
550	770	815	860
600	820	865	910
650	870	915	960
700	920	965	1010
750	1010	1055	1100
800	1060	1105	1150
850	1110	1155	1200
900	1160	1205	1250
950	1210	1255	1300
1000	1260	1305	1350
1050	1310	1355	1400
1100	1360	1405	1450
1150	1410	1455	1500
1200	1460	1505	1550
1250	1510	1555	1600
1300	1560	1605	1650
1350	1610	1655	1700
1400	1660	1705	1750
1450	1710	1755	1800
1500	1760	1805	1850
1550	1870	1915	1960
1600	1920	1965	2010
1650	1970	2015	2060
1700	2020	2065	2110
1750	2070	2115	2160
1800	2120	2165	2210
1850	2170	2215	2260
1900	2220	2265	2310
1950	2270	2315	2360
2000	2320	2365	2410

## Shaft Mass (kg)

Stroke	L0250D	L0250T	L0250Q
100	0.9	1.1	1.2
150	1.1	1.2	1.4
200	1.2	1.4	1.6
250	1.4	1.6	1.7
300	1.6	1.7	1.9
350	1.8	1.9	2.1
400	1.9	2.1	2.2
450	2.1	2.3	2.4
500	2.3	2.4	2.6
550	2.4	2.6	2.8
600	2.6	2.8	2.9
650	2.8	2.9	3.1
700	3	3.1	3.3
750	3.2	3.4	3.5
800	3.4	3.5	3.7
850	3.5	3.7	3.8
900	3.7	3.9	4
950	3.9	4	4.2
1000	4.1	4.2	4.4
1050	4.2	4.4	4.5
1100	4.4	4.6	4.7
1150	4.6	4.7	4.9
1200	4.7	4.9	5.1
1250	4.9	5.1	5.2
1300	5.1	5.2	5.4
1350	5.3	5.4	5.6
1400	5.4	5.6	5.7
1450	5.6	5.8	5.9
1500	5.8	5.9	6.1
1550	6	6.2	6.3
1600	6.2	6.3	6.5
1650	6.3	6.5	6.6
1700	6.5	6.7	6.8
1750	6.7	6.8	7
1800	6.9	7	7.2
1850	7	7.2	7.3
1900	7.2	7.4	7.5
1950	7.4	7.5	7.7
2000	7.6	7.7	7.9

# L0250

## Linear Shaft Motor

### Lead Wire

Wire Type	UL 2464FA
Wire AWG	20
U Phase	Red
V Phase	White
W Phase	Black

300mm lead wire bare leads  
The bending radius of the motor cable should be 31.8mm as suggested by the wire manufacturer.

### CE Type Motor Cable

Wire Type	UL 1330
Wire AWG	24
U Phase	Red
V Phase	White
W Phase	Black

Ground Wire	<b>CE</b>
Wire Type	UL 1330
Wire AWG	20
Frame Ground	Green/Yellow

300mm lead wire bare leads  
The bending radius of the motor cable should be 16.96mm as suggested by the wire manufacturer.

### Support and Bending

Stroke D/T/Q	Support Length	Max. bending
0~700	50mm	0.00mm
701~1000	70mm	0.30mm
1001~1500	70mm	0.70mm
1501~max	100mm	0.70mm

Shaft Diameter (D) - 20.5mm ±0.2  
Total Length (L)=Stroke (S)+Forcer Length (A)+(Support Length (L2)x2)  
Stroke lengths available from 100mm to 3650mm. Contact Nippon Pulse for more information.

### Connector (Motor Cable)

Receptacle Housing	HLR-03V
Plug Housing	HLP-03V
Retainer	HLS-03V
Pin Contact	SSM-21T-P1.4
Socket Contact	SSF-21T-P1.4

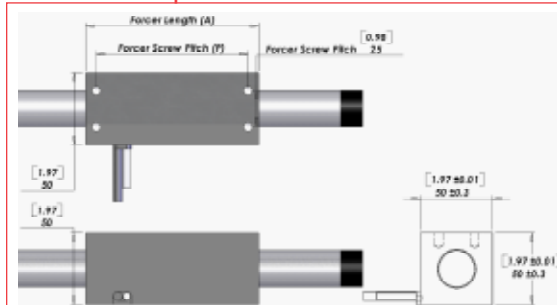
To be installed by the user

### Hall Effect Cable

Wire Type	UL 758
Wire AWG	28
VCC	White/Red
GND	White/Black
Sensor 1	Orange/Red
Sensor 2	Orange/Black
Sensor 3	Gray/Red
No Convec.	Gray/Black

400mm lead wire bare leads  
The bending radius of the motor cable should be 27.6mm as suggested by the wire manufacturer.

## Hall Effect Specs



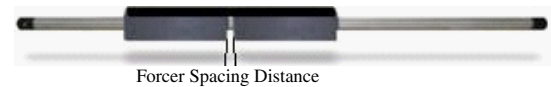
\* Note 1  
The bending radius of the motor cable should be R27.6mm (wire diameter 4.6 \* 6) as suggested by the wire manufacturer. This radius should be maintained. Use supplied connector to attach the proper high flex cable as required by your application.

### Sensor Cable Specs

Wire Type	UL 758
Wire AWG	28
VCC	White/Red
GND	White/Black
Sensor 1	Orange/Red
Sensor 2	Orange/Black
Sensor 3	Gray/Red

The bending radius of the sensor cable should be R36.6mm (wire diameter 6.1 \* 6) as suggested by the wire manufacturer. This radius should be maintained. Attach the proper high flex cable as required by your application.

## Tandem Forcer



### Forcer Spacing Distance

Spec	L0250T	L0250X
Forcer Spacing Distance	15mm	15mm
Pole (N/S) Distance	45mm	45mm
Forcer Length	165mm	390mm
Flip Forcers	No	Yes

## Part Numbering System

L	Shaft Size (D) 0250	Forcer Size (A) X	Parallel Option XX	Usable Stroke XXXXSt 100-2000mm	Options XX	Options XX	Custom Options XX
		D: Double (2) windings T: Triple (3) windings Q: Quadruple (4) windings X: Octuple (8) windings	Blank: Single Motor PL: Parallel Motors		WP: Waterproof HA: Digital Hall Effect	Blank: Standard FO: Forcer Only SO: Shaft Only	Custom code