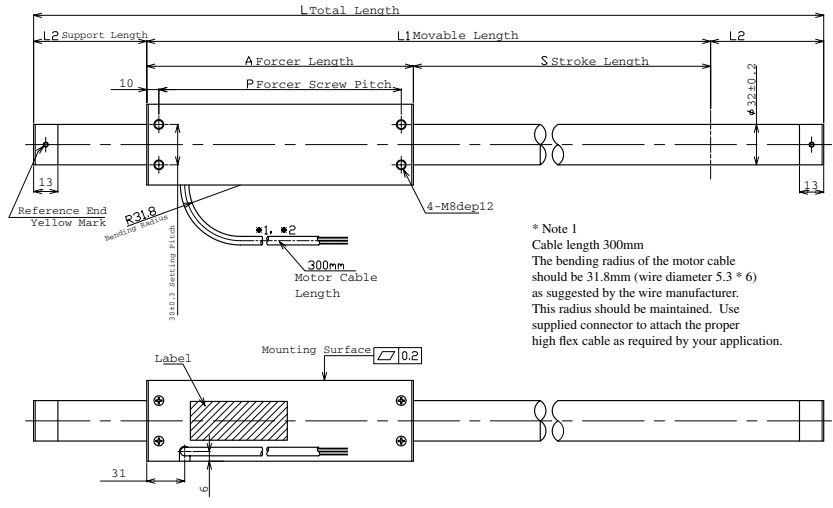


Unless Otherwise Specified:
Dimensions are in mm
Tolerances are as follows:

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



* Note 1
Cable length 300mm
The bending radius of the motor cable should be 31.8mm (wire diameter 5.3 * 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.

Electrical Specs	L0320D	L0320T	L0320Q
Continuous Force ¹	55N	82N	109N
Continuous Current ¹	1.3Arms	1.3Arms	1.3Arms
Peak Force ²	218N	327N	436N
Peak Current ²	5.0Arms	5.0Arms	5.0Arms
Force Constant (K _f)	44N/arms	65N/Arms	87N/Arms
Back EMF (K _e)	15V/m/s	22V/m/s	29V/m/s
Resistance 25°C, ³	12Ω	17Ω	23Ω
Inductance ³	14.0mH	21.0mH	28.0mH
Electric Time Constant	1.22ms	1.22ms	1.22ms
Fundamental Motor Constant (K _m)	12.83N√W	15.72N√W	18.15N√W
Magnetic Pitch (North-North)	120mm	120mm	120mm

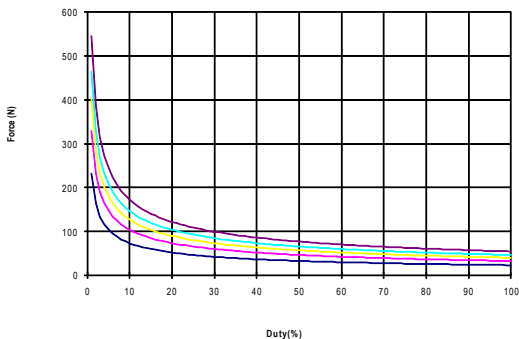
All specifications are for reference only. Specifications may change depending on servo driver selected. Consult Nippon Pulse.
1) Based on a temp rise of coil surface of 110°K over 25°C ambient temperature stalled forcer, and no external cooling or heat sinking. Addition of 25 cm x 25 cm x 2.5 cm aluminum 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	L0320D	L0320T	L0320Q
Max Phase Temperature ⁴	135°C	135°C	135°C
Thermal Resistance (Coil) (K _q)	6.1°C	4.1°C	3.1°C

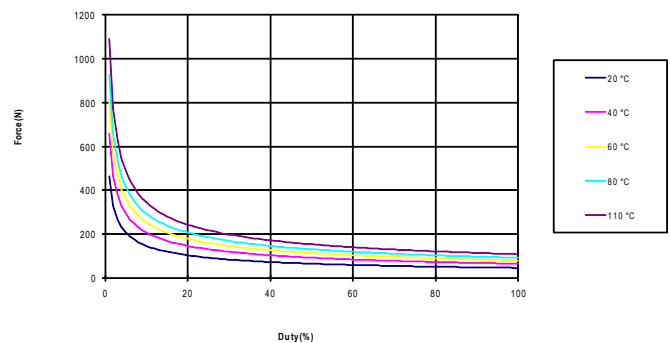
4) The standard temperature difference between the coil and the forcer surface is 25°C

Forcer Specs	L0320D	L0320T	L0320Q
Forcer Length (A)	160mm	220mm	280mm
Forcer Width	60mm	60mm	60mm
Forcer Screw Pitch (P)	140mm	200mm	260mm
Forcer Weight	1.3kg	1.9kg	2.6kg
Gap	2.50mm	2.50mm	2.50mm

L0320D Force Duty Curve



L0320Q Force Duty Curve



Shaft Length (mm)

Stroke	L0320D	L0320T	L0320Q
150	410	470	530
200	460	520	580
250	510	570	630
300	560	620	680
350	610	670	730
400	660	720	780
450	710	770	830
500	760	820	880
550	810	870	930
600	860	920	980
650	910	970	1030
700	960	1020	1080
750	1010	1070	1130
800	1100	1160	1220
850	1150	1210	1270
900	1200	1260	1320
950	1250	1310	1370
1000	1300	1360	1420
1050	1350	1410	1470
1100	1400	1460	1520
1150	1450	1510	1570
1200	1500	1560	1620
1250	1550	1610	1670
1300	1600	1660	1720
1350	1650	1710	1770
1400	1700	1760	1820
1450	1750	1810	1870
1500	1800	1860	1920
1550	1910	1970	2030
1600	2020	2080	2140
1650	2130	2190	2250
1700	2240	2300	2360
1750	2350	2410	2470
1800	2460	2520	2580
1850	2570	2630	2690
1900	2680	2740	2800
1950	2790	2850	2910
2000	2900	2960	3020

Shaft Mass (kg)

Stroke	L0320D	L0320T	L0320Q
150	2.1	2.4	2.8
200	2.4	2.7	3
250	2.7	3	3.3
300	2.9	3.3	3.6
350	3.2	3.6	3.9
400	3.5	3.8	4.2
450	3.8	4.1	4.5
500	4.1	4.4	4.7
550	4.3	4.7	5
600	4.6	5	5.3
650	4.9	5.2	5.6
700	5.2	5.5	5.9
750	5.5	5.8	6.1
800	5.8	6.2	6.5
850	6.1	6.5	6.8
900	6.4	6.7	7.1
950	6.7	7	7.4
1000	7	7.3	7.6
1050	7.3	7.6	7.9
1100	7.5	7.9	8.2
1150	7.8	8.2	8.5
1200	8.1	8.4	8.8
1250	8.4	8.7	9.1
1300	8.7	9	9.3
1350	8.9	9.3	9.6
1400	9.2	9.6	9.9
1450	9.5	9.8	10.2
1500	9.8	10.1	10.5
1550	10.2	10.5	10.9
1600	10.5	10.8	11.2
1650	10.8	11.1	11.5
1700	11.1	11.4	11.7
1750	11.3	11.7	12
1800	11.6	12	12.3
1850	11.9	12.2	12.6
1900	12.2	12.5	12.9
1950	12.5	12.8	13.1
2000	12.7	13.1	13.4

L0320

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

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

Support and Bending

Stroke	Support Length	Max. bending
0~750	50mm	0.00mm
751~1000	70mm	0.30mm
1001~1500	70mm	0.70mm
1501~max	100mm	0.70mm

Shaft Diameter (D) - 32mm ±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

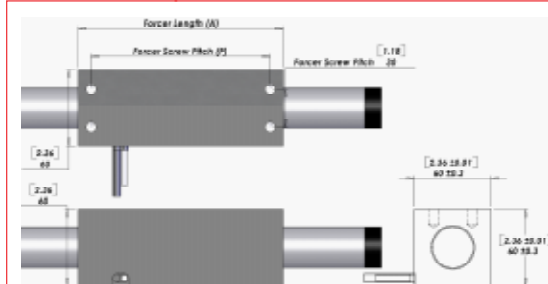
To be installed by the user

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

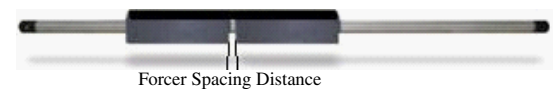
The bending radius of the motor cable should be R27.6mm (wire diameter 4.6 * 6) as suggested by the wire manufacturer. This radius should be maintained. Use supplied connector to attach the proper high flex cable as required by your application.

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 R31.8mm (wire diameter 5.3 * 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	L0320T	L0320Q
Forcer Spacing Distance	20mm	20mm
Pole (N/S) Distance	60mm	60mm
Forcer Length	220mm	520mm
Flip Forcers	No	Yes

Part Numbering System

L	Shaft Size (D) 0320	Forcer Size (A) <u>X</u>	Parallel Option <u>XX</u>	Usable Stroke <u>XXXXSt</u> 100-2000mm	Options <u>XX</u> WP: Waterproof HA: Digital Hall Effect	Options <u>XX</u> Blank: Standard FO: Forcer Only SO: Shaft Only	Custom Options <u>XX</u> Custom code
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