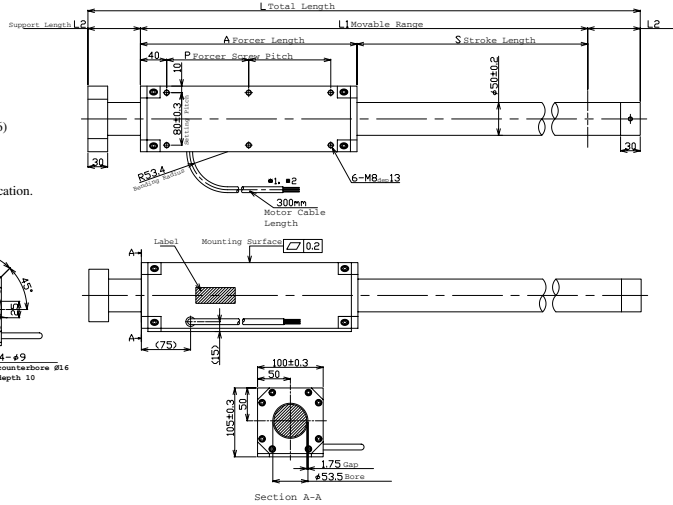


Unless Otherwise Specified:
Dimensions are in mm
Tolerances are as follows:

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

* Note 1
Cable length 300mm
The bending radius of the motor cable should be 36.6mm (wire diameter 8.9 ± 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.



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	S500D	S500T	S500Q
Continuous Force ¹	289N	440N	585N
Continuous Current ¹	3.8Arms	5.8Arms	7.7Arms
Acceleration Force ²	1156N	1760N	2340N
Acceleration Current ²	15.2Arms	23.2Arms	30.8Arms
Force Constant (K_f)	76N/Arms	76N/Arms	76N/Arms
Back EMF (K_e)	25V/m/s	25V/m/s	25V/m/s
Resistance 25°C, ³	4.4Ω	3.3Ω	2.2Ω
Inductance ³	27mH	19.8mH	13.2mH
Electric Time Constant	6.14ms	6.0ms	6.0ms
Rated Voltage (AC)	240V	240V	240V
Fundamental Motor Constant (K_m)	36.28N√W	41.84N√W	51.24N√W
Magnetic Pitch (North-North)	180mm	180mm	180mm

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

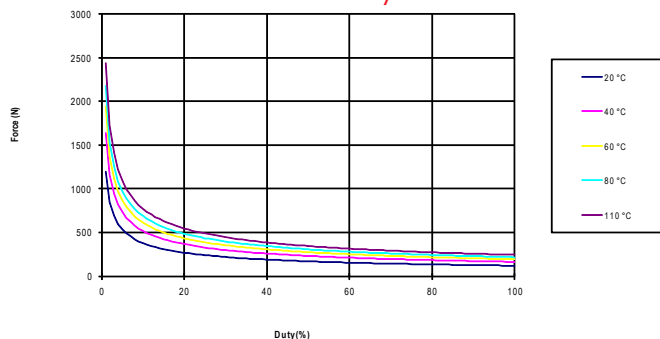
3) All winding parameters listed are measured line-to-line (phase-to-phase)

Thermal Specs	S500D	S500T	S500Q
Max Phase Temperature ⁴	135°C	135°C	135°C
Thermal Resistance (Coil) (K_q)	1.7°C/W	1°C/W	0.8°C/W

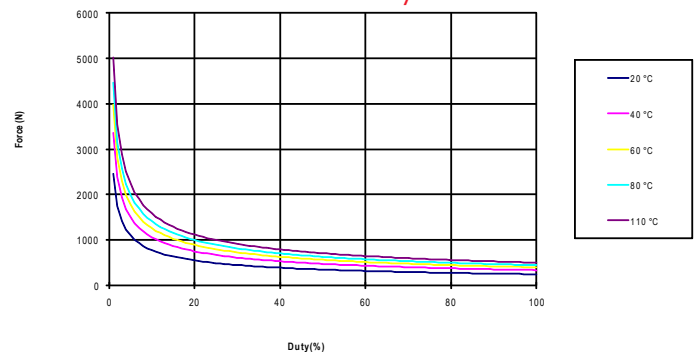
4) The standard temperature difference between the coil and the forcer surface is 40°C

Forcer Specs	S500D	S500T	S500Q
Forcer Length (A)	240mm	330mm	420mm
Forcer Width	100 x 105mm	100 x 105mm	100 x 105mm
Forcer Screw Pitch (P)	80mm	125mm	170mm
Forcer Weight	10kg	13kg	15kg
Gap	1.75mm	1.75mm	1.75mm

S500D Force Duty Curve



S500Q Force Duty Curve



Shaft Length (mm)

Stroke	S500D	S500T	S500Q
200	600	690	780
250	650	740	830
300	700	790	880
350	750	840	930
400	800	890	980
450	850	940	1030
500	900	990	1080
550	950	1040	1130
600	1000	1090	1180
650	1050	1140	1230
700	1100	1190	1280
750	1150	1240	1330
800	1240	1330	1420
850	1290	1380	1470
900	1340	1430	1520
950	1390	1480	1570
1000	1440	1530	1620
1050	1490	1580	1670
1100	1540	1630	1720
1150	1590	1680	1770
1200	1640	1730	1820
1250	1690	1780	1870
1300	1740	1830	1920
1350	1790	1880	1970
1400	1840	1930	2020
1450	1890	1980	2070
1500	1940	2030	2120
1550	1990	2080	2170
1600	2040	2130	2220
1650	2090	2180	2270
1700	2140	2230	2320
1750	2190	2280	2370
1800	2240	2330	2420
1850	2290	2380	2470
1900	2340	2430	2520
1950	2390	2480	2570
2000	2440	2530	2620

Shaft Mass (kg)

Stroke	S500D	S500T	S500Q
200	8.9	10.2	11.4
250	9.6	10.9	12.1
300	10.3	11.6	12.8
350	11.0	12.3	13.5
400	11.7	13.0	14.2
450	12.4	13.7	14.9
500	13.1	14.4	15.6
550	13.8	15.1	16.3
600	14.5	15.8	17.0
650	15.2	16.5	17.7
700	15.9	17.2	18.4
750	16.6	17.9	19.1
800	18.0	19.2	20.5
850	18.7	19.9	21.2
900	19.4	20.6	21.9
950	20.1	21.3	22.6
1000	20.8	22.0	23.3
1050	21.5	22.7	24.0
1100	22.2	23.4	24.7
1150	22.9	24.1	25.4
1200	23.6	24.8	26.1
1250	24.3	25.5	26.8
1300	25.0	26.2	27.5
1350	25.7	26.9	28.1
1400	26.4	27.6	28.9
1450	27.1	28.3	29.6
1500	27.8	29.0	30.3
1550	27.8	29.7	31.0
1600	29.2	30.4	31.7
1650	30.0	31.1	32.4
1700	30.6	31.8	33.1
1750	31.3	32.5	33.8
1800	32.0	33.2	34.5
1850	32.7	33.9	35.2
1900	33.4	34.6	35.9
1950	34.1	35.3	36.6
2000	34.8	36.0	37.3

S500

Linear Shaft Motor

Lead Wire

Wire Type	UL 2570FA
Wire AWG	14
U Phase	Red
V Phase	White
W Phase	Black

300mm lead wire bare leads
The bending radius of the motor cable should be 36.6mm as suggested by the wire manufacturer.

Connector (Motor Cable)

Receptacle Housing	VLR-03V
Plug Housing	VLP-03V
Retainer	VLS-03V
Pin Contact	SVM-61T-P2.0
Socket Contact	SVF-61T-P2.0

To be installed by the user

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

Support and Bending

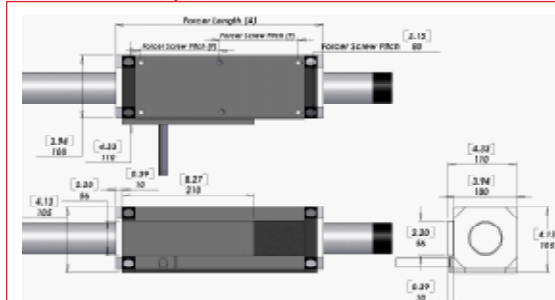
Stroke	Support Length	Max. bending
0~750	80mm	0.00mm
800~max.	100mm	0.15mm

Shaft Diameter (D) - 50mm ±0.2

Total Length (L)=Stroke (S)+Forcer Length (A)+(Support Length (L2)x2)

Stroke lengths available from 100mm to 3850mm. Contact Nippon Pulse for more information.

Hall Effect Specs



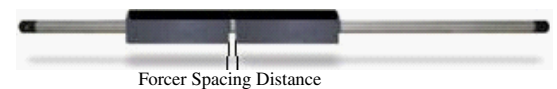
* Note 1
The bending radius of the motor cable should be R36.6mm (wire diameter 4.6 * 6) as suggested by the wire manufacturer. This radius should be maintained. Use supplied connector to attach the proper high flex cable as required by your application.

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 R27.6mm (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	S500T	S500Q
Forcer Spacing Distance	30mm	30mm
Pole (N/S) Distance	90mm	90mm
Forcer Length	330mm	420mm
Flip Forcers	No	Yes

Tandem S500D forcers are possible, but are equivalent to one (1) S500Q forcer and thus are not listed above.

Part Numbering System

S	—	Shaft Size (D) 500	—	Forcer Size (A) <u>X</u>	—	Parallel Option <u>XX</u>	—	Usable Stroke <u>XXXX</u> St 200-2000mm	—	Options <u>XX</u>	—	Options <u>XX</u>	—	# of Forcers <u>XX</u>
				D: Double (2) windings T: Triple (3) windings Q: Quadruple (4) windings		Blank: Single Motor PL: Parallel Motors				Blank: Standard WP: Water Resistant HA: Digital Hall Effect CE: CE type motor		Blank: Standard FO: Forcer Only SO: Shaft Only		Two or more