

UNLESS OTHERWISE SPECIFIED:
 Dimensions are in MM [IN]
 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 36.6 mm (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.

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 Specifications

	S427D	S427T	S427Q
Continuous Force ¹	100N (22.5lbs)	150N (33.7lbs)	200N (45lbs)
Continuous Current ¹	3.0Arms	3.0Arms	3.0Arms
Peak Force ²	400N (90lbs)	600N (135lbs)	800N (180lbs)
Peak Current ²	12Arms	12Arms	12Arms
Force Constant Kf	33N/Arms (7.5lbs/Arms)	50N/Arms (11.3lbs/Arms)	67N/Arms (15.0lbs/Arms)
Back EMF	11V/m/s (0.28V/in/s)	17V/m/s (0.42V/in/s)	22V/m/s (0.56V/in/s)
Resistance 25°C, ³	2.7Ω	3.9Ω	5.2Ω
Inductance ³	7.3mH	11mH	15mH
Electrical Time Constant	2.70ms	2.82ms	2.88ms
Magnetic Pitch (North-North)	180mm (7.09in)	180mm (7.09in)	180mm (7.09in)

All specifications are for reference only. Specifications may change depending on servo driver selected. Consult Nippon Pulse America.

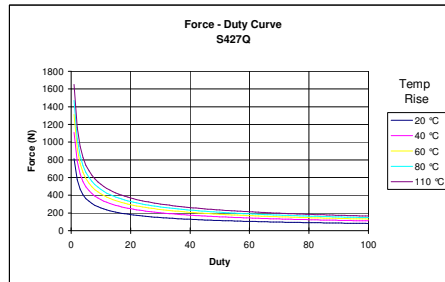
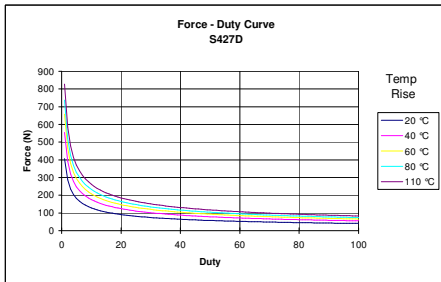
- 1) Based on a temp rise of coil surface of 110 °K over 25 °C ambient temperature stalled forcer, and no external cooling or heat sinking. Addition of 25 cm x 25 cm x 2.5 cm aluminum heat sink increases continuous force by 20%.
- 2) Can be maintained for a maximum of 40 seconds, consult Nippon Pulse America.
- 3) All winding parameters listed are measured line-to-line (phase-to-phase).

Thermal Specifications

	S427D	S427T	S427Q
Max phase temperature	135°C (275°F)	135°C (275°F)	135°C (275°F)
Thermal Resistance Kq	4.6°C/W	3.2°C/W	2.4°C/W

Mechanical Specifications

Forcer		S427D	S427T	S427Q
Forcer Length	A	220mm (8.66in)	310mm (12.2in)	400mm (15.75in)
Forcer Width		80mm (3.15in)	80mm (3.15in)	80mm (3.15in)
Forcer Screw Pitch	P	200mm (7.87in)	290mm (11.42in)	380mm (14.96in)
Forcer Weight		3.0kg (6.6lbs)	4.2kg (9.3lbs)	5.4kg (11.9lbs)
Gap		1.65mm (0.06in)	1.65mm (0.06in)	1.65mm (0.06in)



Mechanical Specifications

Shaft

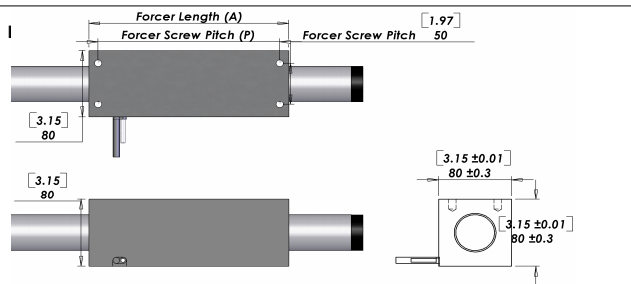
Shaft Diameter (D) 42.7 ±0.2mm (1.68in)

Shaft Length (L) Motor Type	Maximum Stroke length 3600mm (141.7in)		
	S427D	S427T	S427Q
200	540mm (21.3in)	630mm (24.8in)	720mm (28.3in)
250	590mm (23.2in)	680mm (26.8in)	770mm (30.3in)
300	640mm (25.2in)	730mm (28.7in)	820mm (32.3in)
350	690mm (27.2in)	780mm (30.7in)	870mm (34.3in)
400	740mm (29.1in)	830mm (32.7in)	920mm (36.2in)
450	790mm (31.1in)	880mm (34.6in)	970mm (38.2in)
500	840mm (33.1in)	930mm (36.6in)	1020mm (40.2in)
550	890mm (35in)	980mm (38.6in)	1070mm (42.1in)
600	940mm (36.9in)	1030mm (40.6in)	1120mm (44.1in)
650	990mm (38.9in)	1080mm (42.5in)	1170mm (46.1in)
700	1040mm (40.9in)	1130mm (44.5in)	1220mm (48.1in)
750	1090mm (42.9in)	1180mm (46.5in)	1270mm (50.1in)
800	1140mm (44.9in)	1230mm (48.5in)	1320mm (52.1in)
850	1190mm (46.9in)	1280mm (50.5in)	1370mm (54.1in)
900	1240mm (48.9in)	1330mm (52.5in)	1420mm (56.1in)
950	1290mm (50.9in)	1380mm (54.5in)	1470mm (58.1in)
1000	1340mm (52.9in)	1430mm (56.5in)	1520mm (60.1in)
1050	1390mm (54.9in)	1480mm (58.5in)	1570mm (62.1in)
1100	1440mm (56.9in)	1530mm (60.5in)	1620mm (64.1in)
1150	1490mm (58.9in)	1580mm (62.5in)	1670mm (66.1in)
1200	1540mm (60.9in)	1630mm (64.5in)	1720mm (68.1in)
1250	1590mm (62.9in)	1680mm (66.5in)	1770mm (70.1in)
1300	1640mm (64.9in)	1730mm (68.5in)	1820mm (72.1in)
1350	1690mm (66.9in)	1780mm (70.5in)	1870mm (74.1in)
1400	1740mm (68.9in)	1830mm (72.5in)	1920mm (76.1in)
1450	1790mm (70.9in)	1880mm (74.5in)	1970mm (78.1in)
1500	1840mm (72.9in)	1930mm (76.5in)	2020mm (80.1in)
1550	1890mm (74.9in)	1980mm (78.5in)	2070mm (82.1in)
1600	1940mm (76.9in)	2030mm (80.5in)	2120mm (84.1in)
1650	1990mm (78.9in)	2080mm (82.5in)	2170mm (86.1in)
1700	2040mm (80.9in)	2130mm (84.5in)	2220mm (88.1in)
1750	2090mm (82.9in)	2180mm (86.5in)	2270mm (90.1in)
1800	2140mm (84.9in)	2230mm (88.5in)	2320mm (92.1in)
1850	2190mm (86.9in)	2280mm (90.5in)	2370mm (94.1in)
1900	2240mm (88.9in)	2330mm (92.5in)	2420mm (96.1in)
1950	2290mm (90.9in)	2380mm (94.5in)	2470mm (98.1in)
2000	2340mm (92.9in)	2430mm (96.5in)	2520mm (100.1in)

Stroke lengths from 100mm and up to 3600mm are available. Please consult Nippon Pulse America for more information.

Support and Bending Stroke	Shaft Support length (L2)	Max Bending
0 → 550	60mm (2.36in)	0.00mm (0.00in)
551 → 1000	80mm (3.15in)	0.15mm (0.006in)
1001 → 1500	100mm (3.94in)	0.60mm (0.024in)
1501 → 2000	100mm (3.94in)	1.10mm (0.043in)
2001 → 2500	100mm (3.94in)	2.00mm (0.079in)
2501 → Max	100mm (3.94in)	2.10mm (0.083in)

Hall Effect (Optional)



* Note 2
Sensor Cable (Lead wires) Specifications
HP-SB20276SR
Wire Type UL758
Wire AWG 28
Length 400 mm (bare leads)
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 R 27.6 (wire diameter 4.6 * 6) as suggested by the wire manufacturer. This radius should be maintained. Attach the proper high flex cable as required by your application.

* Note 1
The bending radius of the motor cable should be 36.6 mm (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.

Stroke	Shaft Mass			
	Motor Type	S427D	S427T	S427Q
200		4.9kg (10.8lb)	5.8kg (12.8lb)	6.7kg (14.8lb)
250		5.4kg (11.9lb)	6.3kg (13.9lb)	7.2kg (15.9lb)
300		5.9kg (13lb)	6.8kg (15lb)	7.7kg (17lb)
350		6.4kg (14.1lb)	7.3kg (16.1lb)	8.2kg (18.1lb)
400		6.9kg (15.2lb)	7.8kg (17.2lb)	8.7kg (19.2lb)
450		7.4kg (16.3lb)	8.3kg (18.3lb)	9.2kg (20.3lb)
500		7.9kg (17.5lb)	8.8kg (19.4lb)	9.7kg (21.4lb)
550		8.4kg (18.6lb)	9.3kg (20.5lb)	10.2kg (22.5lb)
600		9.1kg (20lb)	10kg (22lb)	10.9kg (24lb)
650		9.6kg (21.1lb)	10.5kg (23.1lb)	11.4kg (25.1lb)
700		10.1kg (22.2lb)	11kg (24.2lb)	11.9kg (26.2lb)
750		10.6kg (23.4lb)	11.5kg (25.3lb)	12.4kg (27.3lb)
800		11.1kg (24.5lb)	12kg (26.4lb)	12.9kg (28.4lb)
850		11.6kg (25.6lb)	12.5kg (27.6lb)	13.4kg (29.5lb)
900		12.1kg (26.7lb)	13kg (28.7lb)	13.9kg (30.6lb)
950		12.6kg (27.8lb)	13.5kg (29.8lb)	14.4kg (31.8lb)
1000		13.1kg (28.9lb)	14kg (30.9lb)	14.9kg (32.9lb)
1050		13.8kg (30.4lb)	14.7kg (32.4lb)	15.6kg (34.3lb)
1100		14.3kg (31.5lb)	15.2kg (33.5lb)	16.1kg (35.4lb)
1150		14.8kg (32.6lb)	15.7kg (34.6lb)	16.6kg (36.6lb)
1200		15.3kg (33.7lb)	16.2kg (35.7lb)	17.1kg (37.7lb)
1250		15.8kg (34.8lb)	16.7kg (36.8lb)	17.6kg (38.8lb)
1300		16.3kg (35.9lb)	17.2kg (37.9lb)	18.1kg (39.9lb)
1350		16.8kg (37lb)	17.7kg (39lb)	18.6kg (41lb)
1400		17.3kg (38.1lb)	18.2kg (40.1lb)	19.1kg (42.1lb)
1450		17.8kg (39.2lb)	18.7kg (41.2lb)	19.6kg (43.2lb)
1500		18.3kg (40.3lb)	19.2kg (42.3lb)	20.1kg (44.3lb)
1550		18.8kg (41.4lb)	19.7kg (43.4lb)	20.6kg (45.4lb)
1600		19.3kg (42.5lb)	20.2kg (44.5lb)	21.1kg (46.5lb)
1650		19.8kg (43.6lb)	20.7kg (45.6lb)	21.6kg (47.6lb)
1700		20.3kg (44.7lb)	21.2kg (46.7lb)	22.1kg (48.7lb)
1750		20.8kg (45.8lb)	21.7kg (47.8lb)	22.6kg (49.8lb)
1800		21.3kg (46.9lb)	22.2kg (48.9lb)	23.1kg (50.9lb)
1850		21.8kg (48lb)	22.7kg (50lb)	23.6kg (52lb)
1900		22.3kg (49.1lb)	23.2kg (51.1lb)	24.1kg (53.1lb)
1950		22.8kg (50.3lb)	23.7kg (52.2lb)	24.6kg (54.2lb)
2000		23.3kg (51.4lb)	24.2kg (53.3lb)	25.1kg (55.3lb)

Lead Wire

Motor Cable	
Wire Type	UL 2464
Wire AWG	16
U phase	White
V phase	Black
W phase	Green / Yellow
300mm lead wire bare leads	
The bending radius of the motor cable should be 36.6mm as suggested by the wire manufacturer.	

Supplied Connector (Motor Cable)

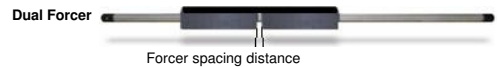
Receptacle housing	VLR-03V
Plug Housing	VLP-03V
Retainer	VLS-03V
Pin contact	SVM-61T-P2.0
Socket contact	SVF-61T-P2.0
(To be installed by the user)	

Hall Effect Cable (Optional)

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 Connection	Gray / Black
400mm lead wire bare leads	
The bending radius of the hall effect cable should be 27.6mm as suggested by the wire manufacturer.	

Connector (Hall Effect Cable)

None supplied



	S427T	S427Q
Forcer spacing distance	50	50
Pole (North-South) distance	90	90
Forcer length	310	400
Flip forcers	No	Yes