

# Visit nipponpulse.com to download 3D CAD drawings and 2D prints of this motor.

	L32	0D	L32	ОТ		L320Q	
Electrical Specs	L320D	L320D-1S	L320T	L320T-1S	L320Q	L320Q-1S	L320Q-2S
Continuous Force <sup>1</sup>	55N (12	2.4lbs)	82N (18	3.4lbs)		109N (24.5lbs)	
Continuous Current <sup>1</sup>	1.3Arms	2.5Arms	1.3Arms	3.8Arms	1.3Arms	5.0Arms	2.5Arms
Acceleration Force <sup>2</sup>	218N (	49lbs)	327N (7	3.5lbs)		436N (98lbs)	
Acceleration Current <sup>2</sup>	5.0Arms	10.0Arms	5.0Arms	15.0Arms	5.0Arms	20.0Arms	10.0Arms
Force Constant (K <sub>f</sub> )	44N/amp	22N/amp	65N/amp	22N/amp	87N/amp	22N/amp	44N/amp
Back EMF (K <sub>e</sub> )	15V/m/s	7.3V/m/s	22V/m/s	7.3V/m/s	29V/m/s	7.3V/m/s	15V/m/s
Resistance 25°C³	12Ω	2.9Ω	17Ω	1.9Ω	23Ω	1.4Ω	5.8Ω
Inductance <sup>3</sup>	14mH	3.5mH	21mH	2.3mH	28mH	1.8mH	7.0mH
Electric Time Constant	1.22	ms	1.22	ms		1.22ms	
Fundamental Motor Constant (K <sub>m</sub> )	12.84	N√W	15.72	√W		18.15N√W	
Magnetic Pitch (North-North)	120r	nm	120r	nm		120mm	

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.

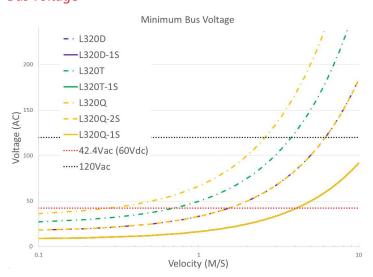
<sup>&</sup>lt;sup>3</sup> All winding parameters listed are measured line-to-line (phase-to-phase).

	L320D		L320T		L320Q		
Thermal Specs	L320D	L320D L320D-1S L320T L320T-1S		L320Q	L320Q-1S	L320Q-2S	
Max Phase Temperature⁴	135°C (275°F)						
Thermal Resistance (Coil) (K <sub>q</sub> )	6.1°C/W (	6.1°C/W (43°F/W) 4.1°C/W (39.4°F/W)		9.4°F/W)	3.1°C/W (37.6°F/W)		<b>'</b> )

<sup>&</sup>lt;sup>4</sup>The standard temperature difference between the coil and the forcer surface is 25°C.



# **Bus Voltage**



### **Part Numbering System**

Shaft Size Alt. Winding Options Forcer Size (A) Parallel Option Usable Stroke (S) **Options** 320 <u>X</u>  $\underline{XX}$  $\underline{XX}$ XXXXst XX  $\underline{XX}$ D: Double (2) windings Blank: Standard Blank: Single Motor 100-2000mm Blank: Standard Blank: Standard T: Triple (3) windings \_S: Alternate PL: Parallel Motors WP: Water Resistant FO: Forcer Only Q: Quadruple (4) windings Winding HA: Digital Hall Effect SO: Shaft Only CE: CE Type Motor FG: Frame Ground

<sup>&</sup>lt;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>&</sup>lt;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.

	L320D		L320T		L320Q		
Forcer Specs	L320D	L320D-1S	L320T	L320T-1S	L320Q	L320Q-1S	L320Q-2S
Forcer Length (A)	160mm (6.3in)		220mm	(8.7in)	280mm (11.0in)		
Forcer Width	60mm (2.4in)						
Forcer Screw Pitch (P)	140mm (5.5in)		200mm	200mm (7.9in) 260mm (10.2in)			
Forcer Weight	1.3kg (2.9lbs)		1.9kg (4.2lbs) 2.6kg (5.7lbs)		2.6kg (5.7lbs)	2.4kg (5.3lbs)	
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 L	ength				

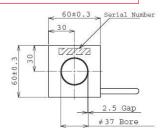
P = See Forcer Screw Pitch

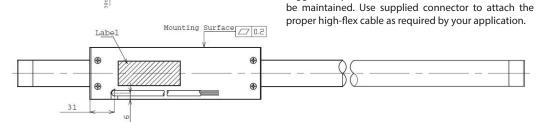
Unless otherwise specified,

dimensions are in mm

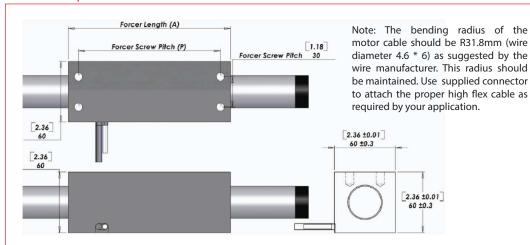
Reference End Yellow Mark

Note: 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





# **Hall Effect Specs**



#### 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	

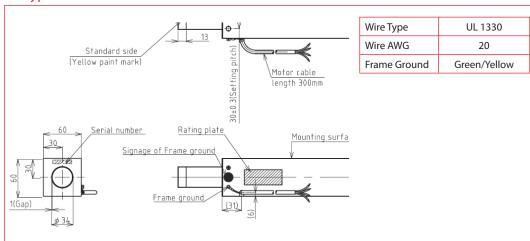
The bending radius of the sensor cable should be R27.6mm (wire diameter 5.3 \* 6) as suggested by the wire manufacturer. This radius should be maintained. Attach the proper high flex cable as required by your application.

# 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.

# FG Type Motor Cable



## Forcer Spacing Distance

Spec	L320T	L320Q
Forcer Spacing Distance	20mm	
Pole (N/S) Distance	60mm	
Forcer Length	220mm	280mm
Flip Forcers	No	Yes

Tandem L320D forcers are possible, but are equivalent to one (1) L320Q forcer and thus are not listed above.

# Support and Bending

Stroke	Support Length (L2)	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

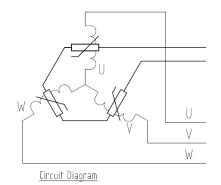
Total Length (L)=Stroke (S)+Forcer Length(A)+(Support Length (L2)x2)

support and benaning					
Stroke	Support Length (L2)	Max. Bending			
0~750	50mm	0.00mm			
751~1000	70mm	0.30mm			
1001~1500	70mm	0.70mm			
1501~max	100mm	0.70mm			

#### **Tandem Forcer**

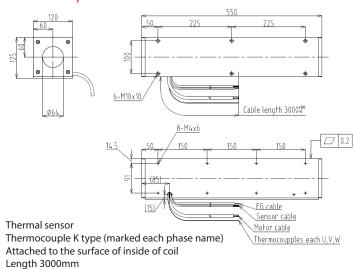


# **THM Option**



4. Thermistor PTCSL20T071DBE(Vishay)

# Thermocouple



Standard Lead Wire

UL 2464FA

20

Red

White

Black

 $\epsilon$ 

UL 1330

Red

White

Black

300mm lead wire bare leads. The bending radius of the motor cable

should be 31.8mm as suggested by the

300mm lead wire bare leads. The bending radius of the motor cable should be 1.96mm as suggested by the wire manufacturer. FG type with insulating sheet between coils and case. Meets all requirements of

CE Option - Lead Wire

Wire Type

Wire AWG

U Phase

V Phase

W Phase

wire manufacturer.

**Ground Wire** 

Wire Type Wire AWG U Phase

V Phase

W Phase

EN60034-1 (1998).

# Shaft Length (L)

# **Shaft Mass**

Stroke	L320D	L320T	L320Q
100	Stroke is less than the	e electrical cycle length	. Contact Nippon Pulse.
150	410mm (16.1in)	470mm (18.5in)	530mm (20.9in)
200	460mm (18.1in)	520mm (20.5in)	580mm (22.8in)
250	510mm (20.1in)	570mm (22.4in)	630mm (24.8in)
300	560mm (22in)	620mm (24.4in)	680mm (26.8in)
350	610mm (24in)	670mm (26.4in)	730mm (28.7in)
400	660mm (26in)	720mm (28.3in)	780mm (30.7in)
450	710mm (28in)	770mm (30.3in)	830mm (32.7in)
500	760mm (29.9in)	820mm (32.3in)	880mm (34.6in)
550	810mm (31.9in)	870mm (34.3in)	930mm (36.6in)
600	860mm (33.9in)	920mm (36.2in)	980mm (38.6in)
650	910mm (35.8in)	970mm (38.2in)	1030mm (40.6in)
700	960mm (37.8in)	1020mm (40.2in)	1080mm (42.5in)
750	1010mm (39.8in)	1070mm (42.1in)	1130mm (44.5in)
800	1100mm (43.3in)	1160mm (45.7in)	1220mm (48in)
850	1150mm (45.3in)	1210mm (47.6in)	1270mm (50in)
900	1200mm (47.2in)	1260mm (49.6in)	1320mm (52in)
950	1250mm (49.2in)	1310mm (51.6in)	1370mm (53.9in)
1000	1300mm (51.2in)	1360mm (53.5in)	1420mm (55.9in)
1050	1350mm (53.1in)	1410mm (55.5in)	1470mm (57.9in)
1100	1400mm (55.1in)	1460mm (57.5in)	1520mm (59.8in)
1150	1450mm (57.1in)	1510mm (59.4in)	1570mm (61.8in)
1200	1500mm (59.1in)	1560mm (61.4in)	1620mm (63.8in)
1250	1550mm (61in)	1610mm (63.4in)	1670mm (65.7in)
1300	1600mm (63in)	1660mm (65.4in)	1720mm (67.7in)
1350	1650mm (65in)	1710mm (67.3in)	1770mm (69.7in)
1400	1700mm (66.9in)	1760mm (69.3in)	1820mm (71.7in)
1450	1750mm (68.9in)	1810mm (71.3in)	1870mm (73.6in)
1500	1800mm (70.9in)	1860mm (73.2in)	1920mm (75.6in)
1550	1910mm (75.2in)	1970mm (77.6in)	2030mm (79.9in)
1600	1960mm (77.2in)	2020mm (79.5in)	2080mm (81.9in)
1650	2010mm (79.1in)	2070mm (81.5in)	2130mm (83.9in)
1700	2060mm (81.1in)	2120mm (83.5in)	2180mm (85.8in)
1750	2110mm (83.1in)	2170mm (85.4in)	2230mm (87.8in)
1800	2160mm (85in)	2220mm (87.4in)	2280mm (89.8in)
1850	2210mm (87in)	2270mm (89.4in)	2330mm (91.7in)
1900	2260mm (89in)	2320mm (91.3in)	2380mm (93.7in)
1950	2310mm (90.9in)	2370mm (93.3in)	2430mm (95.7in)
2000	2360mm (92.9in)	2420mm (95.3in)	2480mm (97.6in)

100         Stroke is less than the electrical cycle length. Contact Nippon Pulse.           150         2.1kg (4.6lb)         2.4kg (5.3lb)         2.8kg (6.2lb)           200         2.4kg (5.3lb)         2.7kg (6lb)         3kg (6.6lb)           250         2.7kg (6lb)         3kg (6.6lb)         3.3kg (7.3lb)           300         2.9kg (6.4lb)         3.3kg (7.3lb)         3.6kg (7.9lb)           350         3.2kg (7.1lb)         3.6kg (7.9lb)         3.9kg (8.6lb)           400         3.5kg (7.7lb)         3.8kg (8.4lb)         4.2kg (9.3lb)           450         3.8kg (8.4lb)         4.1kg (9lb)         4.5kg (9.9lb)           500         4.1kg (9lb)         4.4kg (9.7lb)         4.7kg (10.4lb)           550         4.3kg (9.5lb)         4.7kg (10.4lb)         5kg (11lb)           600         4.6kg (10.1lb)         5kg (11lb)         5.3kg (11.7lb)           650         4.9kg (10.8lb)         5.2kg (11.5lb)         5.5kg (12.1lb)         5.9kg (12.3lb)           700         5.2kg (11.5lb)         5.5kg (12.1lb)         5.9kg (12.3lb)           750         5.5kg (12.1lb)         5.8kg (12.8lb)         6.1kg (13.4lb)           800         5.8kg (12.8lb)         6.2kg (13.7lb)         6.5kg (14.3lb)           80<	Stroke	L320D	L320T	L320Q	
200         2.4kg (5.3lb)         2.7kg (6lb)         3kg (6.6lb)           250         2.7kg (6lb)         3kg (6.6lb)         3.3kg (7.3lb)           300         2.9kg (6.4lb)         3.3kg (7.3lb)         3.6kg (7.9lb)           350         3.2kg (7.1lb)         3.6kg (7.9lb)         3.9kg (8.6lb)           400         3.5kg (7.7lb)         3.8kg (8.4lb)         4.2kg (9.3lb)           450         3.8kg (8.4lb)         4.1kg (9lb)         4.5kg (9.9lb)           500         4.1kg (9lb)         4.4kg (9.7lb)         4.7kg (10.4lb)           550         4.3kg (9.5lb)         4.7kg (10.4lb)         5kg (11lb)           600         4.6kg (10.1lb)         5kg (11lb)         5.3kg (11.7lb)           650         4.9kg (10.8lb)         5.2kg (11.5lb)         5.6kg (12.3lb)           700         5.2kg (11.5lb)         5.5kg (12.1lb)         5.9kg (13lb)           750         5.5kg (12.1lb)         5.8kg (12.8lb)         6.1kg (13.4lb)           850         6.1kg (13.4lb)         6.5kg (14.3lb)         6.5kg (14.3lb)           850         6.1kg (13.4lb)         6.7kg (14.8lb)         7.1kg (15.7lb)           950         6.7kg (14.8lb)         7.3kg (16.1lb)         7.6kg (16.8lb)           1000         7kg	100	Stroke is less than the	nan the electrical cycle length. Contact Nippon Pu		
250         2.7kg (6lb)         3kg (6.6lb)         3.3kg (7.3lb)           300         2.9kg (6.4lb)         3.3kg (7.3lb)         3.6kg (7.9lb)           350         3.2kg (7.1lb)         3.6kg (7.9lb)         3.9kg (8.6lb)           400         3.5kg (7.7lb)         3.8kg (8.4lb)         4.2kg (9.3lb)           450         3.8kg (8.4lb)         4.1kg (9lb)         4.5kg (9.9lb)           500         4.1kg (9lb)         4.4kg (9.7lb)         4.7kg (10.4lb)           550         4.3kg (9.5lb)         4.7kg (10.4lb)         5kg (11lb)           600         4.6kg (10.1lb)         5kg (11lb)         5.3kg (11.7lb)           650         4.9kg (10.8lb)         5.2kg (11.5lb)         5.6kg (12.3lb)           700         5.2kg (11.5lb)         5.5kg (12.1lb)         5.9kg (13lb)           750         5.5kg (12.1lb)         5.8kg (12.8lb)         6.1kg (13.4lb)           800         5.8kg (12.8lb)         6.2kg (13.7lb)         6.5kg (14.3lb)           850         6.1kg (13.4lb)         6.5kg (14.3lb)         6.8kg (15lb)           950         6.7kg (14.8lb)         7.1kg (15.7lb)         7.6kg (16.3lb)           1000         7kg (15.4lb)         7.3kg (16.1lb)         7.6kg (16.8lb)           1050	150	2.1kg (4.6lb)	2.4kg (5.3lb)	2.8kg (6.2lb)	
300 2.9kg (6.4lb) 3.3kg (7.3lb) 3.6kg (7.9lb) 3.9kg (8.6lb) 400 3.5kg (7.7lb) 3.8kg (8.4lb) 4.2kg (9.3lb) 450 3.8kg (8.4lb) 4.1kg (9lb) 4.5kg (9.9lb) 500 4.1kg (9lb) 4.4kg (9.7lb) 4.7kg (10.4lb) 550 4.3kg (9.5lb) 5.2kg (11.5lb) 5.3kg (11.7lb) 5.3kg (11.8lb) 5.2kg (11.5lb) 5.9kg (11.8lb) 5.9kg (13.8lb) 6.1kg (13.4lb) 6.5kg (14.3lb) 6.7kg (14.8lb) 7.1kg (15.7lb) 7.0kg (15.4lb) 7.3kg (16.1lb) 7.6kg (16.8lb) 7.9kg (17.4lb) 7.5kg (16.5lb) 7.9kg (17.4lb) 8.2kg (18lb) 8.2kg (18lb) 8.2kg (18lb) 8.5kg (18.7lb) 9.5kg (17.2lb) 8.2kg (18.5lb) 8.7kg (19.2lb) 9.1kg (20.1lb) 1300 8.7kg (19.2lb) 9.3kg (20.5lb) 9.9kg (21.8lb) 9.9kg (21.8lb) 9.9kg (21.8lb) 9.9kg (21.8lb) 10.0kg (22.5lb) 9.9kg (21.8lb) 10.0kg (22.5lb) 9.9kg (21.8lb) 10.0kg (22.5lb) 10.2kg (22.5lb) 10.8kg (23.8lb) 11.1kg (24.5lb) 11.7kg (25.8lb) 11.7kg (2	200	2.4kg (5.3lb)	2.7kg (6lb)	3kg (6.6lb)	
350 3.2kg (7.1lb) 3.6kg (7.9lb) 3.9kg (8.6lb) 400 3.5kg (7.7lb) 3.8kg (8.4lb) 4.2kg (9.3lb) 450 3.8kg (8.4lb) 4.1kg (9lb) 4.5kg (9.9lb) 500 4.1kg (9lb) 4.4kg (9.7lb) 4.7kg (10.4lb) 550 4.3kg (9.5lb) 4.7kg (10.4lb) 5kg (11lb) 550 4.9kg (10.8lb) 5.2kg (11.5lb) 5.6kg (12.3lb) 5.5kg (12.3lb) 6.1kg (13.4lb) 6.5kg (14.3lb) 6.5kg (14.3lb) 6.5kg (14.3lb) 6.5kg (14.3lb) 6.5kg (14.3lb) 6.7kg (14.8lb) 7.1kg (15.7lb) 7.0kg (15.4lb) 7.3kg (16.1lb) 7.6kg (16.8lb) 7.9kg (17.4lb) 7.5kg (16.5lb) 7.9kg (17.4lb) 8.2kg (18.9lb) 8.2kg (18.9lb) 8.2kg (18.9lb) 8.2kg (18.9lb) 9.3kg (20.5lb) 9.3kg (20.5lb) 9.3kg (20.5lb) 9.3kg (20.5lb) 9.3kg (20.5lb) 9.3kg (22.5lb) 10.2kg (22.5lb) 10.2kg (23.8lb) 10.2kg (23.8lb) 10.2kg (23.8lb) 11.2kg (24.5lb) 11.7kg (25.8lb) 11.7kg (25.8l	250	2.7kg (6lb)	3kg (6.6lb)	3.3kg (7.3lb)	
400         3.5kg (7.7lb)         3.8kg (8.4lb)         4.2kg (9.3lb)           450         3.8kg (8.4lb)         4.1kg (9lb)         4.5kg (9.9lb)           500         4.1kg (9lb)         4.4kg (9.7lb)         4.7kg (10.4lb)           500         4.1kg (9lb)         4.4kg (9.7lb)         4.7kg (10.4lb)           550         4.3kg (9.5lb)         4.7kg (10.4lb)         5kg (11lb)           600         4.6kg (10.1lb)         5kg (11lb)         5.3kg (11.7lb)           650         4.9kg (10.8lb)         5.2kg (11.5lb)         5.6kg (12.3lb)           700         5.2kg (11.5lb)         5.5kg (12.1lb)         5.9kg (13lb)           700         5.2kg (11.5lb)         5.5kg (12.3lb)         6.1kg (13.4lb)           800         5.8kg (12.8lb)         6.2kg (13.7lb)         6.5kg (14.3lb)           850         6.1kg (13.4lb)         6.5kg (14.3lb)         6.8kg (15lb)           900         6.4kg (14.1lb)         6.7kg (14.8lb)         7.1kg (15.7lb)           950         6.7kg (14.8lb)         7.3kg (16.1lb)         7.6kg (16.8lb)           1000         7kg (15.4lb)         7.3kg (16.1lb)         7.6kg (16.8lb)           1050         7.3kg (16.5lb)         7.9kg (17.4lb)         8.2kg (18lb)           1150	300	2.9kg (6.4lb)	3.3kg (7.3lb)	3.6kg (7.9lb)	
450         3.8kg (8.4lb)         4.1kg (9lb)         4.5kg (9.9lb)           500         4.1kg (9lb)         4.4kg (9.7lb)         4.7kg (10.4lb)           550         4.3kg (9.5lb)         4.7kg (10.4lb)         5kg (11lb)           600         4.6kg (10.1lb)         5kg (11lb)         5.3kg (11.7lb)           650         4.9kg (10.8lb)         5.2kg (11.5lb)         5.6kg (12.3lb)           700         5.2kg (11.5lb)         5.5kg (12.1lb)         5.9kg (13lb)           750         5.5kg (12.1lb)         5.8kg (12.8lb)         6.1kg (13.4lb)           800         5.8kg (12.8lb)         6.2kg (13.7lb)         6.5kg (14.3lb)           850         6.1kg (13.4lb)         6.5kg (14.3lb)         6.8kg (15lb)           900         6.4kg (14.1lb)         6.7kg (14.8lb)         7.1kg (15.7lb)           950         6.7kg (14.8lb)         7kg (15.4lb)         7.4kg (16.3lb)           1000         7kg (15.4lb)         7.3kg (16.1lb)         7.6kg (16.8lb)         7.9kg (17.4lb)           1100         7.5kg (16.5lb)         7.9kg (17.4lb)         8.2kg (18lb)         8.2kg (18lb)           1200         8.1kg (17.9lb)         8.4kg (18.5lb)         8.8kg (19.4lb)         9.1kg (20.1lb)           1300         8.7kg (19.2lb)	350	3.2kg (7.1lb)	3.6kg (7.9lb)	3.9kg (8.6lb)	
500         4.1kg (9lb)         4.4kg (9.7lb)         4.7kg (10.4lb)           550         4.3kg (9.5lb)         4.7kg (10.4lb)         5kg (11lb)           600         4.6kg (10.1lb)         5kg (11lb)         5.3kg (11.7lb)           650         4.9kg (10.8lb)         5.2kg (11.5lb)         5.6kg (12.3lb)           700         5.2kg (11.5lb)         5.5kg (12.1lb)         5.9kg (13lb)           750         5.5kg (12.1lb)         5.8kg (12.8lb)         6.1kg (13.4lb)           800         5.8kg (12.8lb)         6.2kg (13.7lb)         6.5kg (14.3lb)           850         6.1kg (13.4lb)         6.5kg (14.3lb)         6.8kg (15lb)           900         6.4kg (14.1lb)         6.7kg (14.8lb)         7.1kg (15.7lb)           950         6.7kg (14.8lb)         7.3kg (16.1lb)         7.6kg (16.8lb)           1000         7kg (15.4lb)         7.3kg (16.1lb)         7.6kg (16.8lb)           1000         7.8kg (16.5lb)         7.9kg (17.4lb)         8.2kg (18lb)           1100         7.5kg (16.5lb)         7.9kg (17.4lb)         8.2kg (18lb)           1200         8.1kg (17.9lb)         8.2kg (18lb)         8.5kg (19.4lb)           1250         8.4kg (18.5lb)         8.7kg (19.2lb)         9.1kg (20.1lb)           130	400	3.5kg (7.7lb)	3.8kg (8.4lb)	4.2kg (9.3lb)	
550         4.3kg (9.5lb)         4.7kg (10.4lb)         5kg (11lb)           600         4.6kg (10.1lb)         5kg (11lb)         5.3kg (11.7lb)           650         4.9kg (10.8lb)         5.2kg (11.5lb)         5.6kg (12.3lb)           700         5.2kg (11.5lb)         5.5kg (12.1lb)         5.9kg (13lb)           750         5.5kg (12.1lb)         5.8kg (12.8lb)         6.1kg (13.4lb)           800         5.8kg (12.8lb)         6.2kg (13.7lb)         6.5kg (14.3lb)           850         6.1kg (13.4lb)         6.5kg (14.3lb)         6.8kg (15lb)           900         6.4kg (14.1lb)         6.7kg (14.8lb)         7.1kg (15.7lb)           950         6.7kg (14.8lb)         7kg (15.4lb)         7.4kg (16.3lb)           1000         7kg (15.4lb)         7.3kg (16.1lb)         7.6kg (16.8lb)           1050         7.3kg (16.1lb)         7.9kg (17.4lb)         8.2kg (18lb)           1100         7.5kg (16.5lb)         7.9kg (17.4lb)         8.2kg (18lb)           1200         8.1kg (17.9lb)         8.4kg (18.5lb)         8.8kg (19.4lb)           1200         8.1kg (19.2lb)         9.1kg (20.1lb)           1300         8.7kg (19.2lb)         9.3kg (20.5lb)           9.2kg (20.3lb)         9.6kg (21.2lb) <t< td=""><td>450</td><td>3.8kg (8.4lb)</td><td>4.1kg (9lb)</td><td>4.5kg (9.9lb)</td></t<>	450	3.8kg (8.4lb)	4.1kg (9lb)	4.5kg (9.9lb)	
600	500	4.1kg (9lb)	4.4kg (9.7lb)	4.7kg (10.4lb)	
650         4.9kg (10.8lb)         5.2kg (11.5lb)         5.6kg (12.3lb)           700         5.2kg (11.5lb)         5.5kg (12.1lb)         5.9kg (13lb)           750         5.5kg (12.1lb)         5.8kg (12.8lb)         6.1kg (13.4lb)           800         5.8kg (12.8lb)         6.2kg (13.7lb)         6.5kg (14.3lb)           850         6.1kg (13.4lb)         6.5kg (14.3lb)         6.8kg (15lb)           900         6.4kg (14.1lb)         6.7kg (14.8lb)         7.1kg (15.7lb)           950         6.7kg (14.8lb)         7kg (15.4lb)         7.4kg (16.3lb)           1000         7kg (15.4lb)         7.3kg (16.1lb)         7.6kg (16.8lb)           1050         7.3kg (16.1lb)         7.6kg (16.8lb)         7.9kg (17.4lb)           1100         7.5kg (16.5lb)         7.9kg (17.4lb)         8.2kg (18lb)           1150         7.8kg (17.2lb)         8.2kg (18lb)         8.5kg (18.7lb)           1200         8.1kg (17.9lb)         8.4kg (18.5lb)         8.8kg (19.4lb)           1250         8.4kg (18.5lb)         8.7kg (19.2lb)         9.1kg (20.1lb)           1300         8.7kg (19.2lb)         9.3kg (20.5lb)         9.3kg (20.5lb)           1400         9.2kg (20.3lb)         9.6kg (21.2lb)         9.9kg (21.8lb)	550	4.3kg (9.5lb)	4.7kg (10.4lb)	5kg (11lb)	
700         5.2kg (11.5lb)         5.5kg (12.1lb)         5.9kg (13lb)           750         5.5kg (12.1lb)         5.8kg (12.8lb)         6.1kg (13.4lb)           800         5.8kg (12.8lb)         6.2kg (13.7lb)         6.5kg (14.3lb)           850         6.1kg (13.4lb)         6.5kg (14.3lb)         6.8kg (15lb)           900         6.4kg (14.1lb)         6.7kg (14.8lb)         7.1kg (15.7lb)           950         6.7kg (14.8lb)         7.3kg (15.4lb)         7.4kg (16.3lb)           1000         7kg (15.4lb)         7.3kg (16.1lb)         7.6kg (16.8lb)           1050         7.3kg (16.1lb)         7.6kg (16.8lb)         7.9kg (17.4lb)           1100         7.5kg (16.5lb)         7.9kg (17.4lb)         8.2kg (18lb)           1150         7.8kg (17.2lb)         8.2kg (18lb)         8.5kg (18.7lb)           1200         8.1kg (17.9lb)         8.4kg (18.5lb)         8.8kg (19.4lb)           1250         8.4kg (18.5lb)         8.7kg (19.2lb)         9.1kg (20.1lb)           1300         8.7kg (19.2lb)         9.3kg (20.5lb)         9.3kg (20.5lb)           1400         9.2kg (20.3lb)         9.6kg (21.2lb)         9.9kg (21.8lb)           1500         9.8kg (20.3lb)         10.1kg (22.3lb)         10.5kg (23.1lb)	600	4.6kg (10.1lb)	5kg (11lb)	5.3kg (11.7lb)	
750         5.5kg (12.1lb)         5.8kg (12.8lb)         6.1kg (13.4lb)           800         5.8kg (12.8lb)         6.2kg (13.7lb)         6.5kg (14.3lb)           850         6.1kg (13.4lb)         6.5kg (14.3lb)         6.8kg (15lb)           900         6.4kg (14.1lb)         6.7kg (14.8lb)         7.1kg (15.7lb)           950         6.7kg (14.8lb)         7kg (15.4lb)         7.4kg (16.3lb)           1000         7kg (15.4lb)         7.3kg (16.1lb)         7.6kg (16.8lb)           1050         7.3kg (16.1lb)         7.6kg (16.8lb)         7.9kg (17.4lb)           1100         7.5kg (16.5lb)         7.9kg (17.4lb)         8.2kg (18lb)           1150         7.8kg (17.2lb)         8.2kg (18lb)         8.5kg (18.7lb)           1200         8.1kg (17.9lb)         8.4kg (18.5lb)         8.8kg (19.4lb)           1250         8.4kg (18.5lb)         8.7kg (19.2lb)         9.1kg (20.1lb)           1300         8.7kg (19.2lb)         9kg (19.8lb)         9.3kg (20.5lb)           1350         8.9kg (19.6lb)         9.3kg (20.5lb)         9.6kg (21.2lb)           1400         9.2kg (20.3lb)         9.6kg (21.2lb)         9.9kg (21.8lb)           1500         9.8kg (21.6lb)         10.1kg (22.3lb)         10.5kg (23.1lb)	650	4.9kg (10.8lb)	5.2kg (11.5lb)	5.6kg (12.3lb)	
800         5.8kg (12.8lb)         6.2kg (13.7lb)         6.5kg (14.3lb)           850         6.1kg (13.4lb)         6.5kg (14.3lb)         6.8kg (15lb)           900         6.4kg (14.1lb)         6.7kg (14.8lb)         7.1kg (15.7lb)           950         6.7kg (14.8lb)         7kg (15.4lb)         7.4kg (16.3lb)           1000         7kg (15.4lb)         7.3kg (16.1lb)         7.6kg (16.8lb)           1050         7.3kg (16.1lb)         7.6kg (16.8lb)         7.9kg (17.4lb)           1100         7.5kg (16.5lb)         7.9kg (17.4lb)         8.2kg (18lb)           1150         7.8kg (17.2lb)         8.2kg (18lb)         8.5kg (18.7lb)           1200         8.1kg (17.9lb)         8.4kg (18.5lb)         8.8kg (19.4lb)           1250         8.4kg (18.5lb)         8.7kg (19.2lb)         9.1kg (20.1lb)           1300         8.7kg (19.2lb)         9kg (19.8lb)         9.3kg (20.5lb)           1350         8.9kg (19.6lb)         9.3kg (20.5lb)         9.6kg (21.2lb)           1400         9.2kg (20.3lb)         9.6kg (21.2lb)         9.9kg (21.8lb)           150         9.8kg (21.6lb)         10.2kg (22.5lb)         10.2kg (22.5lb)           150         9.8kg (21.6lb)         10.1kg (22.3lb)         10.9kg (23.1lb)	700	5.2kg (11.5lb)	5.5kg (12.1lb)	5.9kg (13lb)	
850         6.1kg (13.4lb)         6.5kg (14.3lb)         6.8kg (15lb)           900         6.4kg (14.1lb)         6.7kg (14.8lb)         7.1kg (15.7lb)           950         6.7kg (14.8lb)         7kg (15.4lb)         7.4kg (16.3lb)           1000         7kg (15.4lb)         7.3kg (16.1lb)         7.6kg (16.8lb)           1050         7.3kg (16.1lb)         7.6kg (16.8lb)         7.9kg (17.4lb)           1100         7.5kg (16.5lb)         7.9kg (17.4lb)         8.2kg (18lb)           1150         7.8kg (17.2lb)         8.2kg (18lb)         8.5kg (18.7lb)           1200         8.1kg (17.9lb)         8.4kg (18.5lb)         8.8kg (19.4lb)           1250         8.4kg (18.5lb)         8.7kg (19.2lb)         9.1kg (20.1lb)           1300         8.7kg (19.2lb)         9kg (19.8lb)         9.3kg (20.5lb)           1350         8.9kg (19.6lb)         9.3kg (20.5lb)         9.6kg (21.2lb)           1400         9.2kg (20.3lb)         9.6kg (21.2lb)         9.9kg (21.8lb)           1450         9.5kg (20.9lb)         9.8kg (21.6lb)         10.2kg (22.5lb)           1500         9.8kg (21.6lb)         10.1kg (22.3lb)         10.5kg (23.1lb)           1500         10.2kg (22.5lb)         10.5kg (23.1lb)         10.9kg (24lb)	750	5.5kg (12.1lb)	5.8kg (12.8lb)	6.1kg (13.4lb)	
900 6.4kg (14.1lb) 6.7kg (14.8lb) 7.1kg (15.7lb) 950 6.7kg (14.8lb) 7kg (15.4lb) 7.4kg (16.3lb) 1000 7kg (15.4lb) 7.3kg (16.1lb) 7.6kg (16.8lb) 1050 7.3kg (16.1lb) 7.6kg (16.8lb) 7.9kg (17.4lb) 1100 7.5kg (16.5lb) 7.9kg (17.4lb) 8.2kg (18lb) 1150 7.8kg (17.2lb) 8.2kg (18lb) 8.5kg (18.7lb) 1200 8.1kg (17.9lb) 8.4kg (18.5lb) 8.8kg (19.4lb) 1250 8.4kg (18.5lb) 8.7kg (19.2lb) 9.1kg (20.1lb) 1300 8.7kg (19.2lb) 9kg (19.8lb) 9.3kg (20.5lb) 1350 8.9kg (19.6lb) 9.3kg (20.5lb) 9.6kg (21.2lb) 1400 9.2kg (20.3lb) 9.6kg (21.2lb) 9.9kg (21.8lb) 1450 9.5kg (20.9lb) 9.8kg (21.6lb) 10.2kg (22.5lb) 1500 9.8kg (21.6lb) 10.1kg (22.3lb) 10.5kg (23.1lb) 1550 10.2kg (22.5lb) 10.5kg (23.1lb) 10.9kg (24lb) 1600 10.5kg (23.1lb) 11.1kg (24.5lb) 11.5kg (25.4lb) 1700 11.1kg (24.5lb) 11.7kg (25.8lb) 12kg (26.5lb)	800	5.8kg (12.8lb)	6.2kg (13.7lb)	6.5kg (14.3lb)	
950 6.7kg (14.8lb) 7kg (15.4lb) 7.4kg (16.3lb) 1000 7kg (15.4lb) 7.3kg (16.1lb) 7.6kg (16.8lb) 1050 7.3kg (16.1lb) 7.6kg (16.8lb) 7.9kg (17.4lb) 1100 7.5kg (16.5lb) 7.9kg (17.4lb) 8.2kg (18lb) 1150 7.8kg (17.2lb) 8.2kg (18lb) 8.5kg (18.7lb) 1200 8.1kg (17.9lb) 8.4kg (18.5lb) 8.8kg (19.4lb) 1250 8.4kg (18.5lb) 8.7kg (19.2lb) 9.1kg (20.1lb) 1300 8.7kg (19.2lb) 9kg (19.8lb) 9.3kg (20.5lb) 1350 8.9kg (19.6lb) 9.3kg (20.5lb) 9.6kg (21.2lb) 1400 9.2kg (20.3lb) 9.6kg (21.2lb) 9.9kg (21.8lb) 1450 9.5kg (20.9lb) 9.8kg (21.6lb) 10.2kg (22.5lb) 1500 9.8kg (21.6lb) 10.1kg (22.3lb) 10.5kg (23.1lb) 1550 10.2kg (22.5lb) 10.5kg (23.1lb) 10.9kg (24lb) 1600 10.5kg (23.1lb) 10.8kg (23.8lb) 11.2kg (24.7lb) 1650 10.8kg (23.8lb) 11.1kg (24.5lb) 11.7kg (25.8lb) 1700 11.1kg (24.5lb) 11.7kg (25.8lb) 12kg (26.5lb)	850	6.1kg (13.4lb)	6.5kg (14.3lb)	6.8kg (15lb)	
1000         7kg (15.4lb)         7.3kg (16.1lb)         7.6kg (16.8lb)           1050         7.3kg (16.1lb)         7.6kg (16.8lb)         7.9kg (17.4lb)           1100         7.5kg (16.5lb)         7.9kg (17.4lb)         8.2kg (18lb)           1150         7.8kg (17.2lb)         8.2kg (18lb)         8.5kg (18.7lb)           1200         8.1kg (17.9lb)         8.4kg (18.5lb)         8.8kg (19.4lb)           1250         8.4kg (18.5lb)         8.7kg (19.2lb)         9.1kg (20.1lb)           1300         8.7kg (19.2lb)         9kg (19.8lb)         9.3kg (20.5lb)           1350         8.9kg (19.6lb)         9.3kg (20.5lb)         9.6kg (21.2lb)           1400         9.2kg (20.3lb)         9.6kg (21.2lb)         9.9kg (21.8lb)           1450         9.5kg (20.9lb)         9.8kg (21.6lb)         10.2kg (22.5lb)           1500         9.8kg (21.6lb)         10.1kg (22.3lb)         10.5kg (23.1lb)           1550         10.2kg (22.5lb)         10.5kg (23.1lb)         10.9kg (24lb)           1650         10.8kg (23.8lb)         11.1kg (24.5lb)         11.5kg (25.4lb)           1700         11.1kg (24.5lb)         11.7kg (25.8lb)         12kg (26.5lb)	900	6.4kg (14.1lb)	6.7kg (14.8lb)	7.1kg (15.7lb)	
1050         7.3kg (16.1lb)         7.6kg (16.8lb)         7.9kg (17.4lb)           1100         7.5kg (16.5lb)         7.9kg (17.4lb)         8.2kg (18lb)           1150         7.8kg (17.2lb)         8.2kg (18lb)         8.5kg (18.7lb)           1200         8.1kg (17.9lb)         8.4kg (18.5lb)         8.8kg (19.4lb)           1250         8.4kg (18.5lb)         8.7kg (19.2lb)         9.1kg (20.1lb)           1300         8.7kg (19.2lb)         9kg (19.8lb)         9.3kg (20.5lb)           1350         8.9kg (19.6lb)         9.3kg (20.5lb)         9.6kg (21.2lb)           1400         9.2kg (20.3lb)         9.6kg (21.2lb)         9.9kg (21.8lb)           1450         9.5kg (20.9lb)         9.8kg (21.6lb)         10.2kg (22.5lb)           1500         9.8kg (21.6lb)         10.1kg (22.3lb)         10.5kg (23.1lb)           1550         10.2kg (22.5lb)         10.5kg (23.1lb)         10.9kg (24lb)           1600         10.5kg (23.1lb)         10.8kg (23.8lb)         11.2kg (24.7lb)           1650         10.8kg (23.8lb)         11.1kg (24.5lb)         11.7kg (25.8lb)           1700         11.1kg (24.5lb)         11.7kg (25.8lb)         12kg (26.5lb)	950	6.7kg (14.8lb)	7kg (15.4lb)	7.4kg (16.3lb)	
1100       7.5kg (16.5lb)       7.9kg (17.4lb)       8.2kg (18lb)         1150       7.8kg (17.2lb)       8.2kg (18lb)       8.5kg (18.7lb)         1200       8.1kg (17.9lb)       8.4kg (18.5lb)       8.8kg (19.4lb)         1250       8.4kg (18.5lb)       8.7kg (19.2lb)       9.1kg (20.1lb)         1300       8.7kg (19.2lb)       9kg (19.8lb)       9.3kg (20.5lb)         1350       8.9kg (19.6lb)       9.3kg (20.5lb)       9.6kg (21.2lb)         1400       9.2kg (20.3lb)       9.6kg (21.2lb)       9.9kg (21.8lb)         1450       9.5kg (20.9lb)       9.8kg (21.6lb)       10.2kg (22.5lb)         1500       9.8kg (21.6lb)       10.1kg (22.3lb)       10.5kg (23.1lb)         1550       10.2kg (22.5lb)       10.5kg (23.1lb)       10.9kg (24lb)         1600       10.5kg (23.1lb)       10.8kg (23.8lb)       11.2kg (24.7lb)         1650       10.8kg (23.8lb)       11.1kg (24.5lb)       11.5kg (25.4lb)         1700       11.1kg (24.5lb)       11.4kg (25.8lb)       12kg (26.5lb)	1000	7kg (15.4lb)	7.3kg (16.1lb)	7.6kg (16.8lb)	
1150         7.8kg (17.2lb)         8.2kg (18lb)         8.5kg (18.7lb)           1200         8.1kg (17.9lb)         8.4kg (18.5lb)         8.8kg (19.4lb)           1250         8.4kg (18.5lb)         8.7kg (19.2lb)         9.1kg (20.1lb)           1300         8.7kg (19.2lb)         9kg (19.8lb)         9.3kg (20.5lb)           1350         8.9kg (19.6lb)         9.3kg (20.5lb)         9.6kg (21.2lb)           1400         9.2kg (20.3lb)         9.6kg (21.2lb)         9.9kg (21.8lb)           1450         9.5kg (20.9lb)         9.8kg (21.6lb)         10.2kg (22.5lb)           1500         9.8kg (21.6lb)         10.1kg (22.3lb)         10.5kg (23.1lb)           1550         10.2kg (22.5lb)         10.5kg (23.1lb)         10.9kg (24lb)           1600         10.5kg (23.1lb)         10.8kg (23.8lb)         11.2kg (24.7lb)           1650         10.8kg (23.8lb)         11.1kg (24.5lb)         11.5kg (25.4lb)           1700         11.1kg (24.5lb)         11.7kg (25.8lb)         12kg (26.5lb)	1050	7.3kg (16.1lb)	7.6kg (16.8lb)	7.9kg (17.4lb)	
1200       8.1kg (17.9lb)       8.4kg (18.5lb)       8.8kg (19.4lb)         1250       8.4kg (18.5lb)       8.7kg (19.2lb)       9.1kg (20.1lb)         1300       8.7kg (19.2lb)       9kg (19.8lb)       9.3kg (20.5lb)         1350       8.9kg (19.6lb)       9.3kg (20.5lb)       9.6kg (21.2lb)         1400       9.2kg (20.3lb)       9.6kg (21.2lb)       9.9kg (21.8lb)         1450       9.5kg (20.9lb)       9.8kg (21.6lb)       10.2kg (22.5lb)         1500       9.8kg (21.6lb)       10.1kg (22.3lb)       10.5kg (23.1lb)         1550       10.2kg (22.5lb)       10.5kg (23.1lb)       10.9kg (24lb)         1600       10.5kg (23.1lb)       10.8kg (23.8lb)       11.2kg (24.7lb)         1650       10.8kg (23.8lb)       11.1kg (24.5lb)       11.5kg (25.4lb)         1700       11.1kg (24.5lb)       11.4kg (25.1lb)       11.7kg (25.8lb)         1750       11.3kg (24.9lb)       11.7kg (25.8lb)       12kg (26.5lb)	1100	7.5kg (16.5lb)	7.9kg (17.4lb)	8.2kg (18lb)	
1250       8.4kg (18.5lb)       8.7kg (19.2lb)       9.1kg (20.1lb)         1300       8.7kg (19.2lb)       9kg (19.8lb)       9.3kg (20.5lb)         1350       8.9kg (19.6lb)       9.3kg (20.5lb)       9.6kg (21.2lb)         1400       9.2kg (20.3lb)       9.6kg (21.2lb)       9.9kg (21.8lb)         1450       9.5kg (20.9lb)       9.8kg (21.6lb)       10.2kg (22.5lb)         1500       9.8kg (21.6lb)       10.1kg (22.3lb)       10.5kg (23.1lb)         1550       10.2kg (22.5lb)       10.5kg (23.1lb)       10.9kg (24lb)         1600       10.5kg (23.1lb)       10.8kg (23.8lb)       11.2kg (24.7lb)         1650       10.8kg (23.8lb)       11.1kg (24.5lb)       11.5kg (25.4lb)         1700       11.1kg (24.5lb)       11.4kg (25.1lb)       11.7kg (25.8lb)         1750       11.3kg (24.9lb)       11.7kg (25.8lb)       12kg (26.5lb)	1150	7.8kg (17.2lb)	8.2kg (18lb)	8.5kg (18.7lb)	
1300       8.7kg (19.2lb)       9kg (19.8lb)       9.3kg (20.5lb)         1350       8.9kg (19.6lb)       9.3kg (20.5lb)       9.6kg (21.2lb)         1400       9.2kg (20.3lb)       9.6kg (21.2lb)       9.9kg (21.8lb)         1450       9.5kg (20.9lb)       9.8kg (21.6lb)       10.2kg (22.5lb)         1500       9.8kg (21.6lb)       10.1kg (22.3lb)       10.5kg (23.1lb)         1550       10.2kg (22.5lb)       10.5kg (23.1lb)       10.9kg (24lb)         1600       10.5kg (23.1lb)       10.8kg (23.8lb)       11.2kg (24.7lb)         1650       10.8kg (23.8lb)       11.1kg (24.5lb)       11.5kg (25.4lb)         1700       11.1kg (24.5lb)       11.4kg (25.1lb)       11.7kg (25.8lb)         1750       11.3kg (24.9lb)       11.7kg (25.8lb)       12kg (26.5lb)	1200	8.1kg (17.9lb)	8.4kg (18.5lb)	8.8kg (19.4lb)	
1350       8.9kg (19.6lb)       9.3kg (20.5lb)       9.6kg (21.2lb)         1400       9.2kg (20.3lb)       9.6kg (21.2lb)       9.9kg (21.8lb)         1450       9.5kg (20.9lb)       9.8kg (21.6lb)       10.2kg (22.5lb)         1500       9.8kg (21.6lb)       10.1kg (22.3lb)       10.5kg (23.1lb)         1550       10.2kg (22.5lb)       10.5kg (23.1lb)       10.9kg (24lb)         1600       10.5kg (23.1lb)       10.8kg (23.8lb)       11.2kg (24.7lb)         1650       10.8kg (23.8lb)       11.1kg (24.5lb)       11.5kg (25.4lb)         1700       11.1kg (24.5lb)       11.4kg (25.1lb)       11.7kg (25.8lb)         1750       11.3kg (24.9lb)       11.7kg (25.8lb)       12kg (26.5lb)	1250	8.4kg (18.5lb)	8.7kg (19.2lb)	9.1kg (20.1lb)	
1400       9.2kg (20.3lb)       9.6kg (21.2lb)       9.9kg (21.8lb)         1450       9.5kg (20.9lb)       9.8kg (21.6lb)       10.2kg (22.5lb)         1500       9.8kg (21.6lb)       10.1kg (22.3lb)       10.5kg (23.1lb)         1550       10.2kg (22.5lb)       10.5kg (23.1lb)       10.9kg (24lb)         1600       10.5kg (23.1lb)       10.8kg (23.8lb)       11.2kg (24.7lb)         1650       10.8kg (23.8lb)       11.1kg (24.5lb)       11.5kg (25.4lb)         1700       11.1kg (24.5lb)       11.4kg (25.1lb)       11.7kg (25.8lb)         1750       11.3kg (24.9lb)       11.7kg (25.8lb)       12kg (26.5lb)	1300	8.7kg (19.2lb)	9kg (19.8lb)	9.3kg (20.5lb)	
1450     9.5kg (20.9lb)     9.8kg (21.6lb)     10.2kg (22.5lb)       1500     9.8kg (21.6lb)     10.1kg (22.3lb)     10.5kg (23.1lb)       1550     10.2kg (22.5lb)     10.5kg (23.1lb)     10.9kg (24lb)       1600     10.5kg (23.1lb)     10.8kg (23.8lb)     11.2kg (24.7lb)       1650     10.8kg (23.8lb)     11.1kg (24.5lb)     11.5kg (25.4lb)       1700     11.1kg (24.5lb)     11.4kg (25.1lb)     11.7kg (25.8lb)       1750     11.3kg (24.9lb)     11.7kg (25.8lb)     12kg (26.5lb)	1350	8.9kg (19.6lb)	9.3kg (20.5lb)	9.6kg (21.2lb)	
1500     9.8kg (21.6lb)     10.1kg (22.3lb)     10.5kg (23.1lb)       1550     10.2kg (22.5lb)     10.5kg (23.1lb)     10.9kg (24lb)       1600     10.5kg (23.1lb)     10.8kg (23.8lb)     11.2kg (24.7lb)       1650     10.8kg (23.8lb)     11.1kg (24.5lb)     11.5kg (25.4lb)       1700     11.1kg (24.5lb)     11.4kg (25.1lb)     11.7kg (25.8lb)       1750     11.3kg (24.9lb)     11.7kg (25.8lb)     12kg (26.5lb)	1400	9.2kg (20.3lb)	9.6kg (21.2lb)	9.9kg (21.8lb)	
1550     10.2kg (22.5lb)     10.5kg (23.1lb)     10.9kg (24lb)       1600     10.5kg (23.1lb)     10.8kg (23.8lb)     11.2kg (24.7lb)       1650     10.8kg (23.8lb)     11.1kg (24.5lb)     11.5kg (25.4lb)       1700     11.1kg (24.5lb)     11.4kg (25.1lb)     11.7kg (25.8lb)       1750     11.3kg (24.9lb)     11.7kg (25.8lb)     12kg (26.5lb)	1450	9.5kg (20.9lb)	9.8kg (21.6lb)	10.2kg (22.5lb)	
1600     10.5kg (23.1lb)     10.8kg (23.8lb)     11.2kg (24.7lb)       1650     10.8kg (23.8lb)     11.1kg (24.5lb)     11.5kg (25.4lb)       1700     11.1kg (24.5lb)     11.4kg (25.1lb)     11.7kg (25.8lb)       1750     11.3kg (24.9lb)     11.7kg (25.8lb)     12kg (26.5lb)	1500	9.8kg (21.6lb)	10.1kg (22.3lb)	10.5kg (23.1lb)	
1650     10.8kg (23.8lb)     11.1kg (24.5lb)     11.5kg (25.4lb)       1700     11.1kg (24.5lb)     11.4kg (25.1lb)     11.7kg (25.8lb)       1750     11.3kg (24.9lb)     11.7kg (25.8lb)     12kg (26.5lb)	1550	10.2kg (22.5lb)	10.5kg (23.1lb)	10.9kg (24lb)	
1700 11.1kg (24.5lb) 11.4kg (25.1lb) 11.7kg (25.8lb) 1750 11.3kg (24.9lb) 11.7kg (25.8lb) 12kg (26.5lb)	1600	10.5kg (23.1lb)	10.8kg (23.8lb)	11.2kg (24.7lb)	
1750 11.3kg (24.9lb) 11.7kg (25.8lb) 12kg (26.5lb)	1650	10.8kg (23.8lb)	11.1kg (24.5lb)	11.5kg (25.4lb)	
	1700	11.1kg (24.5lb)	11.4kg (25.1lb)	11.7kg (25.8lb)	
1800 11.6kg (25.6lb) 12kg (26.5lb) 12.3kg (27.1lb)	1750	11.3kg (24.9lb)	11.7kg (25.8lb)	12kg (26.5lb)	
	1800	11.6kg (25.6lb)	12kg (26.5lb)	12.3kg (27.1lb)	
1850 11.9kg (26.2lb) 12.2kg (26.9lb) 12.6kg (27.8lb)	1850	11.9kg (26.2lb)	12.2kg (26.9lb)	12.6kg (27.8lb)	
1900 12.2kg (26.9lb) 12.5kg (27.6lb) 12.9kg (28.4lb)	1900	12.2kg (26.9lb)	12.5kg (27.6lb)	12.9kg (28.4lb)	
1950 12.5kg (27.6lb) 12.8kg (28.2lb) 13.1kg (28.9lb)	1950	12.5kg (27.6lb)	12.8kg (28.2lb)	13.1kg (28.9lb)	
2000 12.7kg (28lb) 13.1kg (28.9lb) 13.4kg (29.5lb)	2000	12.7kg (28lb)	13.1kg (28.9lb)	13.4kg (29.5lb)	

Additional stroke lengths are available (up to 3640 for L320D, 3580 for L320T and 3520 for L320Q). Contact Nippon Pulse for more information.