



LC Series

PRECISION

PLANETARY

LC - PRECISION PLANETARY GEAR REDUCERS

TYPE OF UNIT

INLINE PLANETARY

BACKLASH

	1-stage	2-stage
Standard	12'	15'
Reduced	6'	8'

RATIO

3:1 - 100:1

Size 50-9:1 (single)

Size 70-155 10:1(single)

OPERATING TEMP

32 - 104 degrees F

0 / 40 degrees C

PROTECTION

IP 64

MAX. NOISE LEVEL

< 70 db (A)

LUBRICATION

Synthetic Grease (standard)

ISO VG220 rating

AVAILABLE SIZES	50	70	90	120	155
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Continuous Torque (Nm)

Single stage	10...12	18...25	37...43	95...110	230...300
Double stage	10...12	18...25	37...43	95...110	230...300

Peak Torque (Nm)

Single stage	16...20	30...35	70...80	160...190	350...450
Double stage	16...20	30...35	70...80	160...190	350...450

E-Stop Torque (Nm)

Single stage	28...30	60...70	150...160	300...360	600...900
Double stage	28...30	60...70	150...160	300...360	600...900

Output shaft dia.	12mm	16mm	22mm	32mm	40mm
Output shaft length	24.5mm	36mm	46mm	70mm	97mm

INPUT DIA. (min)	6 mm	6 mm	9 mm	12.7 mm	19mm
INPUT DIA. (max)	14 mm	14 mm	19 mm	32 mm	38mm
INPUT ADAPTER	B5XX	B6XX	B8XX	B1XX	B3XX

XX TO BE DEFINED BY PILOT DIA AND BOLT CIRCLE DIMENSIONS

HOUSING (length)

SINGLE STAGE	53 mm	62mm	72.3 mm	101.1 mm	123.5 mm
DOUBLE STAGE	66.8 mm	78.7 mm	98.8 mm	133.6 mm	163 mm

HOUSING (diameter)	55 mm	70 mm	90 mm	120 mm	155 mm
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WEIGHT (LB.)

SINGLE STAGE	1.76	3.97	8.82	19.84	39.5
DOUBLE STAGE	2.2	4.63	11	24.25	50.25

FEATURES OF LC SERIES

Available with either standard or reduced backlash

Rigid ball bearings, suitably rated for an average service life of 20,000 hours under nominal operating conditions

Units are factory charged with synthetic grease of viscosity ISO VG220 suitable for operation in any mounting position and at ambient temperature in the 0°C...40°C range.

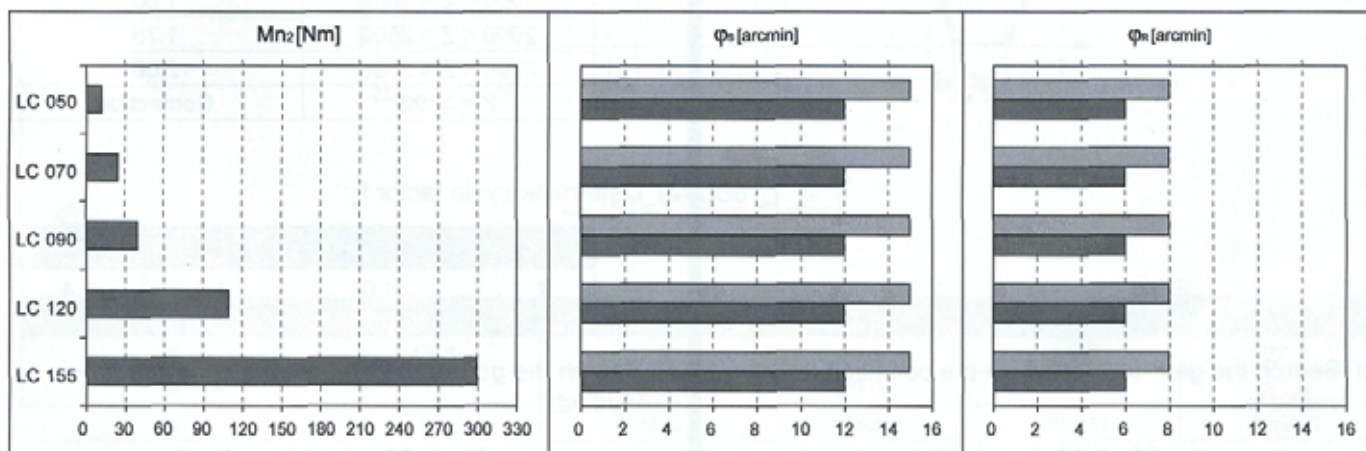
In the absence of contamination lubricant does not require periodical changes

Degree of protection IP64

Noise level $L_p \leq 70$ dB(A) - $n_1 = 3000$ min⁻¹

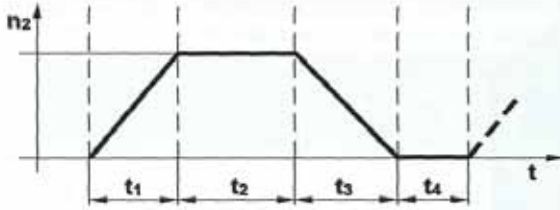
Numerous input configurations

Ratio $i = 10$ available for single-reduction units ($i = 9$ for frame size 050 alone)



SELECTING THE GEAR UNIT

- Determine intermittence I:



$$I [\%] = \frac{t_1 + t_2 + t_3}{t_1 + t_2 + t_3 + t_4}$$

t_1 = starting time
 t_2 = operating time at constant speed
 t_3 = stopping time
 t_4 = rest time

- 1) Determine the applicable duty for the application:

	$Z \leq 1000$	$Z > 1000$
$I < 60\%$	S5	S1
$I \geq 60\%$	S1	S1

S5 cyclic duty

- 2) Search the gear unit for which the condition is verified:

$$M_{a2} \geq M_{1max} \times i \times \eta$$

M_{1max} = Maximum acceleration torque of motor



Under no circumstances the maximum speed $[n_{1max}]$ permitted for the gear unit should be exceeded. Should the surface temperature exceed 90°C it is recommended that speed is reduced, or an auxiliary cooling system is provided.

S1 continuous duty

- 2) Determine service factor f_z :

Z	f_z
$Z \leq 1000$	1.00
$1000 < Z \leq 1500$	1.25
$1500 < Z \leq 2000$	1.50
$2000 < Z \leq 2500$	1.75
$2500 < Z \leq 3000$	2.00
$Z > 3000$	Contact us

- 3) Determine cycle factor f_o :

I	20%...60%	80%	100%
f_o	1.0	1.2	1.4

- 4) Search the gear unit for which the condition is verified:

$$M_{a2} \geq M_{1max} \times i \times \eta \times f_z \times f_o$$

SERVICE LIFE OF BEARINGS

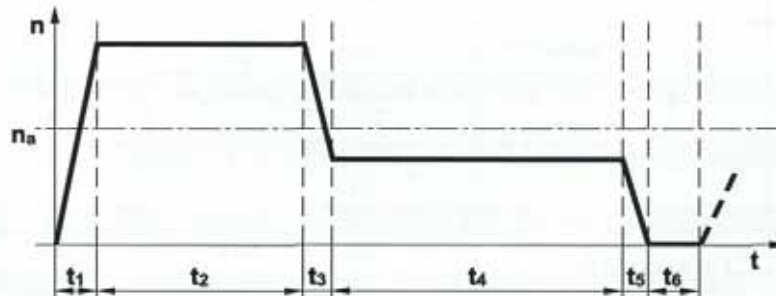
Service life of main bearings can be calculated through the equations where actual radial and axial forces are accounted for.

	A_2 [N]	Offset axial force
	R_2 [N]	Radial force
	D_a [mm]	Distance of axial force from shaft centre
	D_r [mm]	Distance of radial force from mounting flange

SERVICE LIFE CALCULATION FOR RIGID BALL BEARINGS

$$F_{eq} = \frac{A_2 \times D_a + R_2 \times (D_r + b)}{a}$$

$$n_a = \frac{n_1 \times t_1 + n_2 \times t_2 + \dots + n_5 \times t_5}{t_1 + t_2 + t_3 + t_4 + t_5 + t_6}$$



$$L_{10}(h) = \frac{16666}{n_a} \times \left(\frac{c}{F_{eq}} \right)^3$$

Load location factor	LC 050	LC 070	LC 090	LC 120	LC 155
a	13.5	17.8	18.1	23.6	27.8
b	16	20.3	20.6	27.6	31.3
c	7650	15900	16800	35000	55900

F_{eq} [N] = Equivalent force resulting from radial and axial forces applying simultaneously

n_a [min⁻¹] = Mean output speed

$L_{10}(h)$ = Theoretical service life of bearings

Calculate $e = A_2/F_{eq}$, and check that condition $e \leq 0.19$ is verified.
If $e > 0.19$ contact our Technical Service.

LC 050											
i	M _{n2} [Nm]	M _{a2} [Nm]	M _{p2} [Nm]	n ₁ [min ⁻¹]	n _{1max} [min ⁻¹]	φ _s [arcmin]	φ _R [arcmin]	C _t [Nm/arcmin]	R _{n2} [N]	A _{n2} [N]	η %
LC 050 1_3	10	16	28	3300	4000	12'	6'	0.9	500	600	97
LC 050 1_4	12	20	30	3500	5000	12'	6'	0.9	500	600	97
LC 050 1_5	12	20	30	3500	5000	12'	6'	0.9	500	600	97
LC 050 1_7	12	20	30	3700	5000	12'	6'	0.9	500	600	97
LC 050 1_9	10	16	28	4000	6000	12'	6'	0.9	500	600	97
LC 050 2_12	12	20	30	3300	4000	15'	8'	0.75	500	600	94
LC 050 2_15	12	20	30	3300	4000	15'	8'	0.75	500	600	94
LC 050 2_16	12	20	30	3500	5000	15'	8'	0.75	500	600	94
LC 050 2_20	12	20	30	3500	5000	15'	8'	0.75	500	600	94
LC 050 2_25	12	20	30	3500	5000	15'	8'	0.75	500	600	94
LC 050 2_28	12	20	30	3700	5000	15'	8'	0.75	500	600	94
LC 050 2_35	12	20	30	3700	5000	15'	8'	0.75	500	600	94
LC 050 2_36	12	20	30	4000	6000	15'	8'	0.75	500	600	94
LC 050 2_45	12	20	30	4000	6000	15'	8'	0.75	500	600	94
LC 050 2_81	10	16	28	4000	6000	15'	8'	0.75	500	600	94

LC 070

LC 070											
i	M _{n2} [Nm]	M _{a2} [Nm]	M _{p2} [Nm]	n ₁ [min ⁻¹]	n _{1max} [min ⁻¹]	φ _s [arcmin]	φ _R [arcmin]	C _t [Nm/arcmin]	R _{n2} [N]	A _{n2} [N]	η %
LC 070 1_3	18	30	60	3300	4000	12'	6'	3	1300	1400	97
LC 070 1_4	25	35	70	3500	5000	12'	6'	3	1300	1400	97
LC 070 1_5	25	35	70	3500	5000	12'	6'	3	1300	1400	97
LC 070 1_7	25	35	70	3700	5000	12'	6'	3	1300	1400	97
LC 070 1_10	18	30	60	4000	6000	12'	6'	3	1300	1400	97
LC 070 2_9	18	30	60	3300	4000	15'	8'	2.5	1300	1400	94
LC 070 2_12	25	35	70	3300	4000	15'	8'	2.5	1300	1400	94
LC 070 2_15	25	35	70	3300	4000	15'	8'	2.5	1300	1400	94
LC 070 2_16	25	35	70	3500	5000	15'	8'	2.5	1300	1400	94
LC 070 2_20	25	35	70	3500	5000	15'	8'	2.5	1300	1400	94
LC 070 2_25	25	35	70	3500	5000	15'	8'	2.5	1300	1400	94
LC 070 2_28	25	35	70	3700	5000	15'	8'	2.5	1300	1400	94
LC 070 2_30	18	30	60	4000	6000	15'	8'	2.5	1300	1400	94
LC 070 2_35	25	35	70	3700	5000	15'	8'	2.5	1300	1400	94
LC 070 2_40	25	35	70	4000	6000	15'	8'	2.5	1300	1400	94
LC 070 2_50	25	35	70	4000	6000	15'	8'	2.5	1300	1400	94
LC 070 2_70	25	35	70	4000	6000	15'	8'	2.5	1300	1400	94
LC 070 2_100	18	30	60	4000	6000	15'	8'	2.5	1300	1400	94

LC 090

LC 090											
i	M _{n2} [Nm]	M _{a2} [Nm]	M _{p2} [Nm]	n ₁ [min ⁻¹]	n _{1max} [min ⁻¹]	φ _s [arcmin]	φ _R [arcmin]	C _t [Nm/arcmin]	R _{n2} [N]	A _{n2} [N]	η %
LC 090 1_3	37	70	150	2900	3500	12'	6'	7	2200	1900	97
LC 090 1_4	43	80	160	3100	4500	12'	6'	7	2200	1900	97
LC 090 1_5	43	80	160	3200	4500	12'	6'	7	2200	1900	97
LC 090 1_7	43	80	160	3500	4500	12'	6'	7	2200	1900	97
LC 090 1_10	37	70	150	4000	6000	12'	6'	7	2200	1900	97
LC 090 2_9	37	70	150	2900	3500	15'	8'	5.9	2200	1900	94
LC 090 2_12	43	80	160	2900	3500	15'	8'	5.9	2200	1900	94
LC 090 2_15	43	80	160	2900	3500	15'	8'	5.9	2200	1900	94
LC 090 2_16	43	80	160	3100	4500	15'	8'	5.9	2200	1900	94
LC 090 2_20	43	80	160	3200	4500	15'	8'	5.9	2200	1900	94
LC 090 2_25	43	80	160	3200	4500	15'	8'	5.9	2200	1900	94
LC 090 2_28	43	80	160	3500	4500	15'	8'	5.9	2200	1900	94
LC 090 2_30	37	70	150	4000	6000	15'	8'	5.9	2200	1900	94
LC 090 2_35	43	80	160	3500	4500	15'	8'	5.9	2200	1900	94
LC 090 2_40	43	80	160	4000	6000	15'	8'	5.9	2200	1900	94
LC 090 2_50	43	80	160	4000	6000	15'	8'	5.9	2200	1900	94
LC 090 2_70	43	80	160	4000	6000	15'	8'	5.9	2200	1900	94
LC 090 2_100	37	70	150	4000	6000	15'	8'	5.9	2200	1900	94

LC 120

LC 120											
i	M _{n2} [Nm]	M _{a2} [Nm]	M _{p2} [Nm]	n ₁ [min ⁻¹]	n _{1max} [min ⁻¹]	φ _s [arcmin]	φ _R [arcmin]	C _t [Nm/arcmin]	R _{n2} [N]	A _{n2} [N]	η %
LC 120 1_3	95	160	300	2500	3500	12'	6'	22	3500	3000	97
LC 120 1_4	110	190	360	2800	4500	12'	6'	22	3500	3000	97
LC 120 1_5	110	190	360	3000	4500	12'	6'	22	3500	3000	97
LC 120 1_7	110	190	360	3000	4500	12'	6'	22	3500	3000	97
LC 120 1_10	95	160	300	3500	5000	12'	6'	22	3500	3000	97
LC 120 2_9	95	160	300	2500	3500	15'	8'	20.5	3500	3000	94
LC 120 2_12	110	190	360	2500	3500	15'	8'	20.5	3500	3000	94
LC 120 2_15	110	190	360	2500	3500	15'	8'	20.5	3500	3000	94
LC 120 2_16	110	190	360	2800	4500	15'	8'	20.5	3500	3000	94
LC 120 2_20	110	190	360	3000	4500	15'	8'	20.5	3500	3000	94
LC 120 2_25	110	190	360	3000	4500	15'	8'	20.5	3500	3000	94
LC 120 2_28	110	190	360	3000	4500	15'	8'	20.5	3500	3000	94
LC 120 2_30	95	160	300	3500	5000	15'	8'	20.5	3500	3000	94
LC 120 2_35	110	190	360	3000	4500	15'	8'	20.5	3500	3000	94
LC 120 2_40	110	190	360	3500	5000	15'	8'	20.5	3500	3000	94
LC 120 2_50	110	190	360	3500	5000	15'	8'	20.5	3500	3000	94
LC 120 2_70	110	190	360	3500	5000	15'	8'	20.5	3500	3000	94
LC 120 2_100	95	160	300	3500	5000	15'	8'	20.5	3500	3000	94

LC 155

LC 155											
I	M _{n2} [Nm]	M _{p2} [Nm]	M _{ρ2} [Nm]	n ₁ [min ⁻¹]	n _{1max} [min ⁻¹]	φ _S [arcmin]	φ _R [arcmin]	C _t [Nm/arcmin]	R _{n2} [N]	A _{n2} [N]	η %
LC 155 1 _ 3	250	380	600	2100	3600	12'	6'	43.0	6000	5000	97
LC 155 1 _ 4	300	450	700	2500	3600	12'	6'	43.0	6000	5000	97
LC 155 1 _ 5	300	450	900	2500	3600	12'	6'	43.0	6000	5000	97
LC 155 1 _ 7	300	450	900	2500	3600	12'	6'	43.0	6000	5000	97
LC 155 1 _ 10	230	350	750	2500	3600	12'	6'	43.0	6000	5000	97
LC 155 2 _ 9	250	380	600	3000	3600	15'	8'	37.5	6000	5000	94
LC 155 2 _ 12	300	450	700	2100	3600	15'	8'	37.5	6000	5000	94
LC 155 2 _ 15	300	450	900	2100	3600	15'	8'	37.5	6000	5000	94
LC 155 2 _ 16	300	450	700	3000	3600	15'	8'	37.5	6000	5000	94
LC 155 2 _ 20	300	450	900	3000	3600	15'	8'	37.5	6000	5000	94
LC 155 2 _ 25	300	450	900	3000	3600	15'	8'	37.5	6000	5000	94
LC 155 2 _ 28	300	450	900	3000	3600	15'	8'	37.5	6000	5000	94
LC 155 2 _ 30	250	380	600	3000	3600	15'	8'	37.5	6000	5000	94
LC 155 2 _ 35	300	450	900	3000	3600	15'	8'	37.5	6000	5000	94
LC 155 2 _ 40	300	450	700	3000	3600	15'	8'	37.5	6000	5000	94
LC 155 2 _ 50	300	450	900	3000	3600	15'	8'	37.5	6000	5000	94
LC 155 2 _ 70	300	450	900	3000	3600	15'	8'	37.5	6000	5000	94
LC 155 2 _ 100	230	350	750	3000	3600	15'	8'	37.5	6000	5000	94

MASS MOMENT OF INERTIA
LC 050

LC 050		
i	J [kgcm ²]	
	D = Ø6...Ø9.52	D = Ø11...Ø14
LC 050 1_3	0.06	0.08
LC 050 1_4	0.05	0.06
LC 050 1_5	0.04	0.06
LC 050 1_7	0.03	0.05
LC 050 1_9	0.03	0.05
LC 050 2_12	0.06	0.08
LC 050 2_15	0.06	0.08
LC 050 2_16	0.05	0.06
LC 050 2_20	0.04	0.06
LC 050 2_25	0.04	0.06
LC 050 2_28	0.03	0.05
LC 050 2_35	0.03	0.05
LC 050 2_36	0.03	0.05
LC 050 2_45	0.03	0.05
LC 050 2_81	0.03	0.05

LC 070

LC 070		
i	J [kgcm ²]	
	D = Ø6...Ø9.52	D = Ø11...Ø14
LC 070 1_3	0.10	0.12
LC 070 1_4	0.06	0.08
LC 070 1_5	0.05	0.07
LC 070 1_7	0.04	0.06
LC 070 1_10	0.03	0.05
LC 070 2_9	0.10	0.12
LC 070 2_12	0.10	0.11
LC 070 2_15	0.09	0.11
LC 070 2_16	0.06	0.08
LC 070 2_20	0.05	0.07
LC 070 2_25	0.05	0.06
LC 070 2_28	0.04	0.06
LC 070 2_30	0.03	0.05
LC 070 2_35	0.04	0.06
LC 070 2_40	0.03	0.05
LC 070 2_50	0.03	0.05
LC 070 2_70	0.03	0.05
LC 070 2_100	0.03	0.05

LC 090

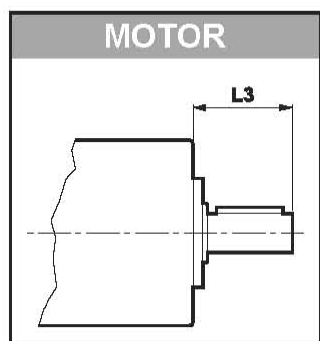
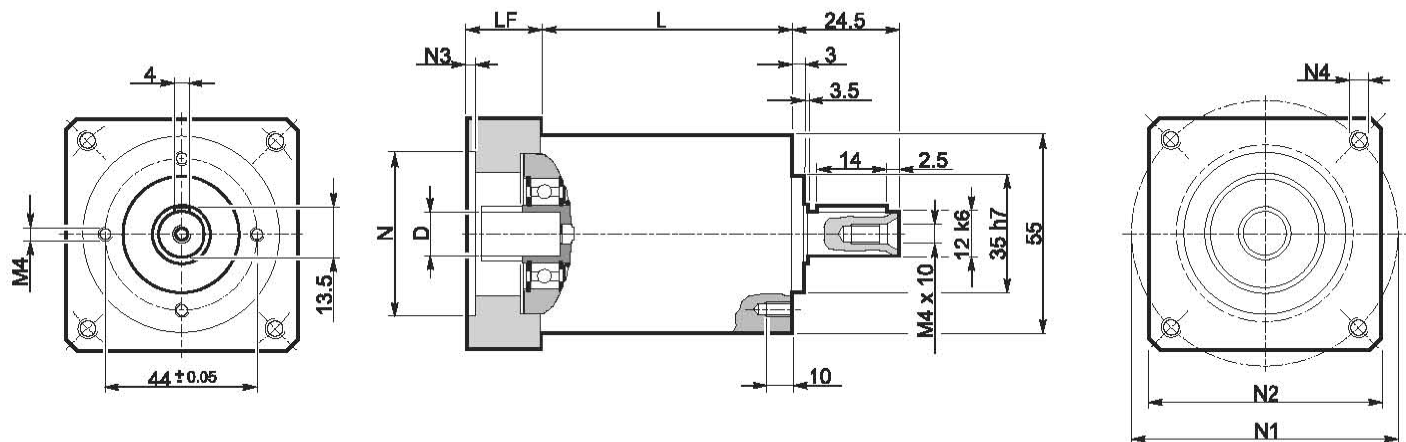
LC 090		
J [kgcm ²]		
i	D = Ø8...Ø12.7	D = Ø14...Ø19
LC 090 1_3	0.56	0.65
LC 090 1_4	0.37	0.46
LC 090 1_5	0.30	0.39
LC 090 1_7	0.24	0.33
LC 090 1_10	0.20	0.29
LC 090 2_9	0.51	0.60
LC 090 2_12	0.49	0.58
LC 090 2_15	0.48	0.57
LC 090 2_16	0.33	0.42
LC 090 2_20	0.28	0.37
LC 090 2_25	0.27	0.36
LC 090 2_28	0.23	0.32
LC 090 2_30	0.20	0.29
LC 090 2_35	0.23	0.31
LC 090 2_40	0.20	0.29
LC 090 2_50	0.20	0.29
LC 090 2_70	0.20	0.29
LC 090 2_100	0.20	0.29

LC 120

LC 120				
J [kgcm ²]				
i	D = Ø11...Ø12.7	D = Ø14...Ø19	D = Ø22...Ø24	D = Ø28...Ø32
LC 120 1_3	1.8	1.9	2.3	2.7
LC 120 1_4	1.0	1.1	1.5	1.9
LC 120 1_5	0.74	0.81	1.3	1.6
LC 120 1_7	0.48	0.56	1.0	1.4
LC 120 1_10	0.34	0.41	0.86	1.2
LC 120 2_9	1.7	1.8	2.2	2.6
LC 120 2_12	1.6	1.7	2.1	2.5
LC 120 2_15	1.6	1.6	2.1	2.4
LC 120 2_16	0.92	0.99	1.4	1.8
LC 120 2_20	0.90	0.97	1.4	1.8
LC 120 2_25	0.66	0.73	1.2	1.5
LC 120 2_28	0.45	0.52	0.97	1.3
LC 120 2_30	0.33	0.40	0.85	1.2
LC 120 2_35	0.44	0.52	0.96	1.3
LC 120 2_40	0.32	0.40	0.84	1.2
LC 120 2_50	0.32	0.39	0.84	1.2
LC 120 2_70	0.31	0.39	0.83	1.2
LC 120 2_100	0.31	0.39	0.83	1.2

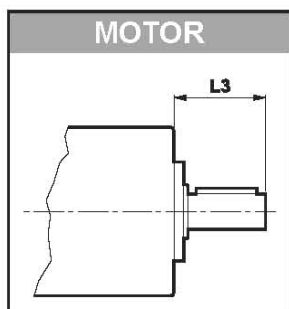
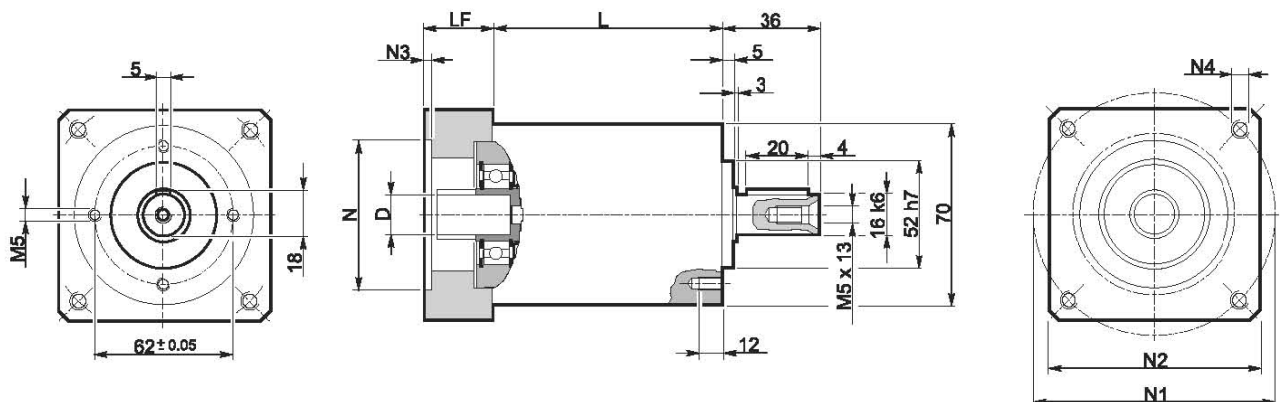
LC 155

LC 155				
i	J [kgcm ²]			
	D = Ø14...Ø19	D = Ø22...Ø24	D = Ø28...Ø32	D = Ø35...Ø38
LC 155 1 _ 3	6.8	7.0	7.4	8.7
LC 155 1 _ 4	3.9	4.1	4.5	5.8
LC 155 1 _ 5	2.8	3.0	3.3	4.7
LC 155 1 _ 7	1.8	2.0	2.3	3.7
LC 155 1 _ 10	1.2	1.4	1.7	3.1
LC 155 2 _ 9	5.0	5.2	5.5	6.9
LC 155 2 _ 12	4.7	4.9	5.2	6.6
LC 155 2 _ 15	4.5	4.7	5.1	6.5
LC 155 2 _ 16	2.7	2.9	3.3	4.6
LC 155 2 _ 20	2.0	2.2	2.6	3.9
LC 155 2 _ 25	2.0	2.2	2.5	3.9
LC 155 2 _ 28	1.4	1.6	1.9	3.3
LC 155 2 _ 30	1.0	1.2	1.6	2.9
LC 155 2 _ 35	1.3	1.5	1.9	3.2
LC 155 2 _ 40	1.0	1.2	1.5	2.9
LC 155 2 _ 50	1.0	1.2	1.5	2.9
LC 155 2 _ 70	1.0	1.2	1.5	2.9
LC 155 2 _ 100	1.0	1.2	1.5	2.9



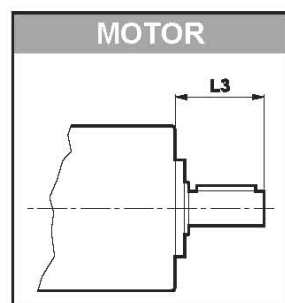
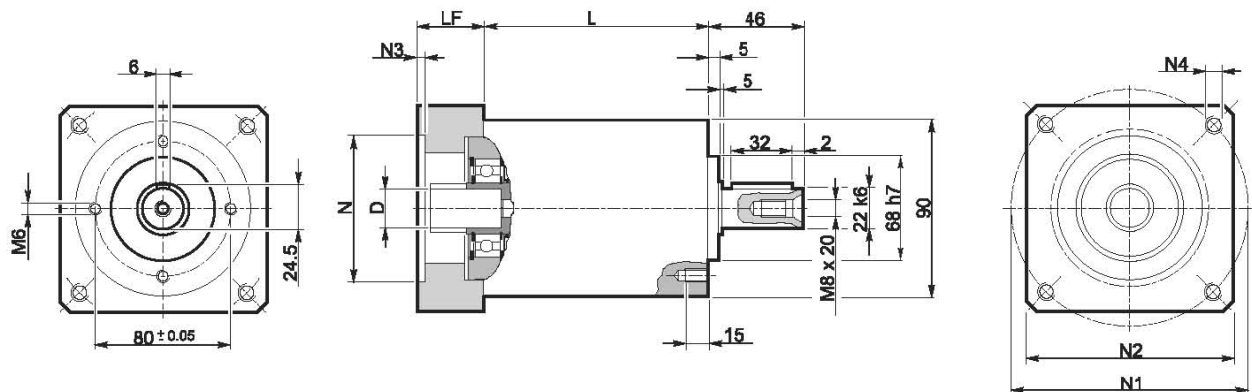
	L	kg
LC 050 1	53	0.8
LC 050 2	66.8	1.0

	D	N	N1	N2	N3	N4	LF	L3
LC 050_ 6...9 25 25...40 36...48	≤ 9 mm	25...40	36...48	55	4	4.5	25	25
LC 050_ 6...12 25 38.1 66.6	≤ 12 mm	38.1	66.6	60	3	M4x10	18	25
LC 050_ 6...12 25 40 63		40	63	60	3	M4x10	18	25
LC 050_ 6...12 25 50 60		50	60	60	3	M4x10	18	25
LC 050_ 6...12 25 60 75		60	75	63	3	M5x12	18	25
LC 050_ 6...14 30 50 65	≤ 14 mm	50	65	60	3	M5x12	23	30
LC 050_ 6...14 30 50 70		50	70	60	3	M4x10	23	30
LC 050_ 6...14 30 60 75		60	75	63	3	M5x12	23	30
LC 050_ 6...14 30 60 90		60	90	75	3	M5x12	23	30
LC 050_ 6...14 30 70 85		70	85	75	3	M6x15	23	30
LC 050_ 6...14 30 70 90		70	90	75	3	M5x12	23	30
LC 050_ 6...14 32 73 98.4		73	98.4	85	3	M5x12	25	32
LC 050_ 6...14 30 80 100		80	100	85	3	M6x15	23	30



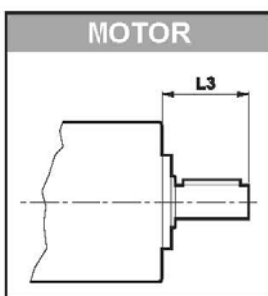
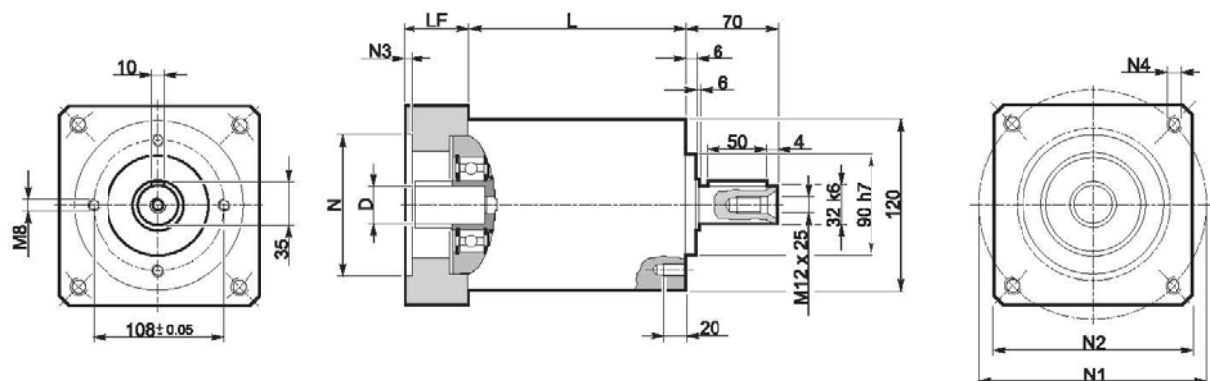
	L	kg
LC 070 1	62	1.8
LC 070 2	78.7	2.1

	D	N	N1	N2	N3	N4	LF	L3
LC 070_ 6...9 25 25...40 39...56	≤ 9 mm	25...40	39...56	65	4	4.5	25	25
LC 070_ 6...12 25 38.1 66.6	≤ 12 mm	38.1	66.6	60	3	M4x10	18	25
LC 070_ 6...12 25 40 63		40	63	60	3	M4x10	18	25
LC 070_ 6...12 25 50 60		50	60	60	3	M4x10	18	25
LC 070_ 6...12 25 60 75		60	75	63	3	M5x12	18	25
LC 070_ 6...14 30 50 65	≤ 14 mm	50	65	60	3	M5x12	23	30
LC 070_ 6...14 30 50 65 TH		50	65	60	3	5	25	30
LC 070_ 6...14 30 50 70		50	70	60	3	M4x10	23	30
LC 070_ 6...14 30 60 75		60	75	63	3	M5x12	23	30
LC 070_ 6...14 30 60 90		60	90	75	3	M5x12	23	30
LC 070_ 6...14 30 70 85		70	85	75	3	M6x15	23	30
LC 070_ 6...14 30 70 90		70	90	75	3	M5x12	23	30
LC 070_ 6...14 32 73 98.4		73	98.4	85	3	M5x12	25	32
LC 070_ 6...14 30 80 100		80	100	85	3	M6x15	23	30



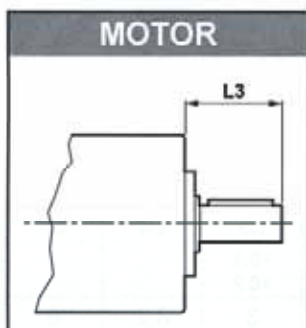
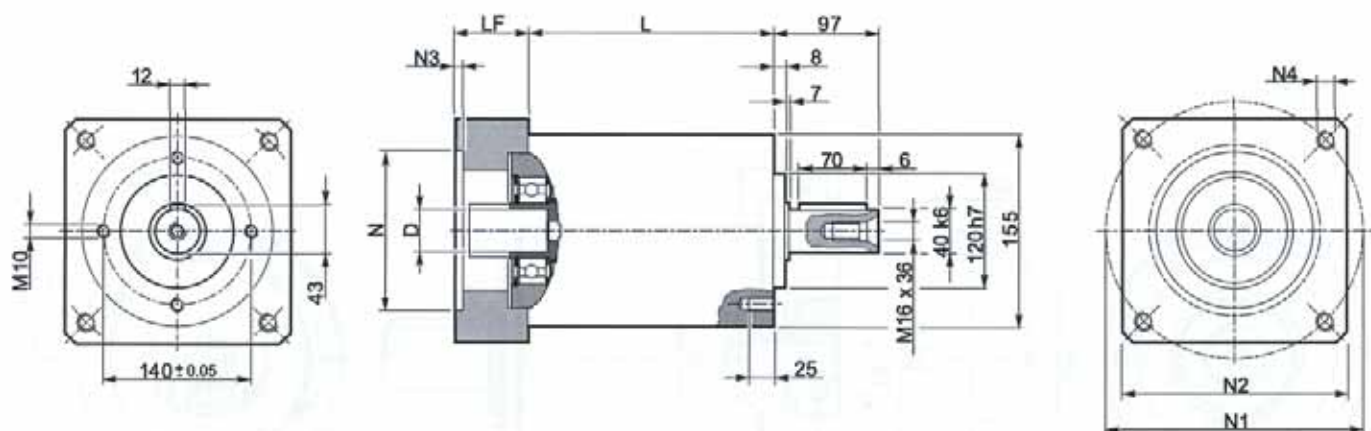
	L	kg
LC 090 1	72.3	4
LC 090 2	98.8	5

	D	N	N1	N2	N3	N4	LF	L3
LC 090_ 9...14 40 50 65	≤ 14 mm	50	65	80	4	M5x16	34	40
LC 090_ 9...14 40 50 65 TH		50	65	80	4	5	34	40
LC 090_ 9...14 40 50 70		50	70	80	4	M4x10	34	40
LC 090_ 9...14 40 50 95		50	95	80	4	M6x20	34	40
LC 090_ 9...14 40 60 75		60	75	65	4	M5x16	34	40
LC 090_ 9...14 40 60 75 TH		60	75	65	4	5	34	40
LC 090_ 9...14 40 73 98.4		73	98.4	85	4	M5x16	34	40
LC 090_ 9...14 40 78 63.5		78	63.5	90	-	Ø6.5	34	40
LC 090_ 9...16 40 60 90	≤ 16 mm	60	90	80	4	M5x16	34	40
LC 090_ 9...19 40 55.5 125.7	≤ 19 mm	55.5	125.7	105	4	M6x20	34	40
LC 090_ 9...19 40 70 85		70	85	80	4	M6x20	34	40
LC 090_ 9...19 40 70 85 TH		70	85	80	4	6	34	40
LC 090_ 9...19 40 70 90		70	90	80	4	M5x16	34	40
LC 090_ 9...19 40 80 100		80	100	90	4	M6x16	34	40
LC 090_ 9...19 40 95 115		95	115	100	4	M8x20	34	40
LC 090_ 9...19 40 95 130		95	130	115	4	M8x20	34	40
LC 090_ 9...19 40 110 130		110	130	115	4	M8x20	34	40
LC 090_ 9...19 50 110 145		110	145	120	6.5	M8x20	44	50
LC 090_ 9...19 60 110 145		110	145	120	6.5	M8x20	54	60



	L	kg
LC 120 1	101.1	9
LC 120 2	133.6	11

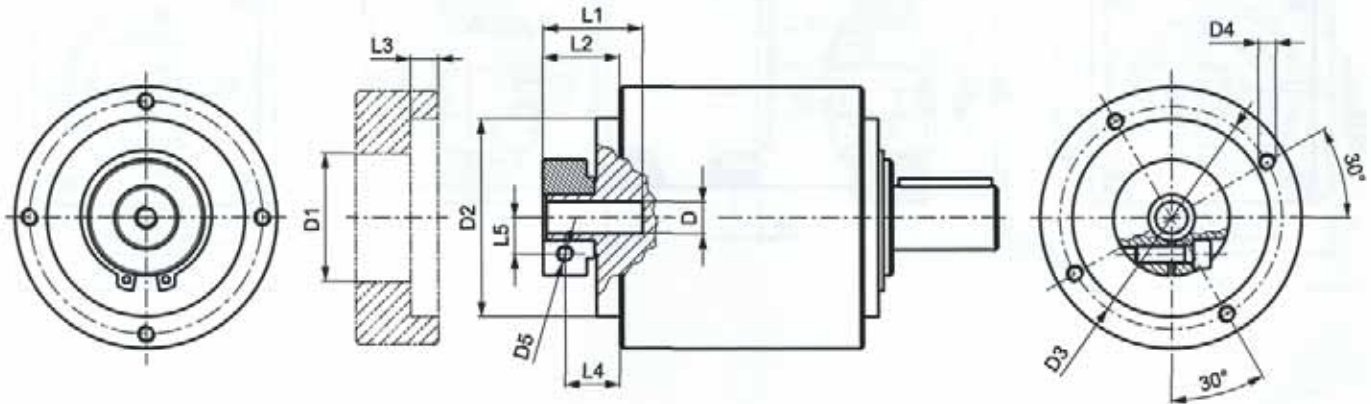
	D	N	N1	N2	N3	N4	LF	L3
LC 120_ 12.7...19 40 50 95	≤ 19 mm	50	95	100	5	M6x14	28	40
LC 120_ 12.7...19 40 55.5 125.7		55.5	125.7	105	5	M6x16	28	40
LC 120_ 12.7...19 40 60 75		60	75	100	5	M5x14	28	40
LC 120_ 12.7...19 40 60 75 TH		60	75	100	5	5	33	40
LC 120_ 12.7...19 40 70 85		70	85	100	5	M6x14	28	40
LC 120_ 12.7...19 40 70 85 TH		70	85	100	5	6	33	40
LC 120_ 12.7...19 40 70 90		70	90	100	5	M5x12	28	40
LC 120_ 12.7...19 40 80 100		80	100	100	5	M6x16	28	40
LC 120_ 12.7...19 40 95 115		95	115	100	5	M8x18	28	40
LC 120_ 12.7...19 40 95 130		95	130	115	5	M8x18	28	40
LC 120_ 12.7...19 40 110 130	≤ 24 mm	110	130	115	5	M8x18	28	40
LC 120_ 12.7...24 50 95 115		95	115	100	5	M8x18	38	50
LC 120_ 12.7...24 50 110 130		110	130	115	6.5	M8x20	38	50
LC 120_ 12.7...24 50 110 145		110	145	120	6.5	M8x20	38	50
LC 120_ 12.7...24 60 110 145		110	145	120	6.5	M8x20	48	60
LC 120_ 12.7...24 50 130 165		130	165	140	6.5	M10x20	38	50
LC 120_ 12.7...32 60 130 165	≤ 32 mm	130	165	140	6.5	M10x25	48	60



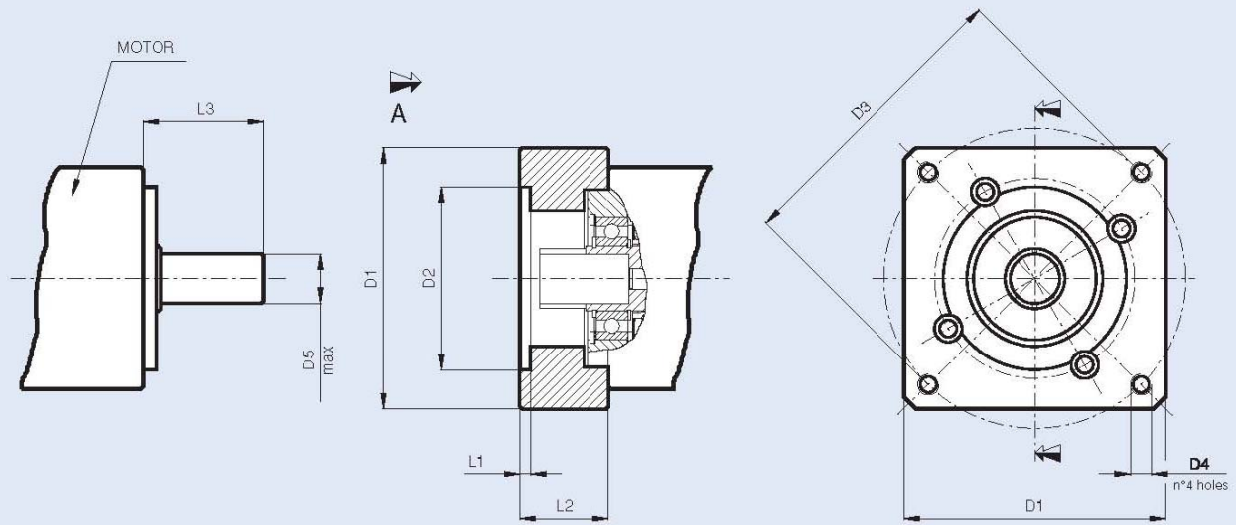
	L	KG
LC 155 1	123.5	17.9
LC 155 2	163	22.8

	D	N	N1	N2	N3	N4	LF	L3
LC 155 14...19 50 55.5 125.7	≤ 19 mm	55.5	125.7	130	4	M6x15	39.5	50
LC 155 14...19 50 80 100		80	100	130	4	M6x15	39.5	50
LC 155 14...24 50 95 115	≤ 24 mm	95	115	130	4	M8x20	39.5	50
LC 155 14...24 50 110 130		110	130	130	4	M8x20	39.5	50
LC 155 14...24 60 110 145		110	145	130	6.5	M8x20	49.5	60
LC 155 14...24 50 130 165		130	165	140	4	M10x20	39.5	50
LC 155 14...32 60 130 165	≤ 32 mm	130	165	140	4	M10x20	49.5	60
LC 155 14...32 60 180 215		180	215	190	5.5	M14x25	49.5	60
LC 155 14...38 80 114.3 200	≤ 38 mm	114.3	200	170	5.5	M12x25	69.5	80
LC 155 14...38 80 180 215		180	215	190	5.5	M14x25	69.5	80

GEAR UNIT WITHOUT MOTOR ADAPTOR



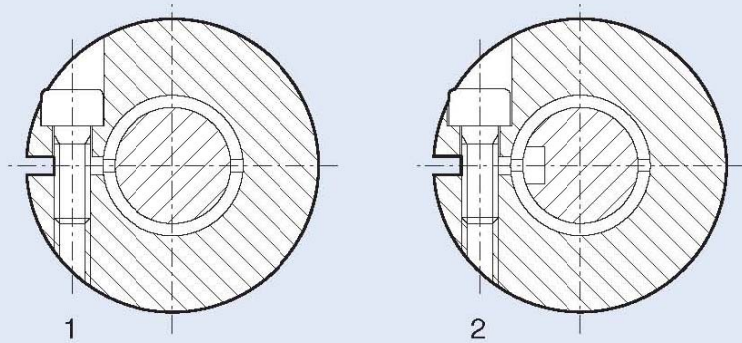
	D	D1	D2	D3	D4	D5	L1	L2	L3 +0.1 +0.2	L4	L5
LC 050	6 - 6.35 - 7	32.5	50	42.5	M4x8	M4	21.7	13.2	3	8.2	8
	8 - 9 - 9.52	32.5	50	42.5	M4x8	M4	21.7	13.2	3	8.2	9
	11 - 12 - 12.7	35.5	50	42.5	M4x8	M4	22	13.5	3	8.5	11
	14	35.5	50	42.5	M4x8	M4	26.5	18	3	13	11.5
LC 070	6 - 6.35 - 7	32.5	50	42.5	M4x8	M4	21.7	13.2	3	8.2	8
	8 - 9 - 9.52	32.5	50	42.5	M4x8	M4	21.7	13.2	3	8.2	9
	11 - 12 - 12.7	35.5	50	42.5	M4x8	M4	22	13.5	3	8.5	11
	14	35.5	50	42.5	M4x8	M4	26.5	18	3	13	11.5
LC 090	8 - 9 - 9.52	38	68	76.5	M6x10	M6	34	26.8	9.5	18.8	10.5
	11 - 12 - 12.7	43	68	76.5	M6x10	M6	34	26.8	9.5	18.8	12.5
	14 - 15.875 - 16 - 17	48	68	76.5	M6x10	M6	34	26.8	9.5	18.8	14.5
	19 - 19.05	51	68	76.5	M6x10	M6	34	26.8	9.5	18.8	16.5
LC 120	12.7	43	90	98	M6x15	M6	33.5	20	7.6	12.5	12.5
	14 - 15.875 - 16	48	90	98	M6x15	M6	33.5	20	7.6	12.5	14.5
	19	51	90	98	M6x15	M6	33.5	20	7.6	12.5	16.5
	22 - 24	56.5	90	98	M6x15	M6	36.5	23	7.6	14	19
	28	67	90	98	M6x15	M8	36.5	23	7.6	14	22.5
	32	71	90	98	M6x15	M8	38	24.5	7.6	15.5	24.5
LC 155	14 - 15.875 - 16	48	113	125.5	M8x15	M6	40	27.5	6	20	14.5
	19	51	113	125.5	M8x15	M6	40	27.5	6	20	16.5
	22 - 24	56.5	113	125.5	M8x15	M6	41	28.5	6	19.5	19
	28	67	113	125.5	M8x15	M8	41	28.5	6	19.5	22.5
	32	71	113	125.5	M8x15	M8	40	27.5	6	18.5	24.5
	35	73	113	125.5	M8x15	M8	50	37.5	11.25	26	26
	38	77.5	113	125.5	M8x15	M8	50	37.5	11.25	26	28



NOTE

Remove the key from motor shaft (dwg. 2), the shaft is secured via a joint and a screw, to be tightened to the torque wrench settings specified on the assembly instructions

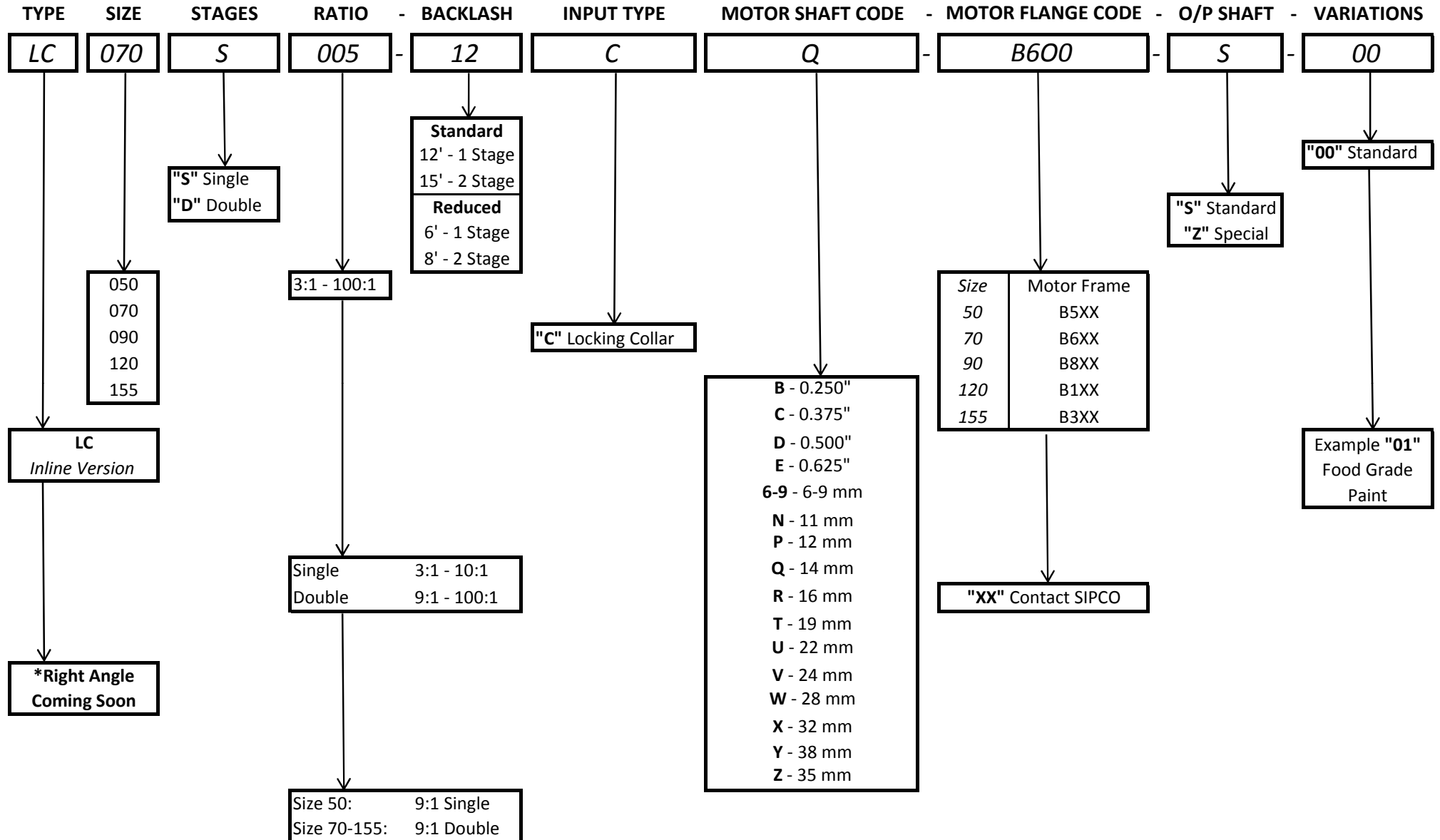
COUPLING



Part Number	Code	D1	D2	D3	D4	D5 max	L1	L2	L3	Type
TF90000	B5*0	55	25/40	36/56	4.5	9	--	25	25	055
TF90006	B5G0	60	38.1	66.6	M4	12	4	18	25	MP 055 LC 050
TF90100	B5F6	60	40	63	M4	12	4	18	25	
TF90110	B5J0	60	50	60	M4	12	4	18	25	
TF90130	B5F0	60	50	65	M5	14	4	23	30	
TF90002	B5F2	60	50	70	M5	14	4	23	30	
TF90120	B5H0	65	60	75	M5	14	4	23	30	
TF90150	B5K0	75	60	90	M5	14	4	23	30	
TF90160	B5L0	75	70	85	M6	14	4	23	30	
TF90009	B5M0	75	70	90	M5	14	4	23	30	
TF90170	B5N0	85	73	98.4	M5	14	4	25	32	
TF90180	B5O0	85	80	100	M6	14	4	23	30	

Part Number	Code	D1	D2	D3	D4	D5 max.	L1	L2	L3	Type
TF90001	B6*0	65	25/40	36/56	4.5	9	-	25	25	MP 62 LC 70
TF90200	B6G0	60	38.1	66.6	M4	12	4	18	25	
TF90210	B6F6	60	40	63	M4	12	4	18	25	
TF90220	B6J0	60	50	60	M4	12	4	18	25	
TF20301	B6F0	60	50	65	M5	14	4	23	30	
TF90240	B6F2	60	50	70	M5	14	4	23	30	
TF90230	B6H0	65	60	75	M5	14	4	23	30	
TF90260	B6K0	75	60	90	M5	14	4	23	30	
TF90270	B6L0	75	70	85	M6	14	4	23	30	
TF90280	B6M0	75	70	90	M5	14	4	23	30	
TF90290	B6N0	85	73	98.4	M5	14	4	25	32	
TF90014	B6O0	85	80	100	M6	14	4	23	30	
TF90300	B8F0	80	50	65	M5	14	5	34	40	MP 080 LC 090
TF90004	B8F2	80	50	70	M5	14	5	34	40	
TF90310	B8B0	80	50	95	M6	14	5	34	40	
TF90350	B8Q0	105	55.5	125.7	M6	19	5	34	40	
TF90320	B8H0	80	60	75	M6	19	5	34	40	
TF90340	B8K0	80	60	90	M5	16	5	34	40	
TF90360	B8L0	80	70	85	M6	19	5	34	40	
TF90005	B8M0	80	70	90	M5	19	5	34	40	
TF90007	B8N0	85	73	98.4	M5	14	5	34	40	
TF90330	B8D0	85	78	63.5	M6	14	5	34	40	
TF90015	B8O0	90	80	100	M6	19	5	34	40	
TF90008	B8P0	100	95	115	M8	19	5	34	40	
TF90370	B8P2	115	95	130	M8	19	5	34	40	
TF90380	B8R0	115	110	130	M8	19	5	34	40	
TF90010	B8S0	120	110	145	M8	19	6.5	44	50	
TF90390	B8S1	120	110	145	M8	19	6.5	54	60	
TF90400	B1B0	100	50	95	M6	19	5	28	40	MP 105 LC 120
TF90410	B1Q0	105	55.5	125.7	M6	19	5	28	40	
TF90022	B1H0	100	60	75	M6	19	5	28	40	
TF90420	B1L0	100	70	85	M6	19	5	28	40	
TF90430	B1M0	100	70	90	M5	19	5	28	40	
TF90016	B1O0	100	80	100	M6	19	5	28	40	
TF90017	B1P0	100	95	115	M8	19	5	28	40	
TF90450	B1P1	100	95	115	M8	24	5	38	50	
TF90440	B1P2	115	95	130	M8	19	5	28	40	
TF20801	B1R0	115	110	130	M8	19	5	28	40	
TF90019	B1R1	115	110	130	M8	24	6.5	38	50	
TF90011	B1S0	120	110	145	M8	24	6.5	38	50	
TF90025	B1S1	120	110	145	M8	24	6.5	48	60	
TF90023	B1U0	140	130	165	M10	24	5	38	50	
TF90460	B1U1	140	130	165	M10	32	5	48	60	
TF90500	B3Q0	130	55.5	125.7	M6	19	5	39.5	50	MP 130 LC 155
TF90510	B3O0	130	80	100	M6	19	5	39.5	50	
TF90018	B3P0	130	95	115	M8	24	5	39.5	50	
TF90020	B3R0	130	110	130	M8	24	5	39.5	50	
TF90012	B3S0	130	110	145	M8	24	6.5	49.5	60	
TF90013	B3V0	170	114.3	200	M12	38	6.5	69.5	80	
TF21040	B3U0	140	130	165	M10	24	5	39.5	50	
TF90021	B3I1	140	130	165	M10	32	5	49.5	60	
TF90520	B3W0	190	180	215	M14	32	5.5	49.5	60	
TF90530	B3W1	190	180	215	M14	38	5.5	69.5	80	
Contact SIPCO		140	55.5	125.7	M6	19	5	39.5	50	MP 160 190
		140	80	100	M6	19	5	39.5	50	
		140	95	115	M8	24	5	39.5	50	
		140	110	130	M8	24	5	39.5	50	
		140	110	145	M8	24	6.5	49.5	60	
		170	114.3	200	M12	38	6.5	69.5	80	
		140	130	165	M10	24	5	39.5	50	
		140	130	165	M10	32	5	49.5	60	

LC Precision Planetary Order Guide



Please contact SIPCO with any questions