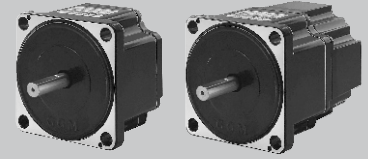


BRUSHLESS DC MOTOR UNIT - B Series

90W
150W

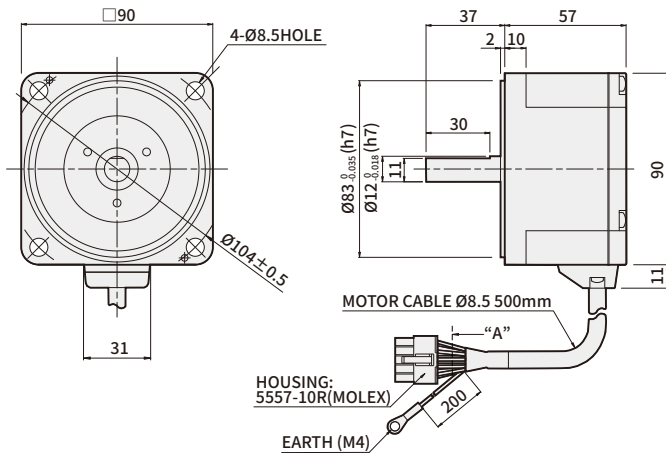
□90mm
AC voltage input



DIMENSIONS

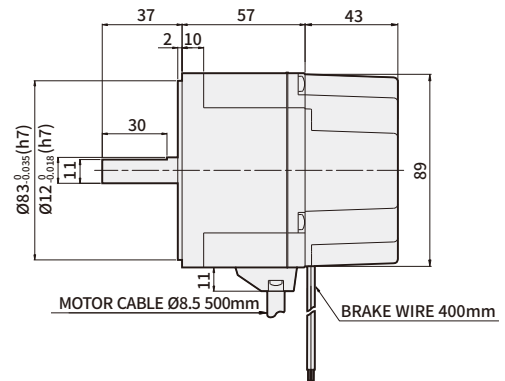
K9BS90N ■
K9BS150NC

Weight : 1.3Kg



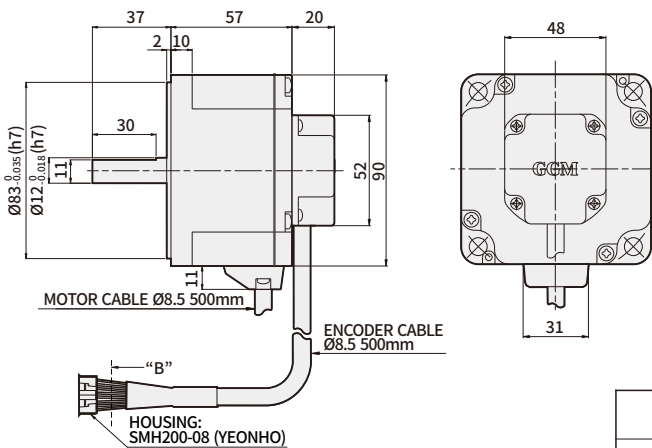
K9BS90N ■-B (Brake type)
K9BS150NC-B

Weight : 1.9Kg



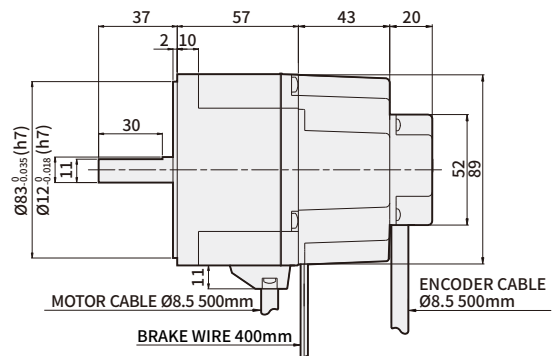
K9BS90N ■-E (Encoder type)
K9BS150NC-E

Weight : 1.4Kg



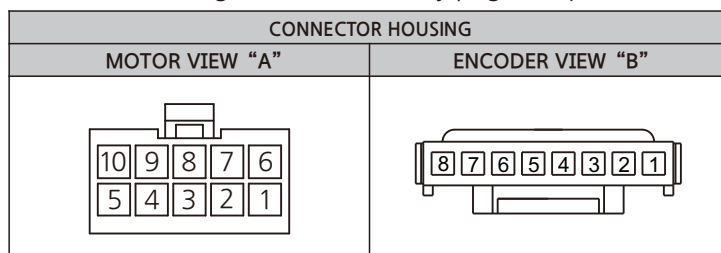
K9BS90N ■-BE (Brake Encoder type)
K9BS150NC-BE

Weight : 2Kg



Resolution	1,000PPR		Timing diagram CW A B Z
Output Type	Output Form	Power Supply	
	Line Driver	+5Vdc ±10% 150mA below	

※ Please refer to gearhead assembly page C-5, C-6.



ENCODER PIN MAP		
PIN No.	COLOR	SIGNAL
1	BLUE	Vcc(5Vdc)
2	BROWN	A
3	WHITE	/A
4	ORANGE	B
5	YELLOW	/B
6	GREEN	Z
7	PURPLE	/Z
8	GRAY	Ground

MOTOR PIN MAP		
PIN No.	COLOR	SIGNAL
1	BLUE	U
2	-	-
3	GREEN	Ground
4	YELLOW	Vcc
5	ORANGE	Hw
6	PURPLE	V
7	GRAY	W
8		(Drain)
9	BROWN	Hu
10	WHITE	Hv

※ In ■ of the model name voltage U (single-phase 100~115V), C (single-phase 200~230V) will be shown.

※ 90NU, 90NC, 150NC which are in end of the model name is UL certified ones. UL FILE NO. E504659

→ B-Series Specification

Product name	GEAR TYPE	K6BH30NU	K6BH30NC	K8BH60NU	K8BH60NC	K9BH90NU	K9BH90NC	K9BH150NC	
	D-CUT TYPE	K6BS30NU	K6BS30NC	K8BS60NU	K8BS60NC	K9BS90NU	K9BS90NC	K9BS150NC	
Rating output (continuous)	W	30		60		90		150	
Power input	Voltage(single-phase)	V	100~115	200~230	100~115	200~230	100~115	200~230	200~230
	Frequency	Hz	50/60						
	Rating input current	A	1.0	0.6	1.5	1.0	2.5	1.5	1.8
	Maximum input current	A	2.5	2.0	3.5	3.0	5.0	4	5
Rating torque	N·m	0.1		0.2		0.3		0.49	
Starting torque	N·m	0.15		0.3		0.5		0.6	
Rating rotation speed	r/min	3,000							
Speed control range	r/min	100 ~ 3,000							

※ -B (BRAKE), -E (ENCODER) or -BE (BRAKE+ENCODER) can be added to end of the motor model name.

→ F-Series Specification

Product name	GEAR TYPE	K6FH30NC	K8FH60NC	K9FH150NC	K10FH200NC	K10FH400NC	
	D-CUT TYPE	K6FS30NC	K8FS60NC	K9FS150NC	K10FS200NC	K10FS400NC	
Rating output (continuous)	W	30	60	150	200	400	
Power input	Voltage(single-phase)	V	single-phase 200~240V / three-phase 200~240V (Allowable range ±10%)				
	Frequency	Hz	50/60				
	Rating input current	A	single-phase : 0.8 three-phase : 0.5	single-phase : 1.0 three-phase : 0.7	single-phase : 2.0 three-phase : 1.2	single-phase : 2.5 three-phase : 1.8	single-phase : 4.0 three-phase : 3.0
	Maximum input current	A	single-phase : 1.9 three-phase : 1.1	single-phase : 2.8 three-phase : 1.7	single-phase : 4.5 three-phase : 2.6	single-phase : 5.5 three-phase : 3.2	single-phase : 7.8 three-phase : 5.0
Rated output current	A	0.17	0.43	0.95	1.60	2.30	
Rating torque	N·m	0.1	0.2	0.49	0.65	1.30	
Starting torque	N·m	0.15	0.3	0.60	1.15	1.80	
Rating rotation speed	r/min	3000					
Speed control range	r/min	100~4000					

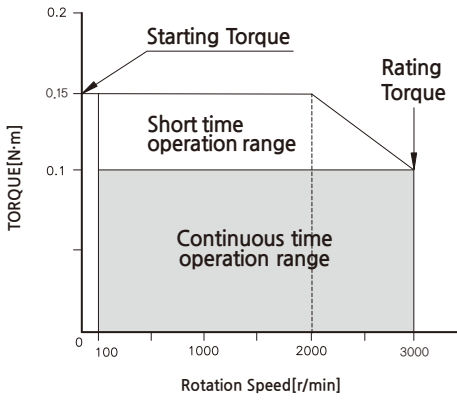
※ -B (BRAKE), -E (ENCODER) or -BE (BRAKE+ENCODER) can be added to end of the motor model name.

→ Common Specification

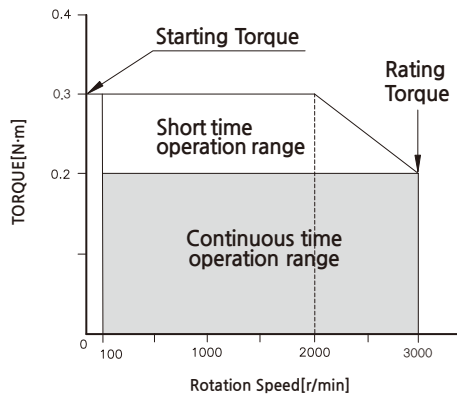
Items		Motor	Control unit
Insulation Resistance		After continuously operating at room temperature and humidity, it should be greater than 100MΩ between coil and case when measured with DC 500V MEGA TESTER	Protection ground terminal and power input should be greater than 100MΩ when measure with DC 500V MEGA TESTER
Dielectric Strength		After continuously operating at room temperature and humidity, there shouldn't be any problem if 60Hz, 1500V is applied for more than 1 minute between coil and case	There shouldn't be any problem if 60Hz, 1500V is applied for more than 1 minute between protection ground terminal and power input
Temperature rise		After operating continuously at room temperature and humidity, the temperature increase should be less than 60°C and less than 50°C of temperature increase on the case surface when measure with thermo couple	
Used environment	Used Ambient temperature / Humidity	0°C~+50°C (There should not be any freeze) / less than 85% (no dew condensation)	
	Ambient environment	No corrosive gas or dusts	
Conservation environment	Ambient temperature / Humidity	-25 ~ +70°C (There should not be any freeze) / less than 85% (no dew)	
Insulation class		UL, CSA Standard A Type(105°C), EN Standard E Type(120°C)	
Protection class		IP65(Except for the mounting part on the output part)	IP10
Motor insulation class		E TYPE(120°C)	

Rotation speed - torque characteristic

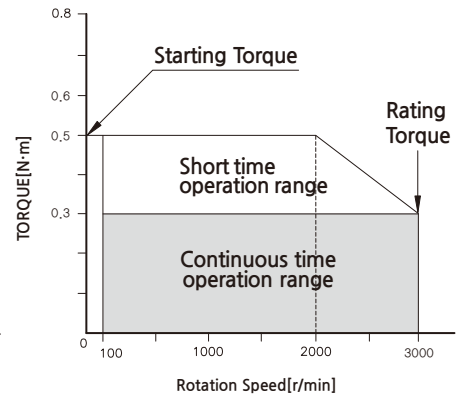
K6BS30N ■ / K6BH30N ■



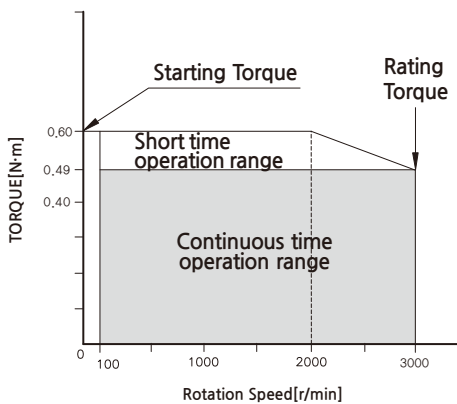
K8BS60N ■ / K8BH60N ■



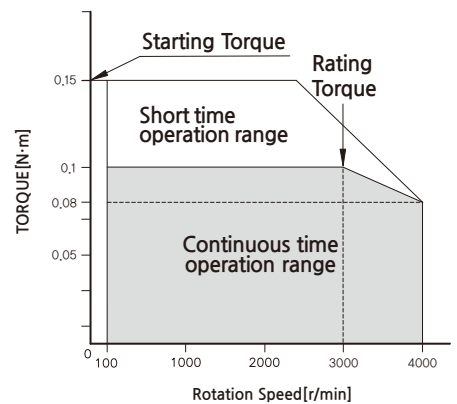
K9BS90N ■ / K9BH90N ■



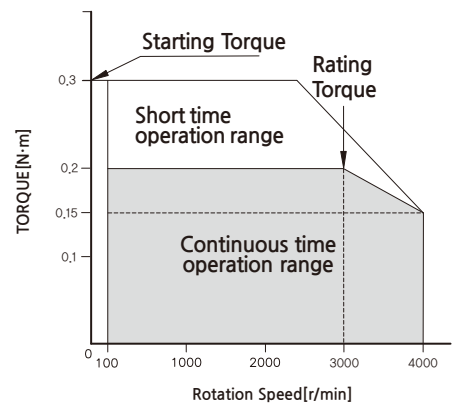
K9BS150NC / K9BH150NC



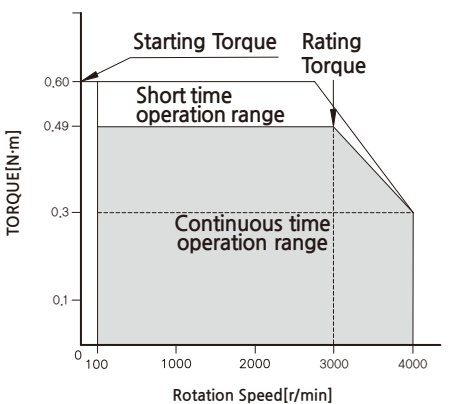
K6FS30NC / K6FH30NC



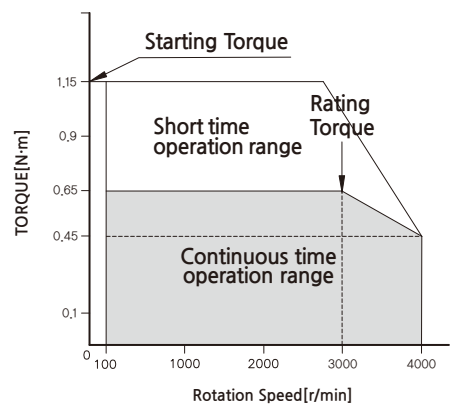
K8FS60NC / K8FH60NC



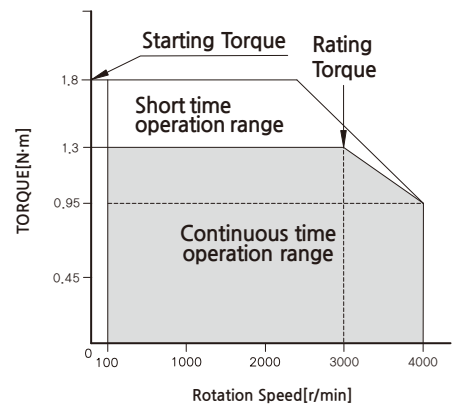
K9FS150NC / K9FH150NC



K10FS200NC / K10FH200NC



K10FS400NC / K10FH400NC



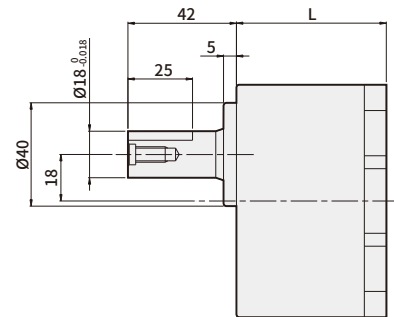
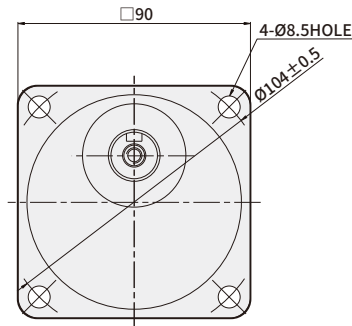
※ -B (BRAKE), -E (ENCODER) or -BE (BRAKE+ENCODER) can be added to end of the motor model name.
 ※ In ■ of the model name voltage U (single-phase 100~115V), C (single-phase 200~230V) will be shown.

BRUSHLESS AC/DC MOTOR UNIT - Gearhead

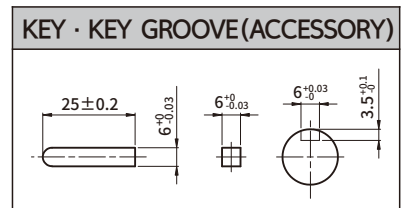
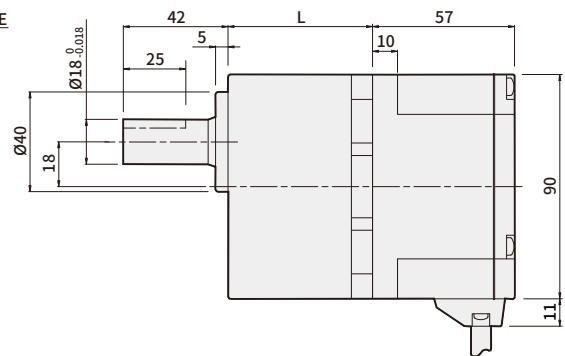
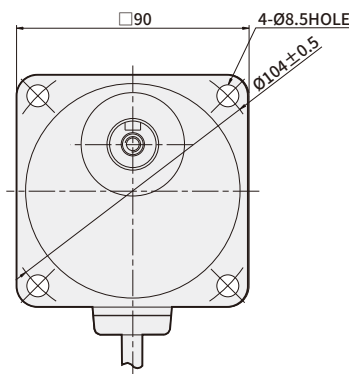
DIMENSIONS

GEARHEAD K9H□B

K9H□B
Weight : 1.3Kg



K9BH90N■ + K9H□B
K9BH150NC + K9H□B
K9FH150NC + K9H□B
K9XH100N2 + K9H□B
Weight : 2.6Kg



DIMENSION TABLE

GEARHEAD PRODUCT NAME	DECCELERATION RATIO	L	FIXING BOLT
K9H□B	5,10,15,20	45	M8 P1.25×75
	30,50,100	58	M8 P1.25×90
	200	64	M8 P1.25×95

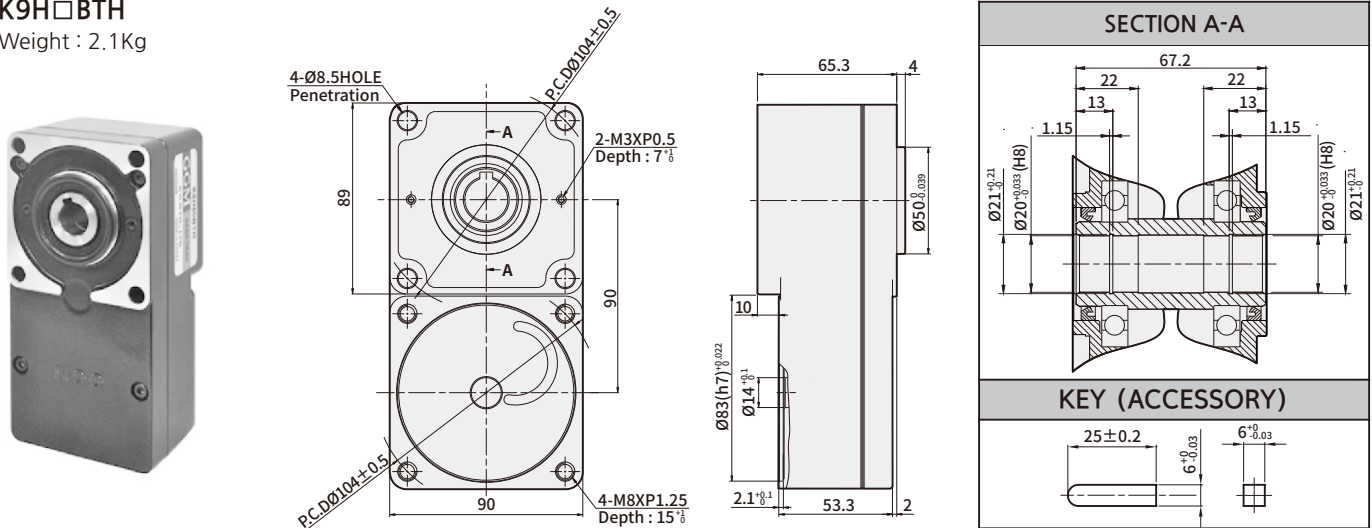
- ※ -B (BRAKE), -E (ENCODER) or -BE (BRAKE+ENCODER) can be added to end of the motor model name.
- ※ In ■ of the model name voltage U (single-phase 100~115V), C (single-phase 200~230V) will be shown.
- ※ In □ of name, it represents a deceleration ratio.
- ※ Geared motor is included with fixing bolt set. (flat washer, spring washer, hexagonal nut 4pcs each)

BRUSHLESS DC MOTOR UNIT - Gearhead

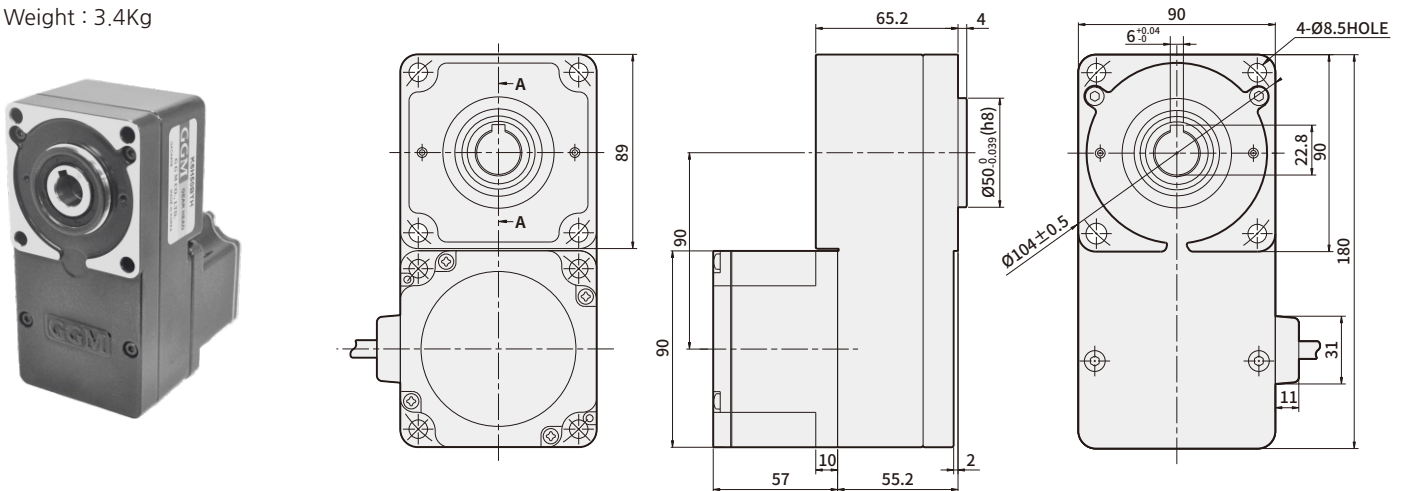
DIMENSIONS

GEARHEAD K9H□BTH

K9H□BTH
Weight : 2.1Kg



K9BH90N■ + K9H□BTH
K9BH150NC + K9H□BTH
K9FH150NC + K9H□BTH
K9XH100N2 + K9H□BTH
Weight : 3.4Kg



DIMENSION TABLE

GEARHEAD PRODUCT NAME	DECELERATION RATIO	FIXING BOLT
K9H□BTH	5, 10, 15, 20, 30 50, 100, 200	M8 P1.25×90

- ※ -B (BRAKE), -E (ENCODER) or -BE (BRAKE+ENCODER) can be added to end of the motor model name.
- ※ In ■ of the model name voltage U (single-phase 100~115V), C (single-phase 200~230V) will be shown.
- ※ In □ of name, it represents a deceleration ratio.
- ※ Geared motor is included with fixing bolt set. (flat washer, spring washer, hexagonal nut 4pcs each)

→ Delivery efficiency of gearhead

Product name	Deceleration ratio	5	10	15	20	30	50	100	200
	K6H□B		90%				86%		
K8H□B		90%				86%			81%
K9H□B		90%				86%			81%
K10H□BU		90%				86%		81%	
K6H□BTH		80%	85%						
K8H□BTH		85%							
K9H□BTH		85%							
K10H□BTH		85%							

→ Allowed torque of AC Motor + Gearhead

Unit = N·m

Product name	Deceleration ratio	5	10	15	20	30	50	100	200
	Speed control range[r/min]	20~600	10~300	6.7~200	5~150	3.3~100	2~60	1~30	0.5~15
K6BH30N■ + K6H□B	100~3000	0.45	0.9	1.4	1.8	2.6	4.3	6	6
K8BH60N■ + K8H□B		0.9	1.8	2.7	3.6	5.2	8.6	16	16
K9BH90N■ + K9H□B		1.35	2.7	4.1	5.4	7.7	12.9	25.8	30
K9BH150NC + K9H□B		2.2	4.4	6.6	8.8	12.6	21.1	30	30
K6BH30N■ + K6H□BTH		0.4	0.85	1.3	1.7	2.6	4.3	8.5	17
K8BH60N■ + K8H□BTH		0.85	1.7	2.6	3.4	5.1	8.5	17	34
K9BH90N■ + K9H□BTH		1.9	3.8	5.7	7.7	11.5	19.1	38.3	68
K9BH150NC + K9H□BTH		2.1	4.2	6.2	8.3	12.5	21	42	68
Product name	Deceleration ratio	5	10	15	20	30	50	100	200
	Speed control range[r/min]	20~800	10~400	6.7~266	5~200	3.3~133	2~80	1~40	0.5~20
K6FH30NC+K6H□B	100~3000	0.45	0.9	1.4	1.8	2.6	4.3	6	6
	4000	0.36	0.72	1.08	1.4	2.1	3.4	5.4	5.4
K8FH60NC+K8H□B	100~3000	0.9	1.8	2.7	3.6	5.2	8.6	16	16
	4000	0.68	1.4	2.0	2.7	3.9	6.5	12.9	14
K9FH150NC+K9H□B	100~3000	2.2	4.4	6.6	8.8	12.6	21.1	30	30
	4000	1.4	2.7	4.1	5.4	7.7	12.9	25.8	27
K10FH200NC+K10H□BU	100~3000	2.9	5.9	8.8	11.7	16.8	28	52.7	70
	4000	2	4.1	6.1	8.1	11.6	19.4	36.5	63
K10FH400NC+K10H□BU	100~3000	5.9	11.7	17.6	23.4	33.5	55.9	70	70
	4000	4.3	8.6	12.8	17.1	24.5	40.9	63	63
K6FH30NC+K6H□BTH	100~3000	0.4	0.85	1.3	1.7	2.6	4.3	8.5	17
	4000	0.30	0.64	0.96	1.3	1.9	3.2	6.4	12.8
K8FH60NC+K8H□BTH	100~3000	0.85	1.7	2.6	3.4	5.1	8.5	17	34
	4000	0.64	1.3	1.9	2.6	3.8	6.4	12.8	25.5
K9FH150NC+K9H□BTH	100~3000	2.1	4.2	6.2	8.3	12.5	21	42	68
	4000	1.3	2.6	3.8	5.1	7.7	12.8	25.5	51
K10FH200NC+K10H□BTH	100~3000	2.8	5.5	8.3	11.1	16.6	27.6	55.3	—
	4000	1.9	3.8	5.7	7.7	11.5	19.1	38.3	—
K10FH400NC+K10H□BTH	100~3000	5.5	11.1	16.6	22.1	33.2	55.3	110	—
	4000	4.0	8.1	12.1	16.2	24.2	40.4	80.8	—

- * -B (BRAKE), -E (ENCODER) or -BE (BRAKE+ENCODER) can be added to end of the motor model name.
- * In ■ of the model name voltage U (single-phase 100~115V), C (single-phase 200~230V) will be shown.
- * In □ of name, it represents a deceleration ratio.
- * Rotation direction shows the same [] color as the motor. In other cases, it's the opposite.
- * Flat Gearbox viewed from front side is opposite rotation direction with motor.
- * Flat Gearbox viewed from back side is same rotation direction with motor.

→ Allowed overhang load and allowed thrust

Product name		Deceleration ratio	Allowed overhang load				Allowed thrust load	
			From the end of output part 10mm		From the end of output part 20mm		N	kgf
			N	kgf	N	kgf		
GEARHEAD	K6H□B	5	100	10	150	15	40	4
		10,15,20	150	15	200	20		
		30,50,100,200	200	20	300	30		
	K8H□B	5	200	20	250	25	100	10
		10,15,20	300	30	350	35		
		30,50,100,200	450	45	550	55		
	K9H□B	5	300	30	400	40	150	15
		10,15,20	400	40	500	50		
		30,50,100,200	500	50	650	65		
	K10H□BU	5,10,15,20	550	55	800	80	200	20
		30,50	1000	100	1250	125	300	30
		100,200	1400	140	1700	170	400	40
	K6H□BTH	5,10	450	45	370	37	200	20
		15~200	500	50	400	40		
	K8H□BTH	5,10	800	80	660	66	400	40
		15~200	1200	120	1000	100		
	K9H□BTH	5,10	900	90	770	77	500	50
		15,20	1300	130	1110	111		
		30,50,100,200	1500	150	1280	128		
	K10H□BTH	5,10	1230	123	1070	107	800	80
		15,20	1680	168	1470	147		
30,50,100		2040	204	1780	178			
MOTOR	K6BS30N■,K6FS30NC K6XS30N2		70	7	100	10	· Do not apply THRUST load Please. If you can't help it, 50% or less.	
	K8BS60N■,K8FS60NC K8XS50N2		120	12	140	14		
	K9BS90N■,K9BS150NC K9FS150NC,K9XS100N2		160	16	170	17		
	K10FS200NC,K10FS400NC K10XS200N2,K10XS400N9		197	19.7	220	22		

- ※ -B (BRAKE), -E (ENCODER) or -BE (BRAKE+ENCODER) can be added to end of the motor model name.
- ※ In ■ of the model name voltage U (single-phase 100~115V), C (single-phase 200~230V) will be shown.
- ※ In □ of name, it represents a deceleration ratio.
- ※ Permissible overhang load can be withdrawn by calculation.