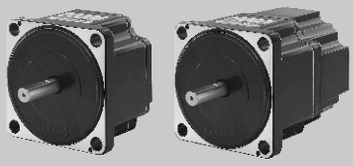
BRUSHLESS DC MOTOR UNIT - X Series

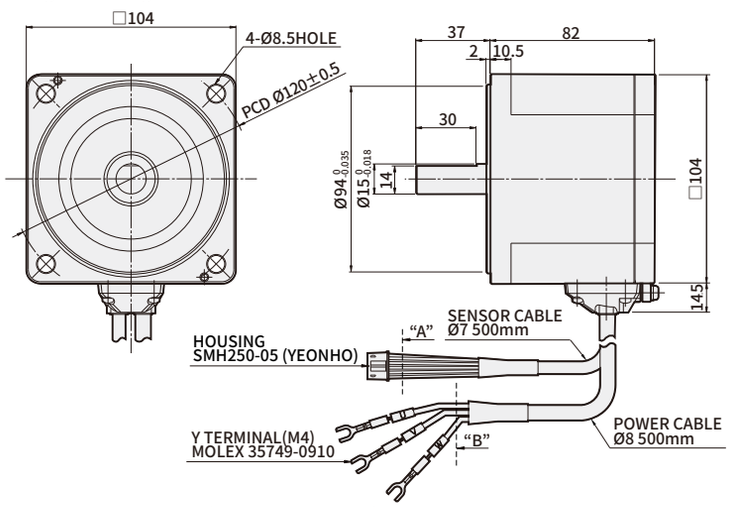
200W
400W

□104mm
DC 24V, 48V Input

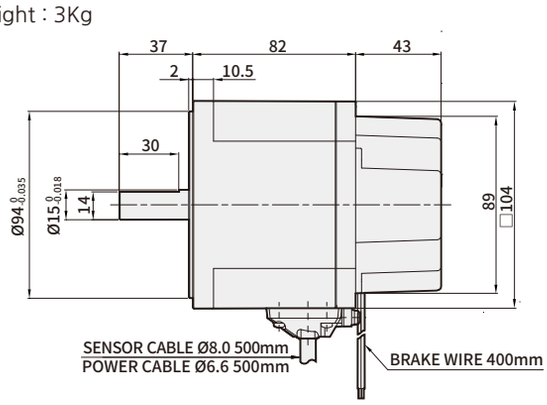


DIMENSIONS

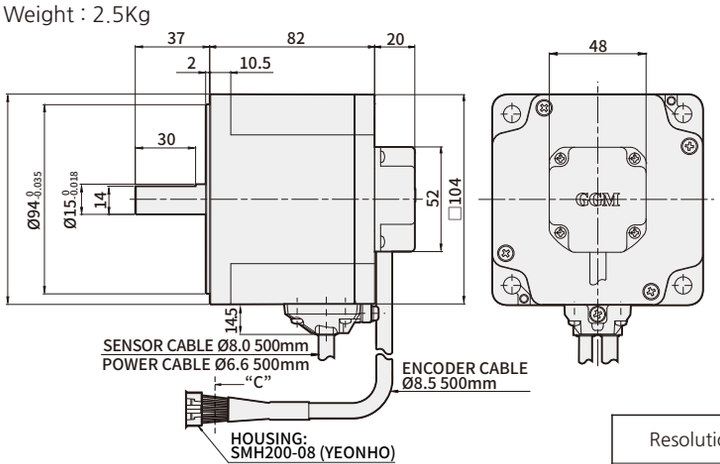
K10XS200N2 (24V)
K10XS400N9 (48V)
Weight : 2.4Kg



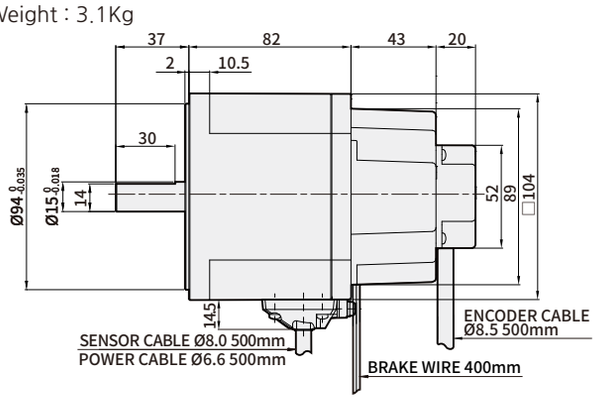
K10XS200N2-B (Brake type)
K10XS400N9-B
Weight : 3Kg



K10XS200N2-E (Encoder type)
K10XS400N9-E
Weight : 2.5Kg



K10XS200N2-BE (Brake Encoder type)
K10XS400N9-BE
Weight : 3.1Kg



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

※Please refer to gearhead assembly page C-7, C-8.

CONNECTOR HOUSING		
MOTOR VIEW "A" / "B"		ENCODER VIEW "C"
A: 5 4 3 2 1	B: W V U	8 7 6 5 4 3 2 1

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	BROWN	Hu
2	WHITE	Hv
3	ORANGE	Hw
4	GREEN	Ground
5	YELLOW	Vcc
-	BLUE	U
-	PURPLE	V
-	GRAY	W

※ 200N2, 400N9 which are in end of the model name is UL certified ones. UL FILE NO. E504659

Specification

Product name									
	GEAR TYPE		K6XH30N2	K8XH50N2	K9XH100N2	K10XH200N2	K10XH400N9	K10XH400N2	-
	STRAIGHT TYPE		K6XS30N2	K8XS50N2	K9XS100N2	K10XS200N2	K10XS400N9	K10XS400N2	-
	KEY TYPE		K6XK30N2	K8XK50N2	K9XK100N2	K10XK200N2	K10XK400N9	K10XK400N2	K10XK750N9
Rating output (continuous)		W	30	50	100	200	400		750 (IEC)
Power input	Rating voltage	V	DC 24				DC 48	DC 24	DC 48
	Rating voltage allowance		±10%						
	Rating input current	A	2.1	3.1	6	13	11	24	18
	Maximum input current	A	3.7	5.4	9.8	25	18	30	30
정격TORQUE		N·m	0.12	0.2	0.4	0.65	1.3	1.3	2.4
기동TORQUE		N·m	0.15	0.24	0.5	1.15	1.8	1.8	3.5
정격회전속도		r/min	2500			3000			
속도제어범위		r/min	100~3000			100~4000		100~3000	
Speed change rate	Load		Less than or equal to ±1% : condition 0-rated torque, rated rotation speed, rated voltage, room temperature						
	Voltage		Less than or equal to ±1% : condition rating voltage ±10%, rating rotation speed, no load, room temperature						
	Temperature		Less than or equal to ±1% : condition surrounding temperature 0~+40℃, rating rotation speed, no load, rating voltage						

※ -B (BRAKE), -E (ENCODER) or -BE (BRAKE+ENCODER) can be added to end of the motor model name.
※ The usage duration for starting torque is within 5 seconds at less than 2000 r/min.
※ Each specification value is the characteristic of motor by itself.
※ IEC Type is same as K10XK750NC specification.

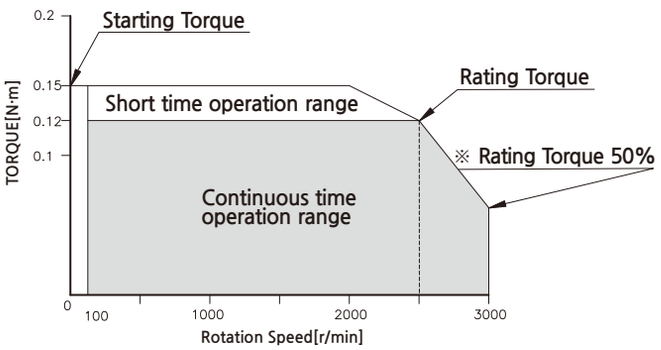
Normal specifications

Item		Motor	Control unit
Insulation Resistance		After being operated continuously at room temperature and humidity, the value measured between coil and vase by DC 500V MEGA is greater than or equal to 100㏁	After being operated continuously at room temperature and humidity, the value measured between heatproof plate and power input is greater than or equal to 100㏁
Dielectric Strength		After being operated continuously at room temperature and humidity, there shouldn't be any problem between coil and case even when AC 0.5kV is applied for 1 minute.	After being operated continuously at room temperature and humidity, there shouldn't be any problem between coil and case even when AC 0.5kV is applied for 1 minute.
Used environment	Used Ambient temperature	0℃~+50℃ (should not freeze)	
	Used Ambient Humidity	less than or equal to 85% (not from dews)	
	Vibration	Altitude less than 1000m	
	Ambient environment	Cannot be used under special circumstances such as withcorrosive gas, dust, radioactive material, magnetic and vacuum	
	Vibration	Should not apply constant vibration or huge impact according to the JIS C 60068-2-6 sine wave vibration Test method Frequency range : 10~55Hz, peak amplitude : 0.15mm, sweet direction : 3 direction(X,Y,Z), number of sweeps : 20 times	
Conservation environment	Ambient temperature	-25 ~ +70℃ (should not freeze)	
	Ambient Humidity	less than or equal to 85% (not form dews)	
	Altitude	Altitude less than 3000m	
Insulation class		UL, CSA STANDARD A TYPE(105℃), EN STANDARD E TYPE(120℃)	
Protection class		IP65	IP00

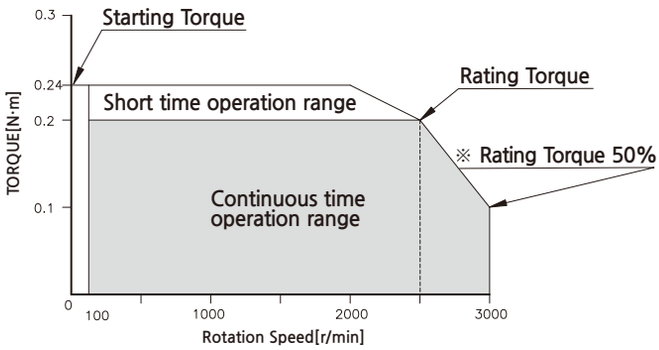
※ Preservation environment is a short-term value, which includes transportation.
※ Do not measure insulation resistance and pressure resistance while motor and driver are connected.

Rotation speed- torque characteristic

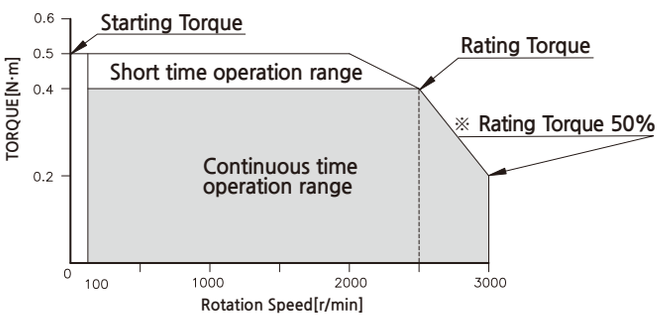
K6XS30N2 / K6XH30N2



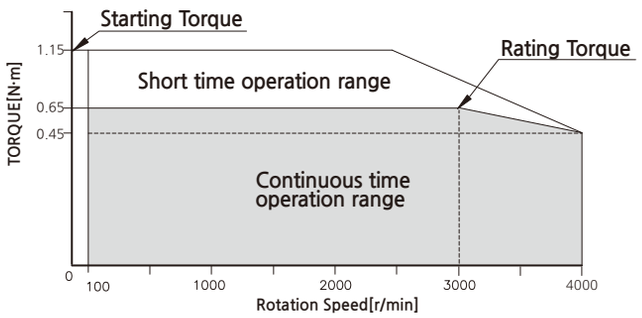
K8XS50N2 / K8XH50N2



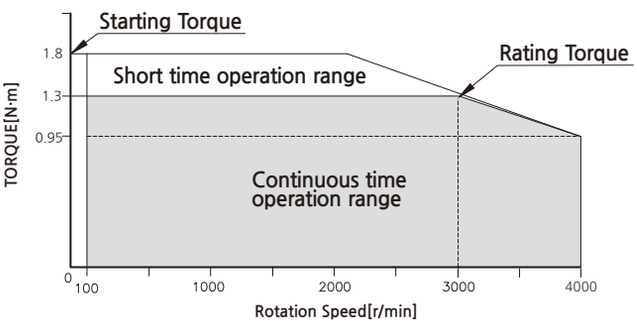
K9XS100N2 / K9XH100N2



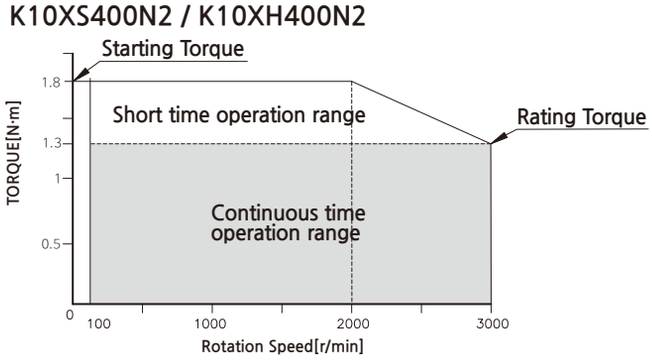
K10XS200N2/K10XH200N2



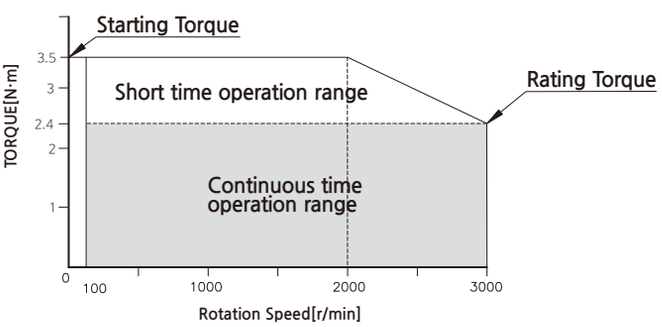
K10XS400N9/K10XH400N9



K10XS400N2 / K10XH400N2



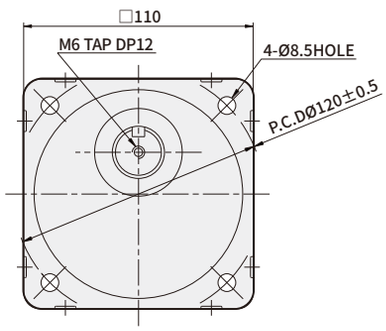
K10XK750N9 / K16XK750N9 / K20XK750N9

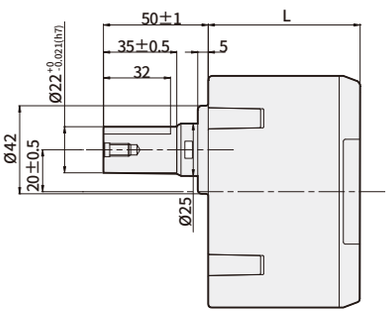


※ -B (BRAKE), -E (ENCODER) or -BE (BRAKE+ENCODER) can be added to end of the motor model name.

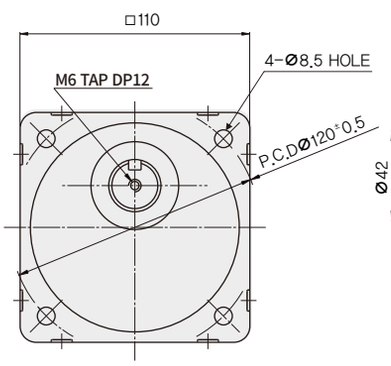
GEARHEAD K10H□B

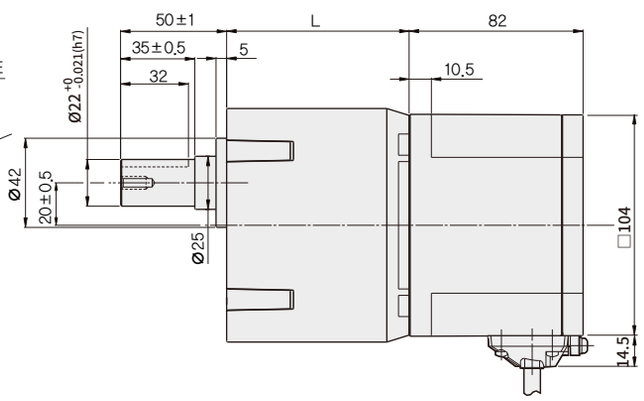
K10H□BU
Weight : 3Kg



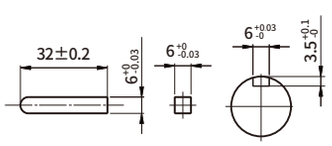


K10BH200NC, K10BH400NC + K10H□BU
K10FH200NC, K10FH400NC + K10H□BU
K10XH200N2, K10XH400N9 + K10H□BU
Weight : 5.4Kg





KEY · KEY GROOVE(ACCESSORY)



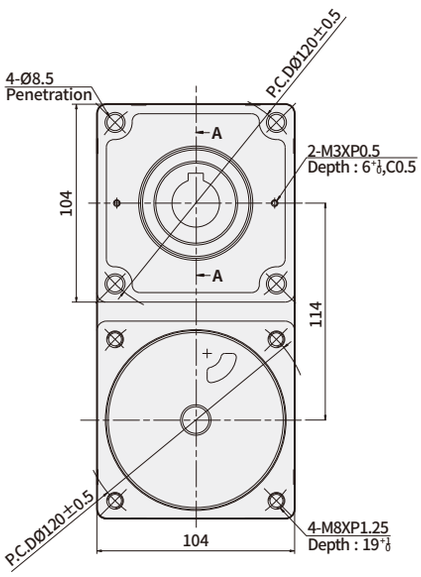
DIMENSION TABLE

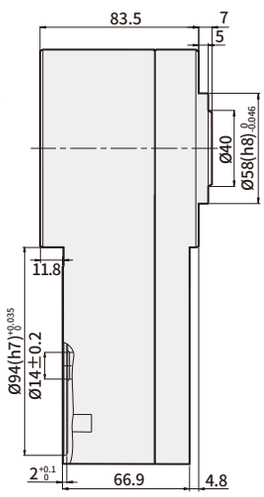
GEARHEAD PRODUCT NAME	DECELERATION RATIO	L	FIXING BOLT
K10H□BU	5,10,15,20	60	M8 P1.25×95
	30,50	72	M8 P1.25×110
	100,200	86	M8 P1.25×120

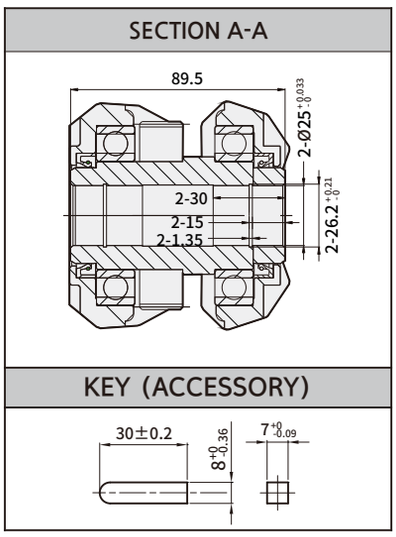
※ -B (BRAKE), -E (ENCODER) or -BE (BRAKE+ENCODER) can be added to end of the motor model name.
※ In □ of name, it represents a deceleration ratio.
※ Geared motor is included with fixing blolt set. (flat washer, spring washer, hexagonal nut 4pcs each)

GEARHEAD K10H□BTH

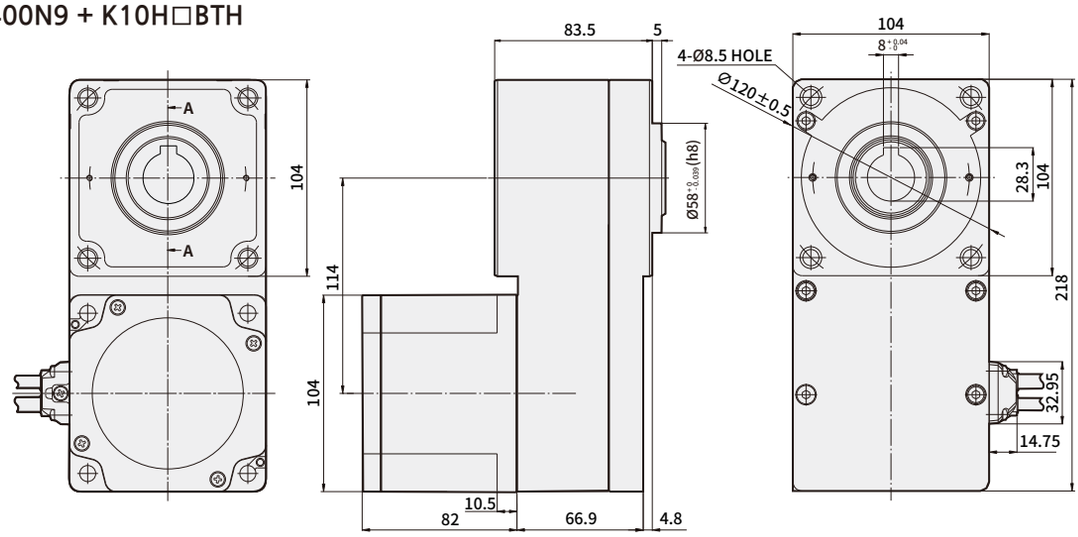
K10H□BTH
Weight : 4.9Kg







K10BH200NC, K10BH400NC + K10H□BTH
K10FH200NC, K10FH400NC + K10H□BTH
K10XH200N2, K10XH400N9 + K10H□BTH
Weight : 7.3Kg



DIMENSION TABLE

GEARHEAD PRODUCT NAME	DECELERATION RATIO	FIXING BOLT
K10H□BTH	5, 10, 15, 20, 30 50, 100	M8 P1.25×100

※ -B (BRAKE), -E (ENCODER) or -BE (BRAKE+ENCODER) can be added to end of the motor model name.
※ In □ of name, it represents a deceleration ratio.
※ Geared motor is included with fixing blolt set. (flat washer, spring washer, hexagonal nut 4pcs each)

Delivery effciency of gearhead

Product name	Deceleration ratio	5	10	15	20	30	50	100	200
	K6H□B	90%				86%			81%
	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
K10BH200NC+K10H□BU		2.9	5.9	8.8	11.7	16.8	28	52.7	70
K10BH400NC+K10H□BU		5.9	11.7	17.6	23.4	33.5	55.9	70	70
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
K10BH200NC+K10H□BTH		2.8	5.5	8.3	11.1	16.6	27.6	55.3	—
K10BH400NC+K10H□BTH		5.5	11.1	16.6	22.1	33.2	55.3	110	—
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 torque of DC 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
K6XH30N2 + K6H□B	100~2500	0.54	1.1	1.6	2.2	3.1	5.2	6	6
	3000	0.3	0.54	0.81	1.1	1.5	2.6	5.2	6
K8XH50N2 + K8H□B	100~2500	0.9	1.8	2.7	3.6	5.2	8.6	16	16
	3000	0.45	0.9	1.4	1.8	2.6	4.3	8.6	16
K9XH100N2 + K9H□B	100~2500	1.8	3.6	5.4	7.2	10.3	17.2	30	30
	3000	0.9	1.8	2.7	3.6	5.2	8.6	17.2	30
K6XH30N2 + K6H□BTH	100~2500	0.48	1	1.5	2	3.1	5.1	10.2	17
	3000	0.2	0.51	0.77	1	1.5	2.6	5.1	10.2
K8XH50N2 + K8H□BTH	100~2500	0.85	1.7	2.6	3.4	5.1	8.5	17	34
	3000	0.43	0.85	1.3	1.7	2.6	4.3	8.5	17
K9XH100N2 + K9H□BTH	100~2500	1.7	3.4	5.1	6.8	10.2	17	34	68
	3000	0.85	1.7	2.6	3.4	5.1	8.5	17	34
Product name	Deceleration ratio	5	10	15	20	30	50	100	200
	Speed control range[r/min]	20~800	10~400	6.7~267	5~200	3.3~133	2~80	1~40	0.5~20
K10XH200N2 + K10H□BU	100~3000	2.9	5.9	8.8	11.7	16.8	28	52.7	70
	4000	2.0	4.1	6.1	8.1	11.6	19.4	36.5	63
K10XH400N9 + 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
K10XH400N2 + K10H□BU	100~3000	5.9	11.7	17.6	23.4	33.5	55.9	70	70
K10XH200N2 + 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	—
K10XH400N9 + 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	—
K10XH400N2 + K10H□BTH	100~3000	5.5	11.1	16.6	22.1	33.2	55.3	110	—

※ -B (BRAKE), -E (ENCODER) or -BE (BRAKE+ENCODER) can be added to end of the motor model name.
※ 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 overhand 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		
	K10BS200NC,K10BS400NC 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.