BRUSHLESS AC MOTORS

Power : 20 - 400W
Gear Ratio : 1/5-1/200

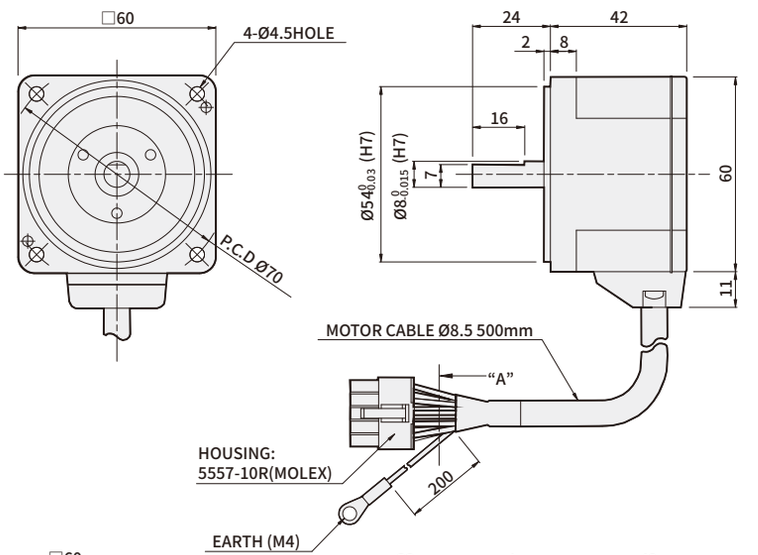
BRUSHLESS DC MOTOR UNIT - B Series

20W □60mm AC voltage input

DIMENSIONS

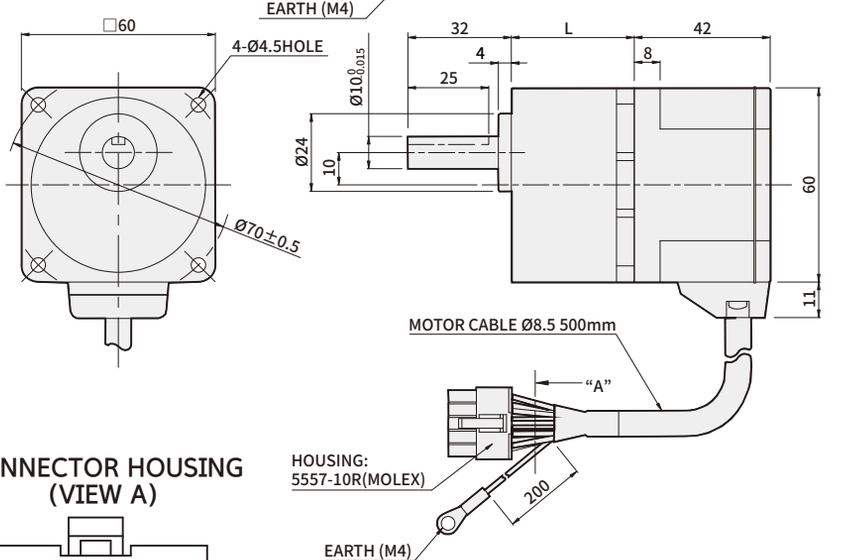
K6BS20N■

(Weight : 0.5Kg)

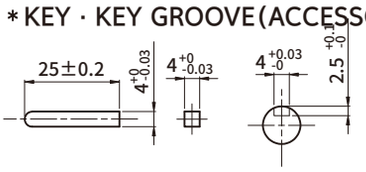


K6BH20N■ + K6H□B

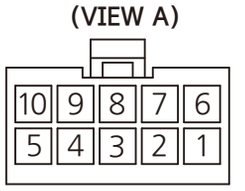
(Weight : 0.9Kg)



* KEY · KEY GROOVE (ACCESSORY)



* CONNECTOR HOUSING (VIEW A)



MOTOR PRODUCT NAME	GEARHEAD PRODUCT NAME	DECELERATION RATIO	L	FIXING BOLT
K6BH20N■	K6H□B	5~20	34	M4 P0.7×50
		30~100	38	M4 P0.7×55
		200	43	M4 P0.7×60

* In dimension, in ■ of name represents power voltage U(single-phase 100~115V), C(single-phase 200~230V)
* In □ of name, it represents a deceleration ratio.
* Geared motor is included with fixing bolt set (flat washer, spring washer, hexagonal nut 4pcs each)

* PIN MAP

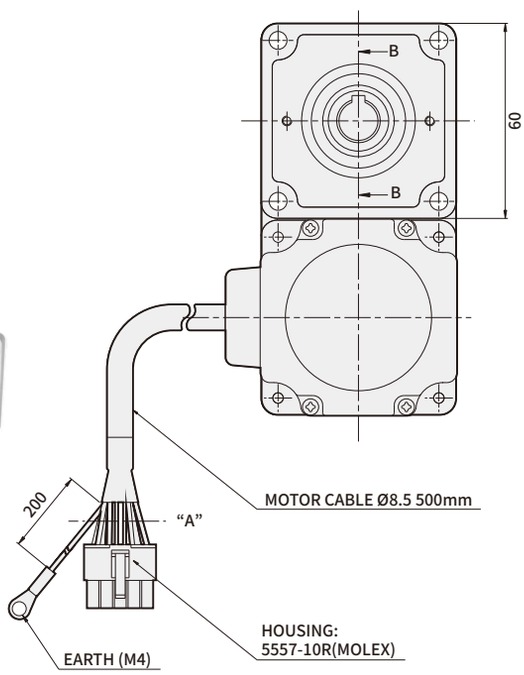
PIN No.	COLOR	SIGNAL
1	BLUE	U
2	-	-
3	GREEN	Ground
4	YELLOW	Vcc
5	ORANGE	Hw
6	PURPLE	V
7	GRAY	W
8		(Drain)
9	BROWN	Hu
10	WHITE	Hv

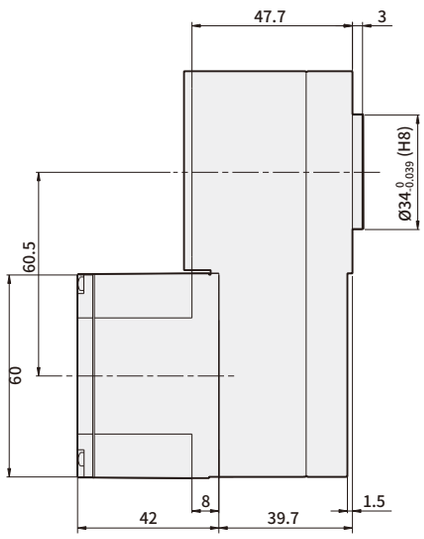
BRUSHLESS DC MOTOR UNIT - B Series

DIMENSIONS

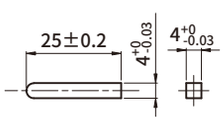
K6BH20N■ + K6H□BTH

(Weight : 1.2Kg)





* KEY (ACCESSORY)



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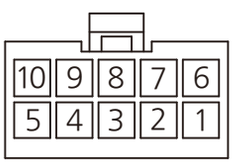
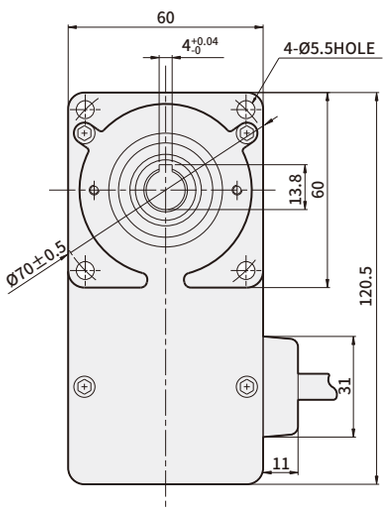
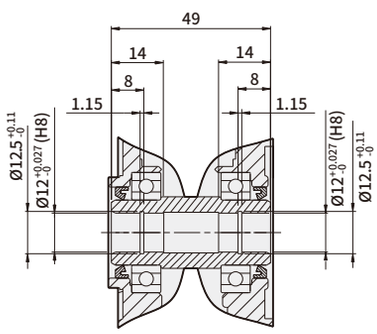






SECTION B-B

MOTOR PRODUCT NAME	GEARHEAD PRODUCT NAME	DECELERATION RATIO	FIXING BOLT
K6BH20N■	K6H□BTH	5~200	M5 P0.8×65

* In Dimension, in ■ of name represents power voltage U(single-phase 100~115V), C(single-phase 200~230V)
* In □ of name, it represents a deceleration ratio.
* Mounting bolt sets are included in flat type gearbox.
  M5×65L (flat washer, spring washer, hexagonal nut 4pcs each)

* 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

Specification

Product name	GEAR TYPE	K6BH20NU	K6BH20NC	K8BH40NU	K8BH40NC	K9BH90NU	K9BH90NC	K9BH150NC	K10BH200NC	K10BH400NC
	D-CUT TYPE	K6BS20NU	K6BS20NC	K8BS40NU	K8BS40NC	K9BS90NU	K9BS90NC	K9BS150NC	K10BS200NC	K10BS400NC
Rating output (continuous) W		20		40		90		150	200	400
Power input	Voltage V	100~115	200~230	100~115	200~230	100~115	200~230	200~230	200~230	200~230
	Frequency Hz	50/60								
	Rating input current A	0.95	0.55	1.45	0.85	2.55	1.45	2.1	2.8	5.6
	Maximum input current A	1.55	0.9	2.5	1.4	3.9	2.4	4	5.1	7.8
Rating torque N·m(kgf·cm)		0.1(1.0)		0.2(2.0)		0.45(4.5)		0.49(4.9)	0.65(6.5)	1.3(13)
Starting torque N·m(kgf·cm)		0.12(1.2)		0.24(2.4)		0.54(5.4)		0.63(6.3)	1.15(11.5)	1.8(18)
Rating rotation speed r/min		2,000						3,000		
Speed control range r/min		100~2,000						100~3,000	100~4,000	
Allowed inertia load moment of motor	J kg·m^2	0.5×10^{-4}		1.8×10^{-4}		5.8×10^{-4}		5.8×10^{-4}	8.75×10^{-4}	15×10^{-4}
Speed change rate	Load	less than or equal to ±1% (0~Rating torque, If rotating at the rated speed)								
	Voltage	less than or equal to ±1% (Power voltage ±10%, If rotation at the rated speed No load)								
	Temperature	less than or equal to ±1% (0~+40℃, If rotation at the rated speed No load)								

Common Specification

Items	Specifications
Rotation speed setting method	Controller panel's speed
Acceleration time/ deceleration time	0.5~10 seconds : 2000r/min no load (It may change depending on the load size). To set acceleration time, it is set at slow start on the front panel. To set deceleration time, it is set at slow stop.
Input signal	Photo coupler input method, operating at input resistance of 10kΩ DC 12V±10%,Common in EXT, CW, and CCW
Output signal	Open collector output, External use conditions: less than 26.4V 10mA, common in SPEED OUT/ALARM OUT
Protection function	If the following protection function is operating, then control unit alarm signal gets generated and motor stops automatically. ● Overload protection function : If more than the rated torque is applied to the motor for more than 5 seconds ● Overvoltage protection function : If voltage applied to the control unit goes over the upper bound of the rating voltage allowance ● Open phase protection : If cable sensor line gets disconnected during motor operation ● Undervoltage protection : If voltage applied to the control unit is less than the lower bound of the rating voltage allowance ● Over speed protection : If motor rotation speed is faster than 2500r/min
Motor insulation class	E Type(120℃)
Rated time	Continuous

Normal specifications

Items		Motor	Control unit
Insulation Resistance		After continuously operating at room temperature and humidity, it should begreater than 100㏁ between coil and case when measured with DC 500V MEGA TESTER	Protection ground terminal and power input should be greater than 100㏁ when measure with DC 500V MEGA TESTER
Dielectric Strength		After continuously operating at room temperature and humidity, there shouldn't be any problem if 60㎐, 1500V is applied for more than 1 minute between coil and case	There shouldn't be nay problem if 60㎐, 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℃ and less than 50℃ of temperature increase on the case surface when measure with thermo couple	
Used environment	Used Ambient temperature	0℃~+40℃ (There should not be any freeze)	
	Used Ambient Humidity	less than 85% (no dew condensation)	
	Ambient environment	No corrosive gas or dusts	
Conservation environment	Ambient temperature	-25 ~ +70℃ (There should not be any freeze)	
	Ambient Humidity	less than 85% (no dew condensation)	
Protection class		IP65(Except for the mounting part on the output part)	IP10

Delivery effciency of gearhead

Unit = N·m

	Deceleration ratio	5	10	15	20	30	50	100	200
Product name	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%							

Allowed torque of combination type

Unit = N·m

Product name	Deceleration ratio	5	10	15	20	30	50	100	200
	Speed control range[r/min]	20~400	10~200	6.7~133	5~100	3.3~67	2~40	1~20	0.5~10
K6BH20N■ + K6H□B		0.45	0.9	1.4	1.8	2.6	4.3	6	6
K8BH40N■ + K8H□B		0.9	1.8	2.7	3.6	5.2	8.6	16	16
K9BH90N■ + K9H□B		2	4.1	6.1	8.1	11.6	19.4	30	30
K6BH20N■ + K6H□BTH		0.4	0.85	1.3	1.7	2.6	4.3	8.5	17
K8BH40N■ + 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
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
K9BH150N■ + K9H□B		2.4	4.7	7.1	9.5	13.6	22.7	30	30
K9BH150N■ + K9H□BTH		2	4.1	6.2	8.3	12.4	20.8	41.6	68
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
K10BH200NC + K10H□BU	100~3000r/min	2.9	5.9	8.8	11.7	16.8	28	52.7	70
	4000r/min	2.0	4.1	6.1	8.1	11.6	19.4	36.5	63
K10BH400NC + K10H□BU	100~3000r/min	5.9	11.7	17.6	23.4	33.5	55.9	70	70
	4000r/min	4.3	8.6	12.8	17.1	24.5	40.9	63	63

* In dimension, in ■ of name represents power voltage U(single-phase 100~115V), and C(single-phase 200~230V)
* 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.

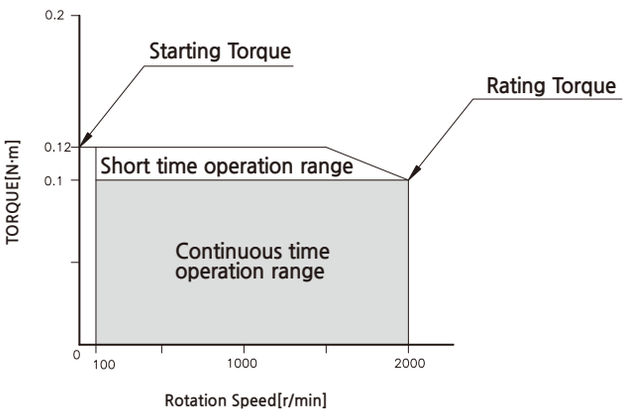
Allowed overhang load and allowed thrust

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
GEARED MOTOR	K6BH20N■ + K6H□B	5	100	10	150	15	40	4
		10,15,20	150	15	200	20		
		30,50,100,200	200	20	300	30		
	K8BH40N■ + K8H□B	5	200	20	250	25	100	10
		10,15,20	300	30	350	35		
		30,50,100,200	450	45	550	55		
	KPBH90N■ (K9BH150NC) + K9H□B	5	300	30	400	40	150	15
		10,15,20	400	40	500	50		
		30,50,100,200	500	50	650	65		
	K10BH200NC (K10BH400NC) + 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
	K6BH20N■ + K6H□BTH	5,10	450	45	370	37	200	20
		15~200	500	50	400	40		
	K8BH40N■ + K8H□BTH	5,10	800	80	660	66	400	40
		15~200	1200	120	1000	100		
	K9BH90N■ (K9BH150N■) + K9H□BTH	5,10	900	90	770	77	500	50
		15,20	1300	130	1110	111		
		30,50,100,200	1500	150	1280	128		
MOTOR	K6BS20N■		70	7	100	10	·Be careful not to weigh thrust. If it's inevitable, keep it under 50% of the motor weight.	
	K8BS40N■		120	12	140	14		
	K9BS90N■,K9BS150NC		160	16	170	17		
	K10BS200NC,K10BS400NC		197	19.7	220	22		

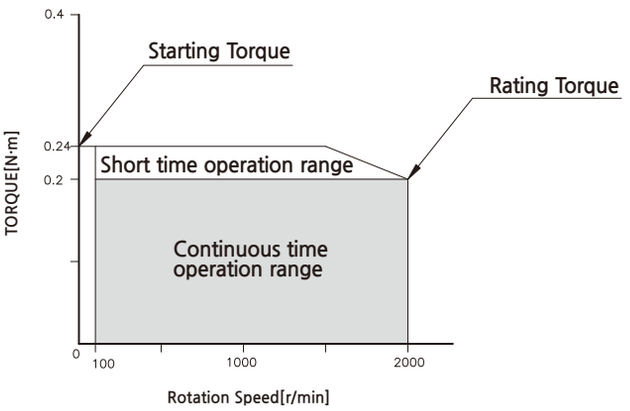
* In dimension, in ■ of name represents power voltage U(single-phase 100~115V),and C(single-phase 200~230V).
* In □ of name, it represents a deceleration ratio.
* Permissible overhang load can be withdrawn by calculation.

Rotation speed - torque characteristic

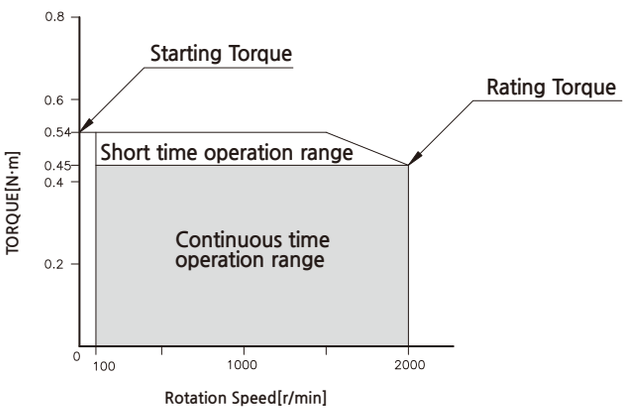
K6BS20N■ / K6BH20N■



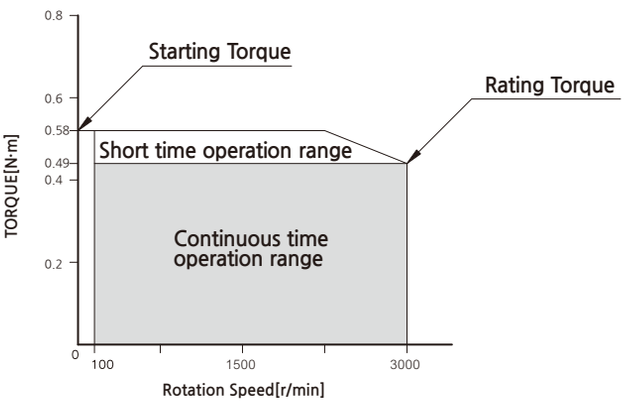
K8BS40N■ / K8BH40N■



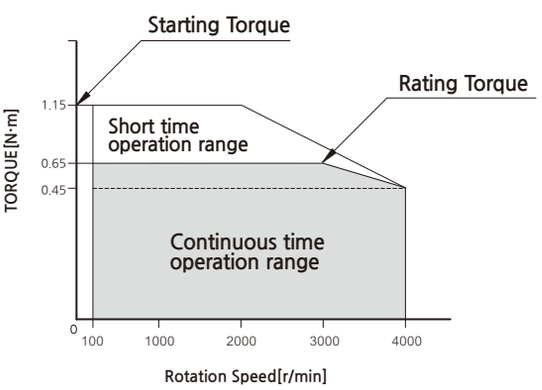
K9BS90N■ / K9BH90N■



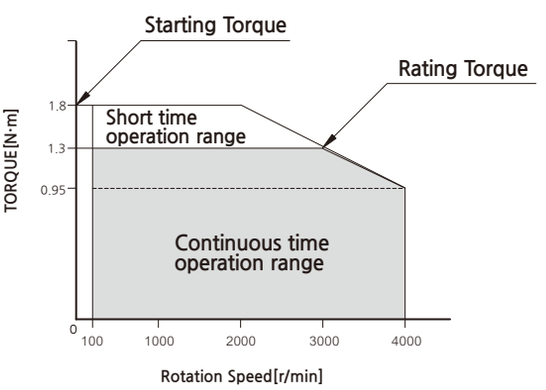
K9BS150NC / K9BH150NC



K10BS200NC



K10BS400NC



* In Dimension, in ■ of name represents power voltage U(single-phase 100~115V), C(single-phase 200~230V)

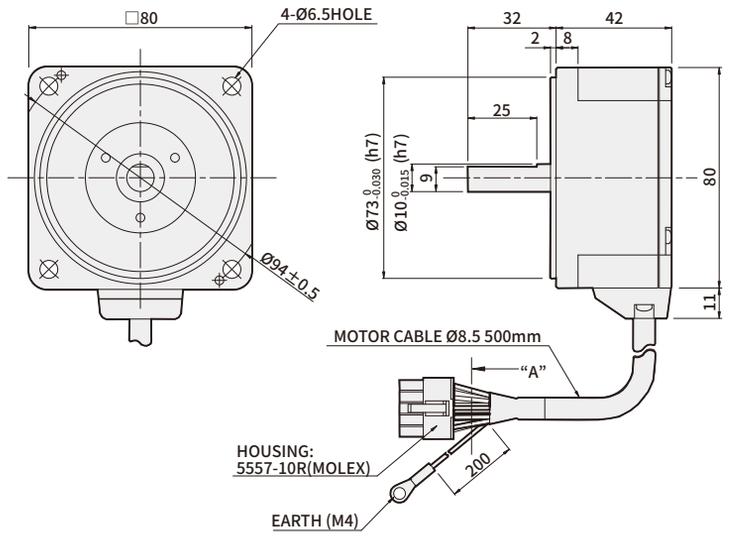
BRUSHLESS DC MOTOR UNIT - B Series

40W □80mm AC voltage input

DIMENSIONS

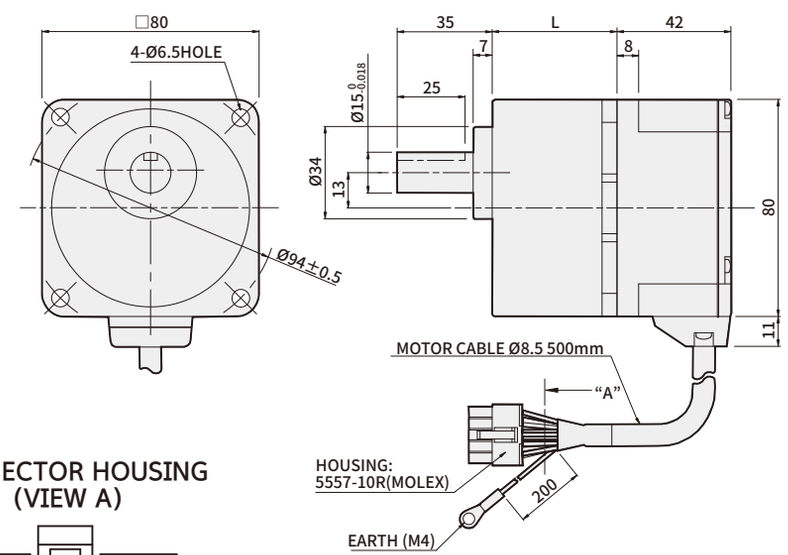
K8BS40N■

(Weight : 0.8Kg)

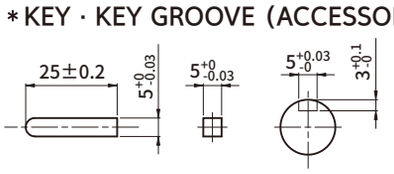


K8BH40N■ + K8H□B

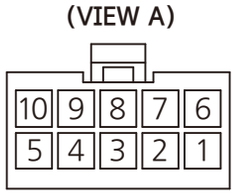
(Weight : 1.7Kg)



* KEY · KEY GROOVE (ACCESSORY)



* CONNECTOR HOUSING (VIEW A)



MOTOR PRODUCT NAME	GEARHEAD PRODUCT NAME	DECELERATION RATIO	L	FIXING BOLT
K8BH40N■	K8H□B	5~20	41	M6 P1.0×65
		30~100	46	M6 P1.0×70
		200	51	M6 P1.0×75

* 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

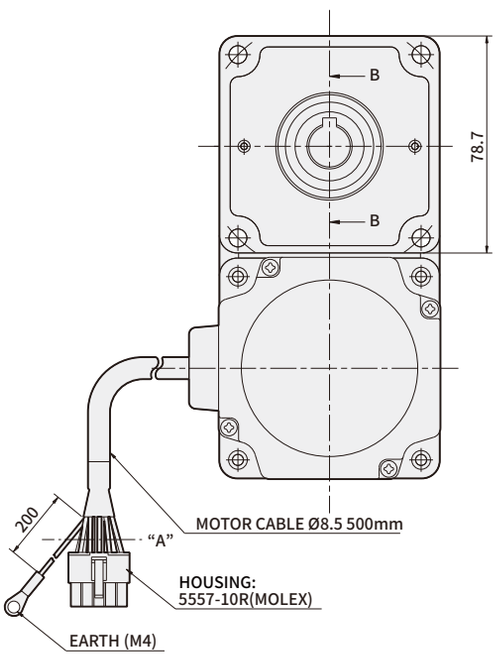
* In dimension, in ■ of name represents power voltage U(single-phase 100~115V), C(single-phase 200~230V)
* In □ of name, it represents a deceleration ratio.
* Geared motor is included with fixing bolt set. (flat washer, spring washer, hexagonal nut 4pcs each)

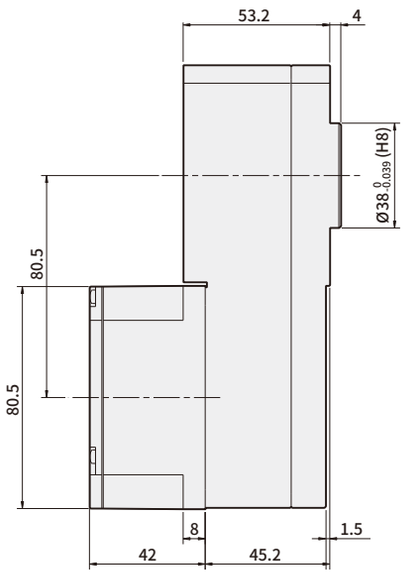
BRUSHLESS DC MOTOR UNIT - B Series

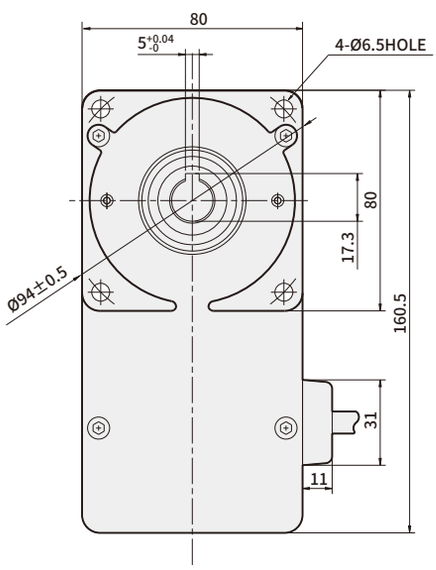
DIMENSIONS

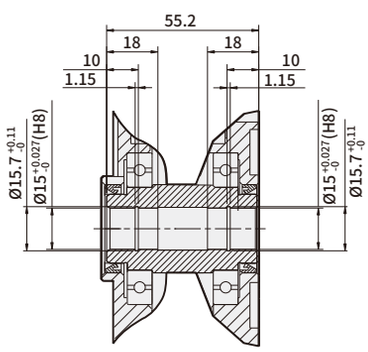
K8BH40N■ + K8H□BTH

(Weight : 2.3Kg)



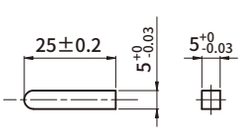




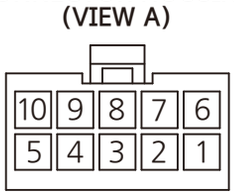


SECTION B-B

* KEY (ACCESSORY)



* CONNECTOR HOUSING (VIEW A)



* 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

MOTOR PRODUCT NAME	GEARHEAD PRODUCT NAME	DECELERATION RATIO	FIXING BOLT
K8BH40N■	K8H□BTH	5~200	M6 P1.0×70

* In Dimension, in ■ of name represents power voltage U(single-phase 100~115V), C(single-phase 200~230V)
* In □ of name, it represents a deceleration ratio.
* Mounting bolt sets are included in flat type gearbox.
  M6×70L (flat washer, spring washer, hexagonal nut 4pcs each)

Specification

Product name	GEAR TYPE	K6BH20NU	K6BH20NC	K8BH40NU	K8BH40NC	K9BH90NU	K9BH90NC	K9BH150NC	K10BH200NC	K10BH400NC
	D-CUT TYPE	K6BS20NU	K6BS20NC	K8BS40NU	K8BS40NC	K9BS90NU	K9BS90NC	K9BS150NC	K10BS200NC	K10BS400NC
Rating output (continuous) W		20		40		90		150	200	400
Power input	Voltage V	100~115	200~230	100~115	200~230	100~115	200~230	200~230	200~230	200~230
	Frequency Hz	50/60								
	Rating input current A	0.95	0.55	1.45	0.85	2.55	1.45	2.1	2.8	5.6
	Maximum input current A	1.55	0.9	2.5	1.4	3.9	2.4	4	5.1	7.8
Rating torque N·m(kgf·cm)		0.1(1.0)		0.2(2.0)		0.45(4.5)		0.49(4.9)	0.65(6.5)	1.3(13)
Starting torque N·m(kgf·cm)		0.12(1.2)		0.24(2.4)		0.54(5.4)		0.63(6.3)	1.15(11.5)	1.8(18)
Rating rotation speed r/min		2,000						3,000		
Speed control range r/min		100~2,000						100~3,000	100~4,000	
Allowed inertia load moment of motor	J kg·m^2	0.5×10^{-4}		1.8×10^{-4}		5.8×10^{-4}		5.8×10^{-4}	8.75×10^{-4}	15×10^{-4}
Speed change rate	Load	less than or equal to ±1% (0~Rating torque, If rotating at the rated speed)								
	Voltage	less than or equal to ±1% (Power voltage ±10%, If rotation at the rated speed No load)								
	Temperature	less than or equal to ±1% (0~+40℃, If rotation at the rated speed No load)								

Common Specification

Items	Specifications
Rotation speed setting method	Controller panel's speed
Acceleration time/ deceleration time	0.5~10 seconds : 2000r/min no load (It may change depending on the load size). To set acceleration time, it is set at slow start on the front panel. To set deceleration time, it is set at slow stop.
Input signal	Photo coupler input method, operating at input resistance of 10kΩ DC 12V±10%,Common in EXT, CW, and CCW
Output signal	Open collector output, External use conditions: less than 26.4V 10mA, common in SPEED OUT/ALARM OUT
Protection function	If the following protection function is operating, then control unit alarm signal gets generated and motor stops automatically. ● Overload protection function : If more than the rated torque is applied to the motor for more than 5 seconds ● Overvoltage protection function : If voltage applied to the control unit goes over the upper bound of the rating voltage allowance ● Open phase protection : If cable sensor line gets disconnected during motor operation ● Undervoltage protection : If voltage applied to the control unit is less than the lower bound of the rating voltage allowance ● Over speed protection : If motor rotation speed is faster than 2500r/min
Motor insulation class	E Type(120℃)
Rated time	Continuous

Normal specifications

Items		Motor	Control unit
Insulation Resistance		After continuously operating at room temperature and humidity, it should begreater than 100㏁ between coil and case when measured with DC 500V MEGA TESTER	Protection ground terminal and power input should be greater than 100㏁ when measure with DC 500V MEGA TESTER
Dielectric Strength		After continuously operating at room temperature and humidity, there shouldn't be any problem if 60㎐, 1500V is applied for more than 1 minute between coil and case	There shouldn't be nay problem if 60㎐, 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℃ and less than 50℃ of temperature increase on the case surface when measure with thermo couple	
Used environment	Used Ambient temperature	0℃~+40℃ (There should not be any freeze)	
	Used Ambient Humidity	less than 85% (no dew condensation)	
	Ambient environment	No corrosive gas or dusts	
Conservation environment	Ambient temperature	-25 ~ +70℃ (There should not be any freeze)	
	Ambient Humidity	less than 85% (no dew condensation)	
Protection class		IP65(Except for the mounting part on the output part)	IP10

Delivery effciency of gearhead

Unit = N·m

	Deceleration ratio	5	10	15	20	30	50	100	200
Product name	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%							

Allowed torque of combination type

Unit = N·m

Product name	Deceleration ratio	5	10	15	20	30	50	100	200
	Speed control range[r/min]	20~400	10~200	6.7~133	5~100	3.3~67	2~40	1~20	0.5~10
K6BH20N■ + K6H□B		0.45	0.9	1.4	1.8	2.6	4.3	6	6
K8BH40N■ + K8H□B		0.9	1.8	2.7	3.6	5.2	8.6	16	16
K9BH90N■ + K9H□B		2	4.1	6.1	8.1	11.6	19.4	30	30
K6BH20N■ + K6H□BTH		0.4	0.85	1.3	1.7	2.6	4.3	8.5	17
K8BH40N■ + 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
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
K9BH150N■ + K9H□B		2.4	4.7	7.1	9.5	13.6	22.7	30	30
K9BH150N■ + K9H□BTH		2	4.1	6.2	8.3	12.4	20.8	41.6	68
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
K10BH200NC + K10H□BU	100~3000r/min	2.9	5.9	8.8	11.7	16.8	28	52.7	70
	4000r/min	2.0	4.1	6.1	8.1	11.6	19.4	36.5	63
K10BH400NC + K10H□BU	100~3000r/min	5.9	11.7	17.6	23.4	33.5	55.9	70	70
	4000r/min	4.3	8.6	12.8	17.1	24.5	40.9	63	63

* In dimension, in ■ of name represents power voltage U(single-phase 100~115V), and C(single-phase 200~230V)
* 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.

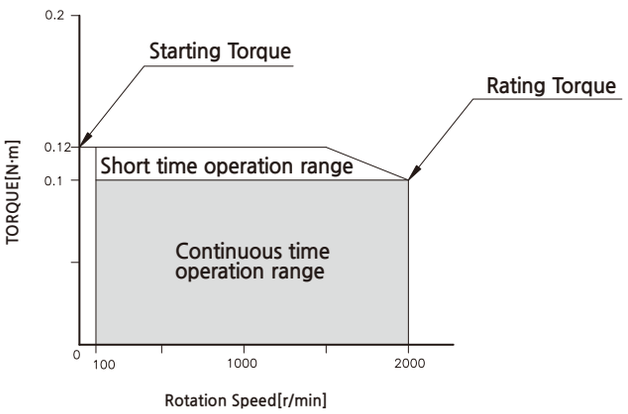
Allowed overhang load and allowed thrust

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
GEARED MOTOR	K6BH20N■ + K6H□B	5	100	10	150	15	40	4
		10,15,20	150	15	200	20		
		30,50,100,200	200	20	300	30		
	K8BH40N■ + K8H□B	5	200	20	250	25	100	10
		10,15,20	300	30	350	35		
		30,50,100,200	450	45	550	55		
	KPBH90N■ (K9BH150NC) + K9H□B	5	300	30	400	40	150	15
		10,15,20	400	40	500	50		
		30,50,100,200	500	50	650	65		
	K10BH200NC (K10BH400NC) + 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
	K6BH20N■ + K6H□BTH	5,10	450	45	370	37	200	20
		15~200	500	50	400	40		
	K8BH40N■ + K8H□BTH	5,10	800	80	660	66	400	40
		15~200	1200	120	1000	100		
	K9BH90N■ (K9BH150N■) + K9H□BTH	5,10	900	90	770	77	500	50
		15,20	1300	130	1110	111		
		30,50,100,200	1500	150	1280	128		
MOTOR	K6BS20N■		70	7	100	10	·Be careful not to weigh thrust. If it's inevitable, keep it under 50% of the motor weight.	
	K8BS40N■		120	12	140	14		
	K9BS90N■,K9BS150NC		160	16	170	17		
	K10BS200NC,K10BS400NC		197	19.7	220	22		

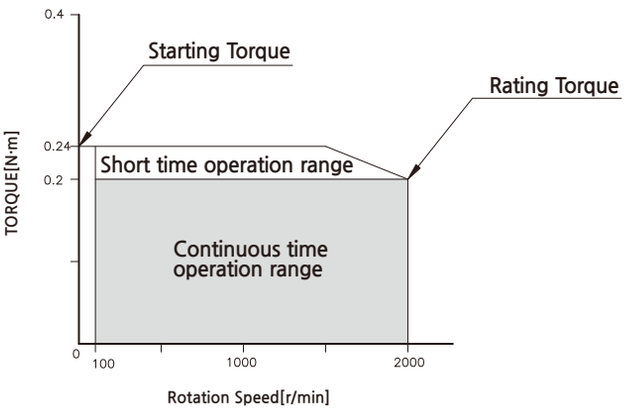
* In dimension, in ■ of name represents power voltage U(single-phase 100~115V),and C(single-phase 200~230V).
* In □ of name, it represents a deceleration ratio.
* Permissible overhang load can be withdrawn by calculation.

Rotation speed - torque characteristic

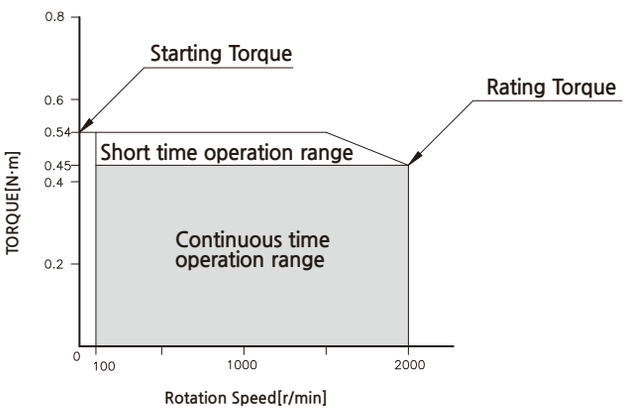
K6BS20N■ / K6BH20N■



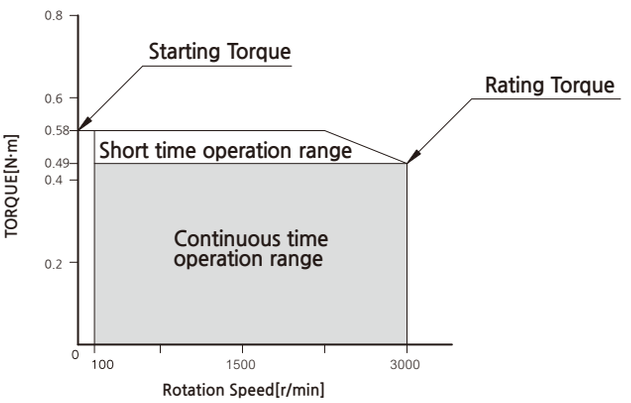
K8BS40N■ / K8BH40N■



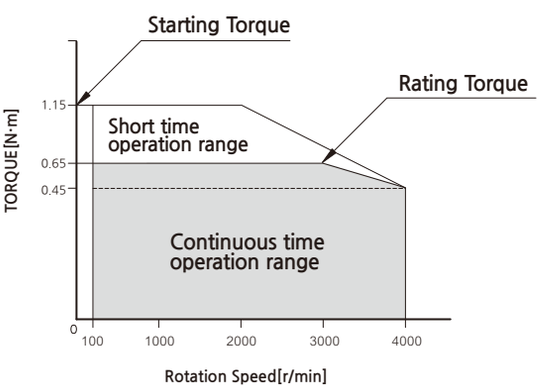
K9BS90N■ / K9BH90N■



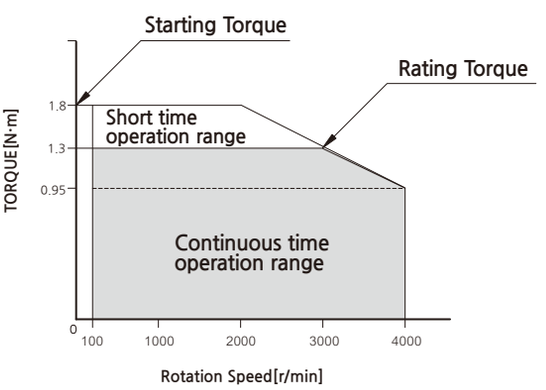
K9BS150NC / K9BH150NC



K10BS200NC



K10BS400NC



* In Dimension, in ■ of name represents power voltage U(single-phase 100~115V), C(single-phase 200~230V)

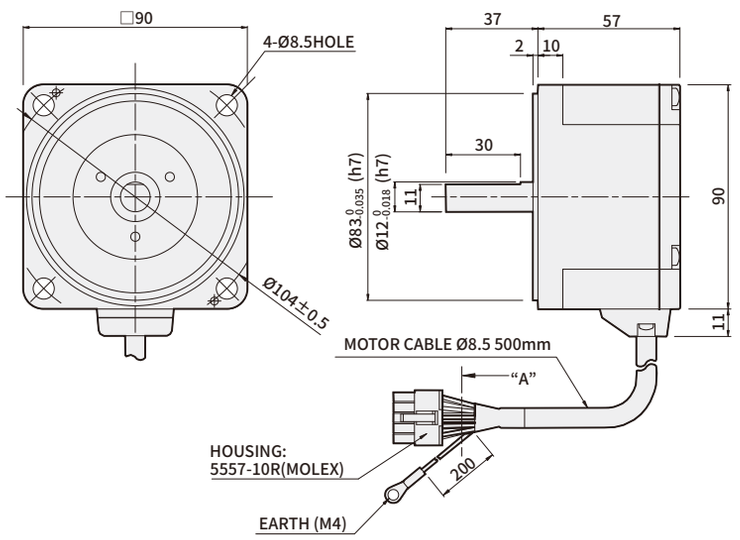
BRUSHLESS DC MOTOR UNIT - B Series

90W □90mm AC voltage input

DIMENSIONS

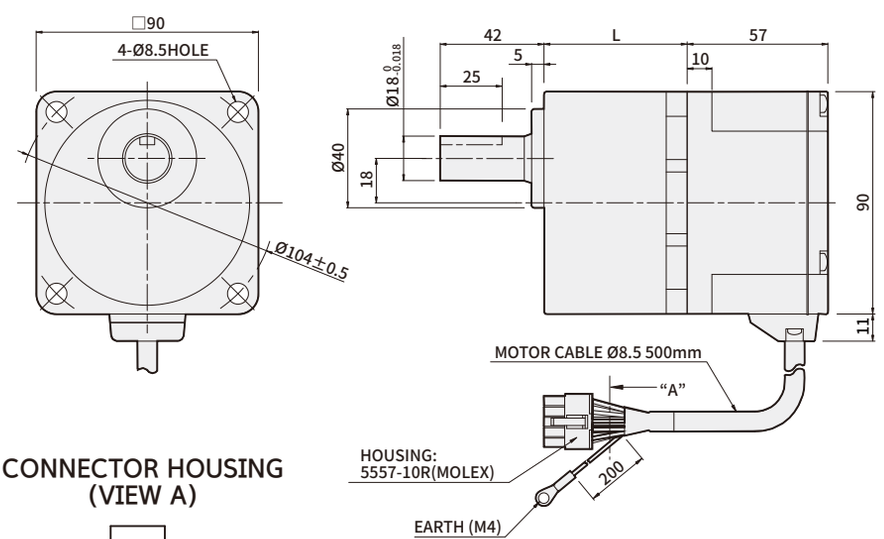
K9BS90N■

(Weight : 1.3Kg)

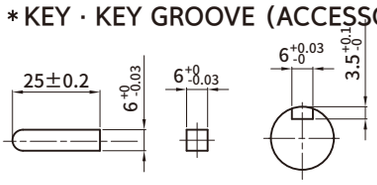


K9BH90N■ + K9H□B

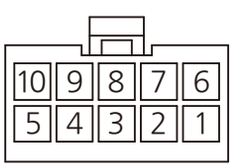
(Weight : 2.6Kg)



* KEY · KEY GROOVE (ACCESSORY)



* CONNECTOR HOUSING (VIEW A)



* 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

MOTOR PRODUCT NAME	GEARHEAD PRODUCT NAME	DECELERATION RATIO	L	FIXING BOLT
K9BH90N■	K9H□B	5~20	45	M8 P1.25×75
		30~100	58	M8 P1.25×90
		200	64	M8 P1.25×95

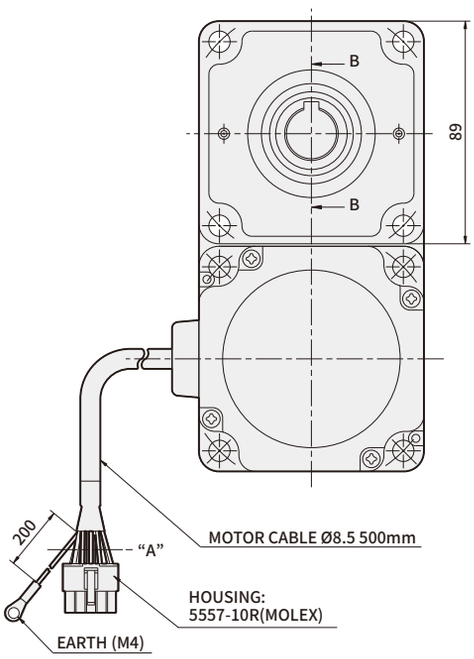
* In dimension, in ■ of name represents power voltage U(single-phase 100~115V), C(single-phase 200~230V)
* In □ of name, it represents a deceleration ratio.
* Geared motor is included with fixing bolt set. (flat washer, spring washer, hexagonal nut 4pcs each)

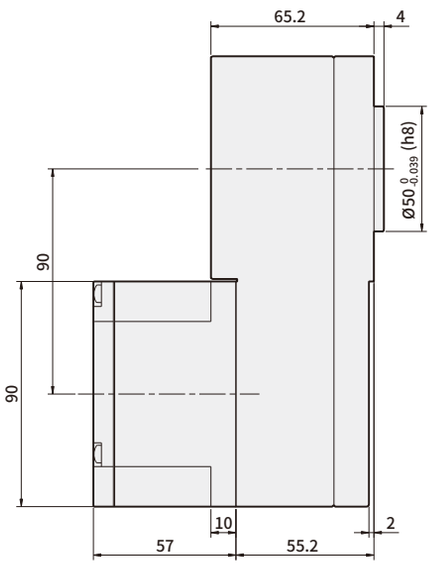
BRUSHLESS DC MOTOR UNIT - B Series

DIMENSIONS

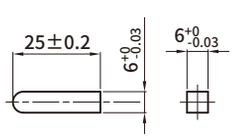
K9BH90N■ + K9H□BTH

(Weight : 3.4Kg)

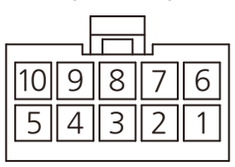


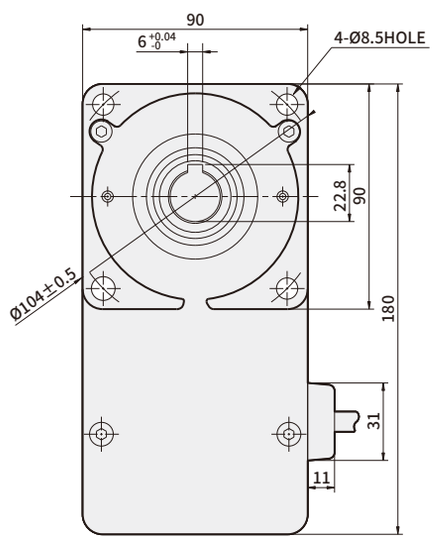


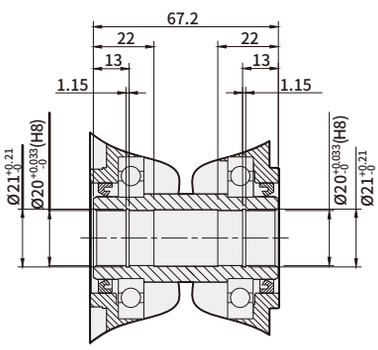
*KEY (ACCESSORY)



* CONNECTOR HOUSING (VIEW A)







SECTION B-B

MOTOR PRODUCT NAME	GEARHEAD PRODUCT NAME	DECELERATION RATIO	FIXING BOLT
K9BH90N■	K9H□BTH	5~200	M8 P1.25×90

* In Dimension, in ■ of name represents power voltage U(single-phase 100~115V), C(single-phase 200~230V)
* In □ of name, it represents a deceleration ratio.
* Mounting bolt sets are included in flat type gearbox.
  M8×90L (flat washer, spring washer, hexagonal nut 4pcs each)

* 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

Specification

Product name	GEAR TYPE	K6BH20NU	K6BH20NC	K8BH40NU	K8BH40NC	K9BH90NU	K9BH90NC	K9BH150NC	K10BH200NC	K10BH400NC
	D-CUT TYPE	K6BS20NU	K6BS20NC	K8BS40NU	K8BS40NC	K9BS90NU	K9BS90NC	K9BS150NC	K10BS200NC	K10BS400NC
Rating output (continuous) W		20		40		90		150	200	400
Power input	Voltage V	100~115	200~230	100~115	200~230	100~115	200~230	200~230	200~230	200~230
	Frequency Hz	50/60								
	Rating input current A	0.95	0.55	1.45	0.85	2.55	1.45	2.1	2.8	5.6
	Maximum input current A	1.55	0.9	2.5	1.4	3.9	2.4	4	5.1	7.8
Rating torque N·m(kgf·cm)		0.1(1.0)		0.2(2.0)		0.45(4.5)		0.49(4.9)	0.65(6.5)	1.3(13)
Starting torque N·m(kgf·cm)		0.12(1.2)		0.24(2.4)		0.54(5.4)		0.63(6.3)	1.15(11.5)	1.8(18)
Rating rotation speed r/min		2,000						3,000		
Speed control range r/min		100~2,000						100~3,000	100~4,000	
Allowed inertia load moment of motor	J kg·m^2	0.5×10^{-4}		1.8×10^{-4}		5.8×10^{-4}		5.8×10^{-4}	8.75×10^{-4}	15×10^{-4}
Speed change rate	Load	less than or equal to ±1% (0~Rating torque, If rotating at the rated speed)								
	Voltage	less than or equal to ±1% (Power voltage ±10%, If rotation at the rated speed No load)								
	Temperature	less than or equal to ±1% (0~+40℃, If rotation at the rated speed No load)								

Common Specification

Items	Specifications
Rotation speed setting method	Controller panel's speed
Acceleration time/ deceleration time	0.5~10 seconds : 2000r/min no load (It may change depending on the load size). To set acceleration time, it is set at slow start on the front panel. To set deceleration time, it is set at slow stop.
Input signal	Photo coupler input method, operating at input resistance of 10kΩ DC 12V±10%,Common in EXT, CW, and CCW
Output signal	Open collector output, External use conditions: less than 26.4V 10mA, common in SPEED OUT/ALARM OUT
Protection function	If the following protection function is operating, then control unit alarm signal gets generated and motor stops automatically. ● Overload protection function : If more than the rated torque is applied to the motor for more than 5 seconds ● Overvoltage protection function : If voltage applied to the control unit goes over the upper bound of the rating voltage allowance ● Open phase protection : If cable sensor line gets disconnected during motor operation ● Undervoltage protection : If voltage applied to the control unit is less than the lower bound of the rating voltage allowance ● Over speed protection : If motor rotation speed is faster than 2500r/min
Motor insulation class	E Type(120℃)
Rated time	Continuous

Normal specifications

Items		Motor	Control unit
Insulation Resistance		After continuously operating at room temperature and humidity, it should begreater than 100㏁ between coil and case when measured with DC 500V MEGA TESTER	Protection ground terminal and power input should be greater than 100㏁ when measure with DC 500V MEGA TESTER
Dielectric Strength		After continuously operating at room temperature and humidity, there shouldn't be any problem if 60㎐, 1500V is applied for more than 1 minute between coil and case	There shouldn't be nay problem if 60㎐, 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℃ and less than 50℃ of temperature increase on the case surface when measure with thermo couple	
Used environment	Used Ambient temperature	0℃~+40℃ (There should not be any freeze)	
	Used Ambient Humidity	less than 85% (no dew condensation)	
	Ambient environment	No corrosive gas or dusts	
Conservation environment	Ambient temperature	-25 ~ +70℃ (There should not be any freeze)	
	Ambient Humidity	less than 85% (no dew condensation)	
Protection class		IP65(Except for the mounting part on the output part)	IP10

Delivery effciency of gearhead

Unit = N·m

	Deceleration ratio	5	10	15	20	30	50	100	200
Product name	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%							

Allowed torque of combination type

Unit = N·m

Product name	Deceleration ratio	5	10	15	20	30	50	100	200
	Speed control range[r/min]	20~400	10~200	6.7~133	5~100	3.3~67	2~40	1~20	0.5~10
K6BH20N■ + K6H□B		0.45	0.9	1.4	1.8	2.6	4.3	6	6
K8BH40N■ + K8H□B		0.9	1.8	2.7	3.6	5.2	8.6	16	16
K9BH90N■ + K9H□B		2	4.1	6.1	8.1	11.6	19.4	30	30
K6BH20N■ + K6H□BTH		0.4	0.85	1.3	1.7	2.6	4.3	8.5	17
K8BH40N■ + 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
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
K9BH150N■ + K9H□B		2.4	4.7	7.1	9.5	13.6	22.7	30	30
K9BH150N■ + K9H□BTH		2	4.1	6.2	8.3	12.4	20.8	41.6	68
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
K10BH200NC + K10H□BU	100~3000r/min	2.9	5.9	8.8	11.7	16.8	28	52.7	70
	4000r/min	2.0	4.1	6.1	8.1	11.6	19.4	36.5	63
K10BH400NC + K10H□BU	100~3000r/min	5.9	11.7	17.6	23.4	33.5	55.9	70	70
	4000r/min	4.3	8.6	12.8	17.1	24.5	40.9	63	63

* In dimension, in ■ of name represents power voltage U(single-phase 100~115V), and C(single-phase 200~230V)
* 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.

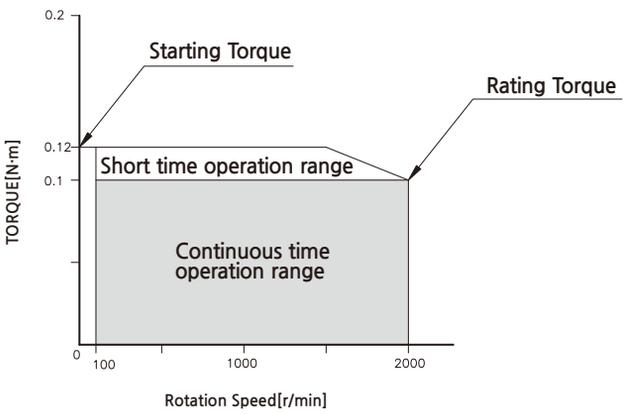
Allowed overhang load and allowed thrust

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
GEARED MOTOR	K6BH20N■ + K6H□B	5	100	10	150	15	40	4
		10,15,20	150	15	200	20		
		30,50,100,200	200	20	300	30		
	K8BH40N■ + K8H□B	5	200	20	250	25	100	10
		10,15,20	300	30	350	35		
		30,50,100,200	450	45	550	55		
	KPBH90N■ (K9BH150NC) + K9H□B	5	300	30	400	40	150	15
		10,15,20	400	40	500	50		
		30,50,100,200	500	50	650	65		
	K10BH200NC (K10BH400NC) + 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
	K6BH20N■ + K6H□BTH	5,10	450	45	370	37	200	20
		15~200	500	50	400	40		
	K8BH40N■ + K8H□BTH	5,10	800	80	660	66	400	40
		15~200	1200	120	1000	100		
	K9BH90N■ (K9BH150N■) + K9H□BTH	5,10	900	90	770	77	500	50
		15,20	1300	130	1110	111		
		30,50,100,200	1500	150	1280	128		
MOTOR	K6BS20N■		70	7	100	10	·Be careful not to weigh thrust. If it's inevitable, keep it under 50% of the motor weight.	
	K8BS40N■		120	12	140	14		
	K9BS90N■,K9BS150NC		160	16	170	17		
	K10BS200NC,K10BS400NC		197	19.7	220	22		

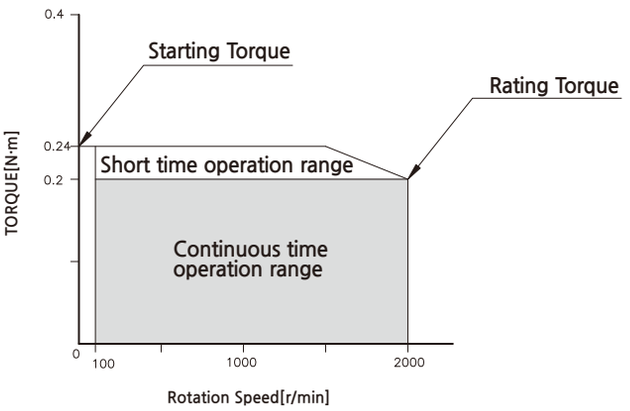
* In dimension, in ■ of name represents power voltage U(single-phase 100~115V),and C(single-phase 200~230V).
* In □ of name, it represents a deceleration ratio.
* Permissible overhang load can be withdrawn by calculation.

Rotation speed - torque characteristic

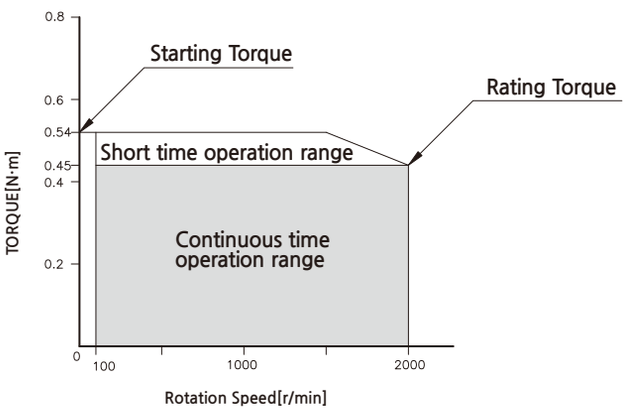
K6BS20N■ / K6BH20N■



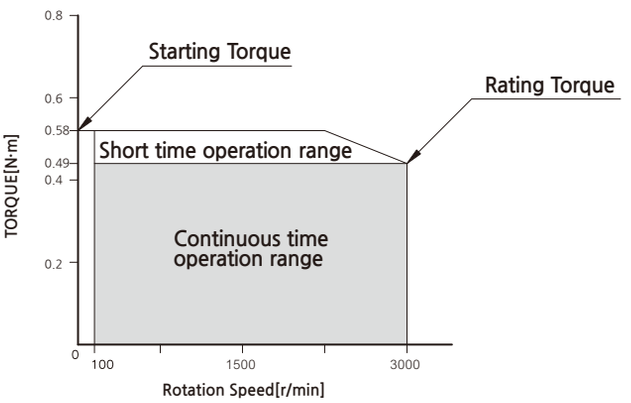
K8BS40N■ / K8BH40N■



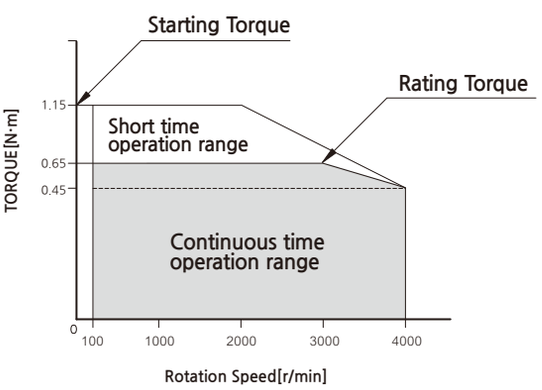
K9BS90N■ / K9BH90N■



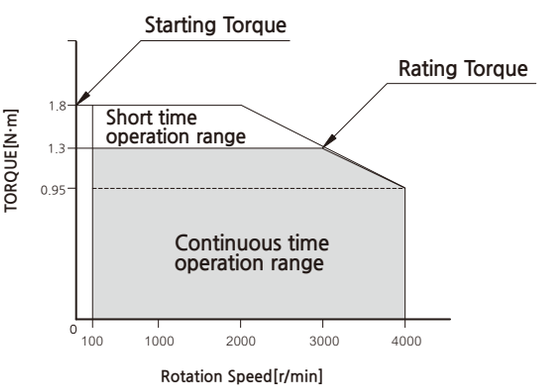
K9BS150NC / K9BH150NC



K10BS200NC



K10BS400NC



* In Dimension, in ■ of name represents power voltage U(single-phase 100~115V), C(single-phase 200~230V)

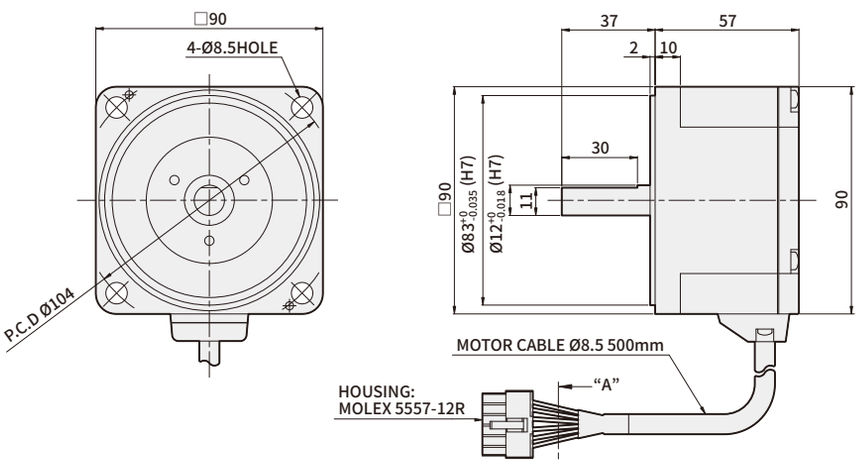
BRUSHLESS DC MOTOR UNIT - B Series

150W □90mm AC voltage input

DIMENSIONS

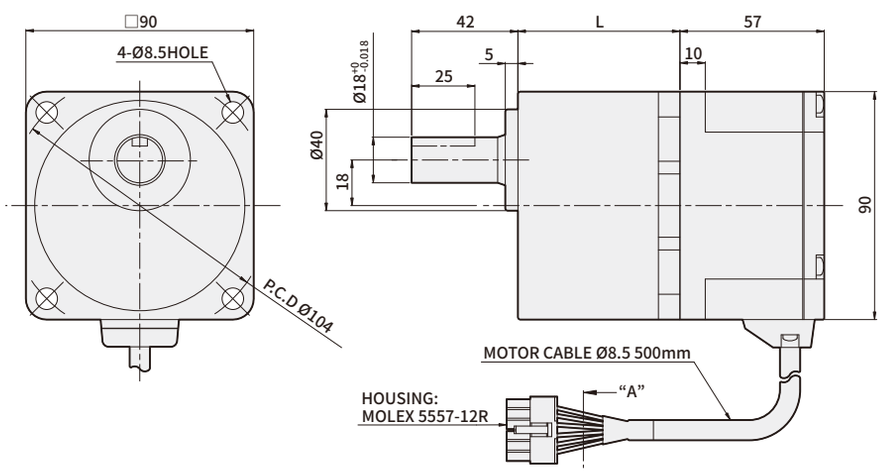
K9BS150NC

(Weight : 1.3Kg)

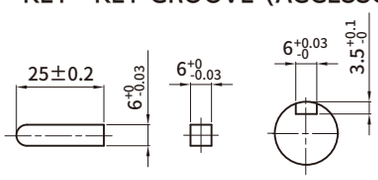


K9BH150NC + K9H□B

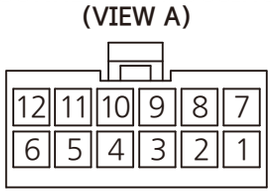
(weight : 2.6Kg)



* KEY · KEY GROOVE (ACCESSORY)



* CONNECTOR HOUSING (VIEW A)



MOTOR PRODUCT NAME	GEARHEAD PRODUCT NAME	DECELERATION RATIO	L	FIXING BOLT
K9BH150NC	K9H□B	5~20	45	M8 P1.25×75
		30~100	58	M8 P1.25×90
		200	64	M8 P1.25×95

* In □ of name, it represents a deceleration ratio.
* Geared motor is included with fixing bolt set. (flat washer, spring washer, hexagonal nut 4pcs each)

* PIN MAP

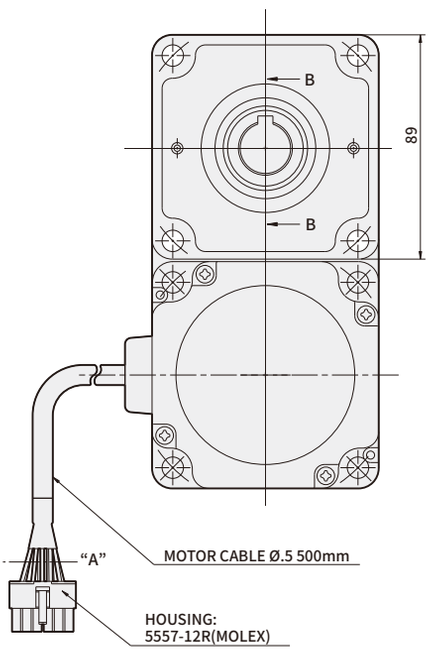
PIN No.	COLOR	SIGNAL
1	GRAY	W
2	-	-
3	-	-
4	ORANGE	Hw
5	WHITE	Hv
6	BROWN	Hu
7	PURPLE	V
8	BLUE	U
9	GREEN& YELLOW	FG
10		(DRAIN)
11	YELLOW	Vcc
12	GREEN	Ground

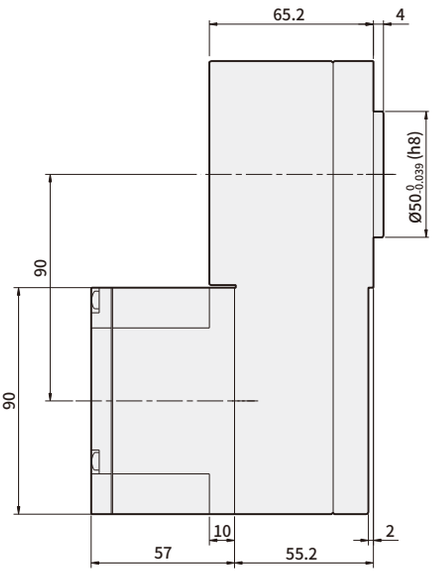
BRUSHLESS DC MOTOR UNIT - B Series

DIMENSIONS

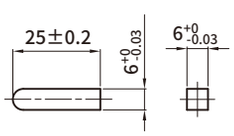
K9BH150NC + K9H□BTH

(Weight : 3.4Kg)

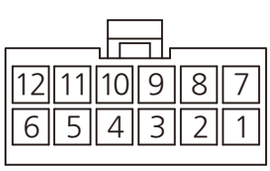


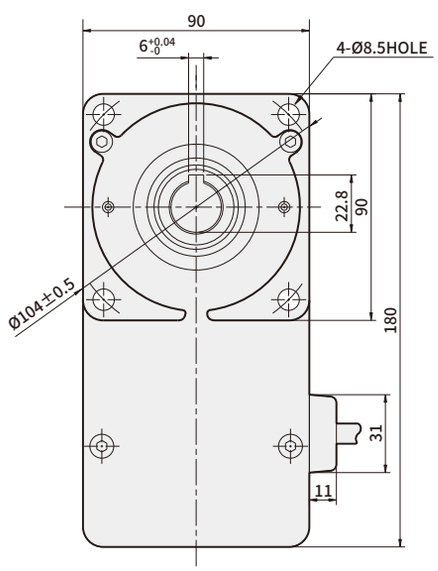


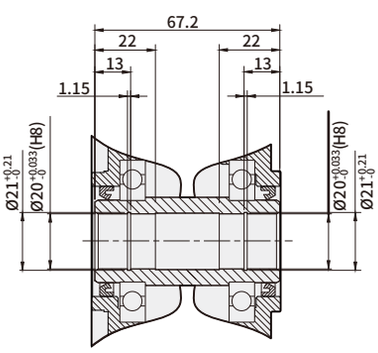
*KEY (ACCESSORY)



* CONNECTOR HOUSING (VIEW A)







SECTION B-B

MOTOR PRODUCT NAME	GEARHEAD PRODUCT NAME	DECELERATION RATIO	FIXING BOLT
K9BH150NC	K9H□BTH	5~200	M8 P1.25×90

* In □ of name, it represents a deceieration ratio.
* Mounting bolt sets are included in flat type gearbox.
  M8×90L (flat washer, spring washer, hexagonal nut 4pcs each)

* PIN MAP

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

Specification

Product name	GEAR TYPE	K6BH20NU	K6BH20NC	K8BH40NU	K8BH40NC	K9BH90NU	K9BH90NC	K9BH150NC	K10BH200NC	K10BH400NC
	D-CUT TYPE	K6BS20NU	K6BS20NC	K8BS40NU	K8BS40NC	K9BS90NU	K9BS90NC	K9BS150NC	K10BS200NC	K10BS400NC
Rating output (continuous) W		20		40		90		150	200	400
Power input	Voltage V	100~115	200~230	100~115	200~230	100~115	200~230	200~230	200~230	200~230
	Frequency Hz	50/60								
	Rating input current A	0.95	0.55	1.45	0.85	2.55	1.45	2.1	2.8	5.6
	Maximum input current A	1.55	0.9	2.5	1.4	3.9	2.4	4	5.1	7.8
Rating torque N·m(kgf·cm)		0.1(1.0)		0.2(2.0)		0.45(4.5)		0.49(4.9)	0.65(6.5)	1.3(13)
Starting torque N·m(kgf·cm)		0.12(1.2)		0.24(2.4)		0.54(5.4)		0.63(6.3)	1.15(11.5)	1.8(18)
Rating rotation speed r/min		2,000						3,000		
Speed control range r/min		100~2,000						100~3,000	100~4,000	
Allowed inertia load moment of motor	J kg·m^2	0.5×10^{-4}		1.8×10^{-4}		5.8×10^{-4}		5.8×10^{-4}	8.75×10^{-4}	15×10^{-4}
Speed change rate	Load	less than or equal to ±1% (0~Rating torque, If rotating at the rated speed)								
	Voltage	less than or equal to ±1% (Power voltage ±10%, If rotation at the rated speed No load)								
	Temperature	less than or equal to ±1% (0~+40℃, If rotation at the rated speed No load)								

Common Specification

Items	Specifications
Rotation speed setting method	Controller panel's speed
Acceleration time/ deceleration time	0.5~10 seconds : 2000r/min no load (It may change depending on the load size). To set acceleration time, it is set at slow start on the front panel. To set deceleration time, it is set at slow stop.
Input signal	Photo coupler input method, operating at input resistance of 10kΩ DC 12V±10%,Common in EXT, CW, and CCW
Output signal	Open collector output, External use conditions: less than 26.4V 10mA, common in SPEED OUT/ALARM OUT
Protection function	If the following protection function is operating, then control unit alarm signal gets generated and motor stops automatically. ● Overload protection function : If more than the rated torque is applied to the motor for more than 5 seconds ● Overvoltage protection function : If voltage applied to the control unit goes over the upper bound of the rating voltage allowance ● Open phase protection : If cable sensor line gets disconnected during motor operation ● Undervoltage protection : If voltage applied to the control unit is less than the lower bound of the rating voltage allowance ● Over speed protection : If motor rotation speed is faster than 2500r/min
Motor insulation class	E Type(120℃)
Rated time	Continuous

Normal specifications

Items		Motor	Control unit
Insulation Resistance		After continuously operating at room temperature and humidity, it should begreater than 100㏁ between coil and case when measured with DC 500V MEGA TESTER	Protection ground terminal and power input should be greater than 100㏁ when measure with DC 500V MEGA TESTER
Dielectric Strength		After continuously operating at room temperature and humidity, there shouldn't be any problem if 60㎐, 1500V is applied for more than 1 minute between coil and case	There shouldn't be nay problem if 60㎐, 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℃ and less than 50℃ of temperature increase on the case surface when measure with thermo couple	
Used environment	Used Ambient temperature	0℃~+40℃ (There should not be any freeze)	
	Used Ambient Humidity	less than 85% (no dew condensation)	
	Ambient environment	No corrosive gas or dusts	
Conservation environment	Ambient temperature	-25 ~ +70℃ (There should not be any freeze)	
	Ambient Humidity	less than 85% (no dew condensation)	
Protection class		IP65(Except for the mounting part on the output part)	IP10

Delivery effciency of gearhead

Unit = N·m

	Deceleration ratio	5	10	15	20	30	50	100	200
Product name	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%							

Allowed torque of combination type

Unit = N·m

Product name	Deceleration ratio	5	10	15	20	30	50	100	200
	Speed control range[r/min]	20~400	10~200	6.7~133	5~100	3.3~67	2~40	1~20	0.5~10
K6BH20N■ + K6H□B		0.45	0.9	1.4	1.8	2.6	4.3	6	6
K8BH40N■ + K8H□B		0.9	1.8	2.7	3.6	5.2	8.6	16	16
K9BH90N■ + K9H□B		2	4.1	6.1	8.1	11.6	19.4	30	30
K6BH20N■ + K6H□BTH		0.4	0.85	1.3	1.7	2.6	4.3	8.5	17
K8BH40N■ + 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
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
K9BH150N■ + K9H□B		2.4	4.7	7.1	9.5	13.6	22.7	30	30
K9BH150N■ + K9H□BTH		2	4.1	6.2	8.3	12.4	20.8	41.6	68
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
K10BH200NC + K10H□BU	100~3000r/min	2.9	5.9	8.8	11.7	16.8	28	52.7	70
	4000r/min	2.0	4.1	6.1	8.1	11.6	19.4	36.5	63
K10BH400NC + K10H□BU	100~3000r/min	5.9	11.7	17.6	23.4	33.5	55.9	70	70
	4000r/min	4.3	8.6	12.8	17.1	24.5	40.9	63	63

* In dimension, in ■ of name represents power voltage U(single-phase 100~115V), and C(single-phase 200~230V)
* 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.

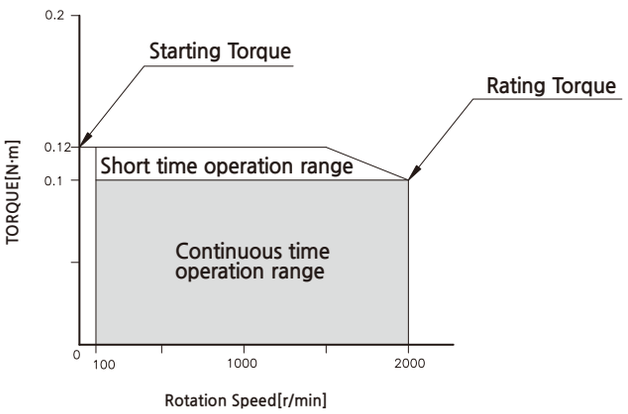
Allowed overhang load and allowed thrust

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
GEARED MOTOR	K6BH20N■ + K6H□B	5	100	10	150	15	40	4
		10,15,20	150	15	200	20		
		30,50,100,200	200	20	300	30		
	K8BH40N■ + K8H□B	5	200	20	250	25	100	10
		10,15,20	300	30	350	35		
		30,50,100,200	450	45	550	55		
	KPBH90N■ (K9BH150NC) + K9H□B	5	300	30	400	40	150	15
		10,15,20	400	40	500	50		
		30,50,100,200	500	50	650	65		
	K10BH200NC (K10BH400NC) + 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
	K6BH20N■ + K6H□BTH	5,10	450	45	370	37	200	20
		15~200	500	50	400	40		
	K8BH40N■ + K8H□BTH	5,10	800	80	660	66	400	40
		15~200	1200	120	1000	100		
	K9BH90N■ (K9BH150N■) + K9H□BTH	5,10	900	90	770	77	500	50
		15,20	1300	130	1110	111		
		30,50,100,200	1500	150	1280	128		
MOTOR	K6BS20N■		70	7	100	10	·Be careful not to weigh thrust. If it's inevitable, keep it under 50% of the motor weight.	
	K8BS40N■		120	12	140	14		
	K9BS90N■,K9BS150NC		160	16	170	17		
	K10BS200NC,K10BS400NC		197	19.7	220	22		

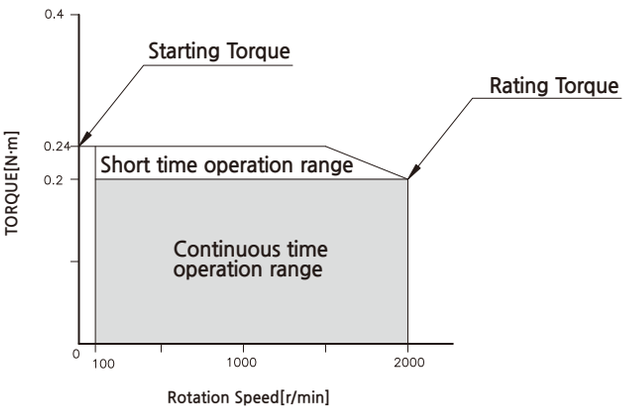
* In dimension, in ■ of name represents power voltage U(single-phase 100~115V),and C(single-phase 200~230V).
* In □ of name, it represents a deceleration ratio.
* Permissible overhang load can be withdrawn by calculation.

Rotation speed - torque characteristic

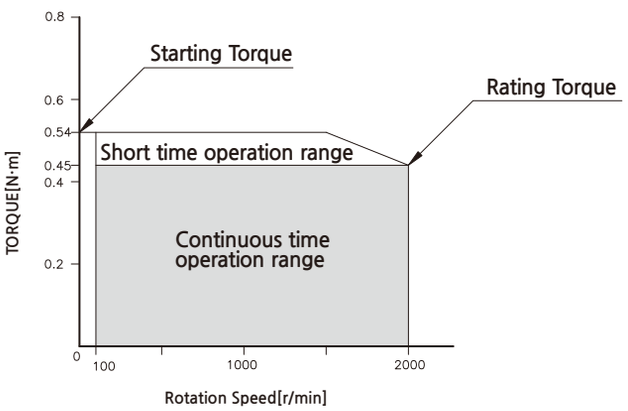
K6BS20N■ / K6BH20N■



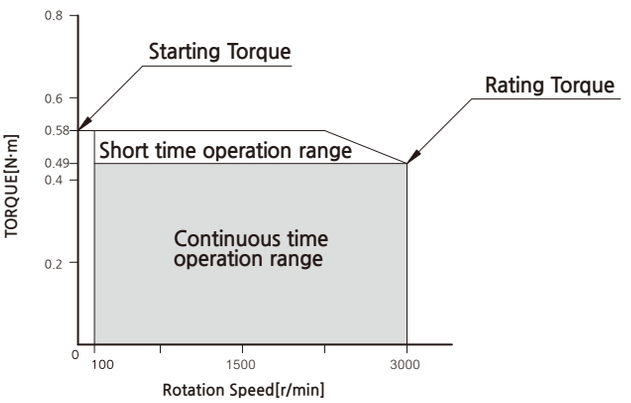
K8BS40N■ / K8BH40N■



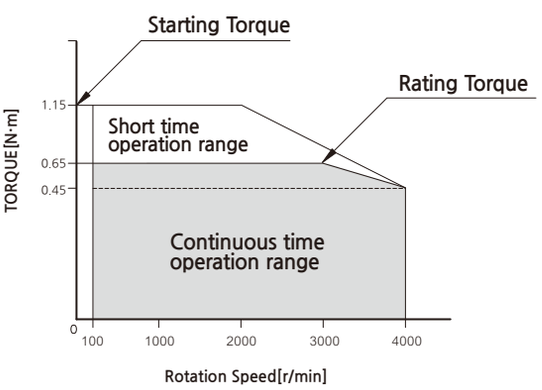
K9BS90N■ / K9BH90N■



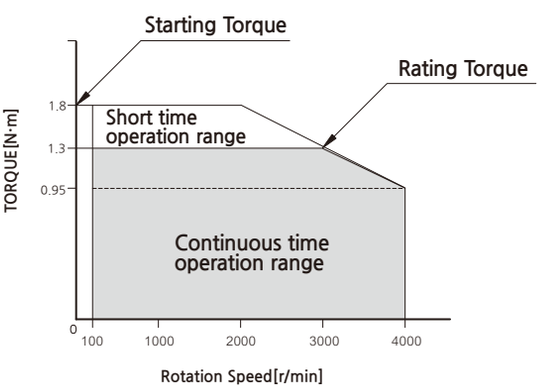
K9BS150NC / K9BH150NC



K10BS200NC



K10BS400NC



* In Dimension, in ■ of name represents power voltage U(single-phase 100~115V), C(single-phase 200~230V)

BRUSHLESS DC MOTOR UNIT - B Series

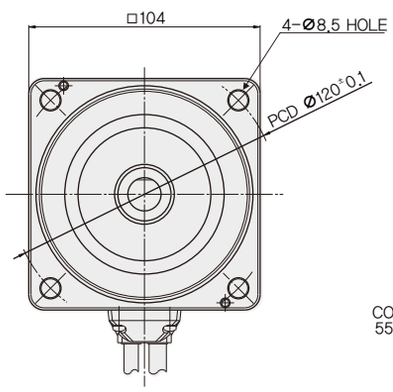
200W
400W

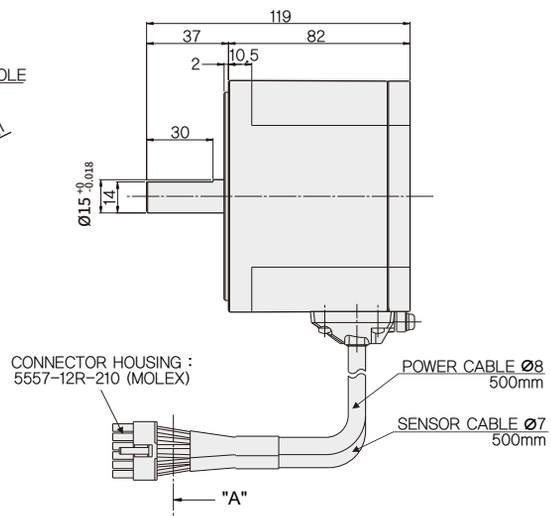
□104mm

AC voltage input

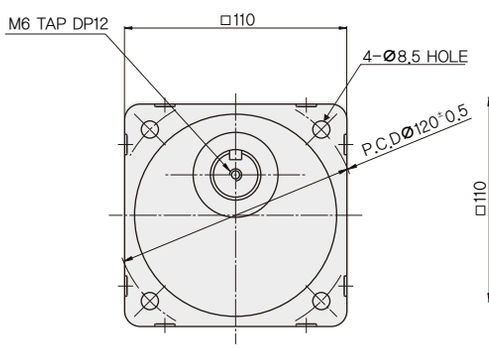
DIMENSIONS

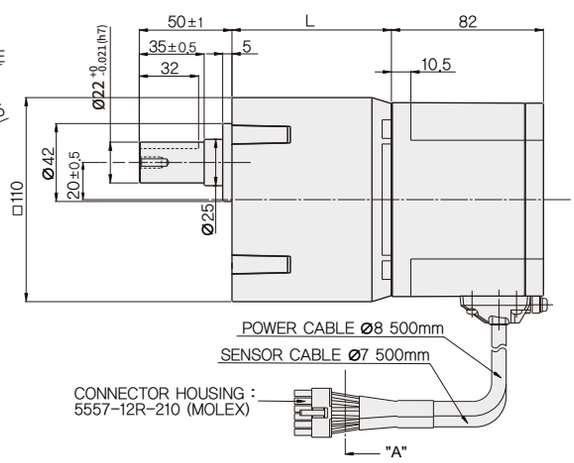
K10BS200NC
K10BS400NC
(Weight : 2.4Kg)





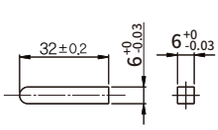
K10BH200NC + K10H□BU
K10BH400NC + K10H□BU
(Weight : 5.4Kg)



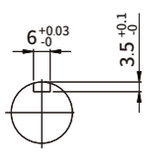


* KEY · KEY GROOVE (ACCESSORY)

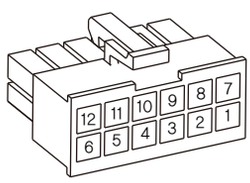
□ KEY



○ KEY GROOVE



* CONNECTOR HOUSING (VIEW A)



MOTOR PRODUCT NAME	GEARHEAD PRODUCT NAME	DECELERATION RATIO	L	FIXING BOLT
K10BH200NC	K10H□BU	5~20	60	M8 P1.25×95
		30~50	72	M8 P1.25×110
K10BH400NC		100~200	86	M8 P1.25×120

* In □ of name, it represents a deceleration ratio.
* Geared motor is included with fixing bolt set (normal WASHER, SPRING, WASHER, cube nut; 4 each)

* PIN MAP

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

Specification

Product name	GEAR TYPE	K6BH20NU	K6BH20NC	K8BH40NU	K8BH40NC	K9BH90NU	K9BH90NC	K9BH150NC	K10BH200NC	K10BH400NC
	D-CUT TYPE	K6BS20NU	K6BS20NC	K8BS40NU	K8BS40NC	K9BS90NU	K9BS90NC	K9BS150NC	K10BS200NC	K10BS400NC
Rating output (continuous) W		20		40		90		150	200	400
Power input	Voltage V	100~115	200~230	100~115	200~230	100~115	200~230	200~230	200~230	200~230
	Frequency Hz	50/60								
	Rating input current A	0.95	0.55	1.45	0.85	2.55	1.45	2.1	2.8	5.6
	Maximum input current A	1.55	0.9	2.5	1.4	3.9	2.4	4	5.1	7.8
Rating torque N·m(kgf·cm)		0.1(1.0)		0.2(2.0)		0.45(4.5)		0.49(4.9)	0.65(6.5)	1.3(13)
Starting torque N·m(kgf·cm)		0.12(1.2)		0.24(2.4)		0.54(5.4)		0.63(6.3)	1.15(11.5)	1.8(18)
Rating rotation speed r/min		2,000						3,000		
Speed control range r/min		100~2,000						100~3,000	100~4,000	
Allowed inertia load moment of motor	J kg·m^2	0.5×10^{-4}		1.8×10^{-4}		5.8×10^{-4}		5.8×10^{-4}	8.75×10^{-4}	15×10^{-4}
Speed change rate	Load	less than or equal to ±1% (0~Rating torque, If rotating at the rated speed)								
	Voltage	less than or equal to ±1% (Power voltage ±10%, If rotation at the rated speed No load)								
	Temperature	less than or equal to ±1% (0~+40℃, If rotation at the rated speed No load)								

Common Specification

Items	Specifications
Rotation speed setting method	Controller panel's speed
Acceleration time/ deceleration time	0.5~10 seconds : 2000r/min no load (It may change depending on the load size). To set acceleration time, it is set at slow start on the front panel. To set deceleration time, it is set at slow stop.
Input signal	Photo coupler input method, operating at input resistance of 10kΩ DC 12V±10%,Common in EXT, CW, and CCW
Output signal	Open collector output, External use conditions: less than 26.4V 10mA, common in SPEED OUT/ALARM OUT
Protection function	If the following protection function is operating, then control unit alarm signal gets generated and motor stops automatically. ● Overload protection function : If more than the rated torque is applied to the motor for more than 5 seconds ● Overvoltage protection function : If voltage applied to the control unit goes over the upper bound of the rating voltage allowance ● Open phase protection : If cable sensor line gets disconnected during motor operation ● Undervoltage protection : If voltage applied to the control unit is less than the lower bound of the rating voltage allowance ● Over speed protection : If motor rotation speed is faster than 2500r/min
Motor insulation class	E Type(120℃)
Rated time	Continuous

Normal specifications

Items		Motor	Control unit
Insulation Resistance		After continuously operating at room temperature and humidity, it should begreater than 100㏁ between coil and case when measured with DC 500V MEGA TESTER	Protection ground terminal and power input should be greater than 100㏁ when measure with DC 500V MEGA TESTER
Dielectric Strength		After continuously operating at room temperature and humidity, there shouldn't be any problem if 60㎐, 1500V is applied for more than 1 minute between coil and case	There shouldn't be nay problem if 60㎐, 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℃ and less than 50℃ of temperature increase on the case surface when measure with thermo couple	
Used environment	Used Ambient temperature	0℃~+40℃ (There should not be any freeze)	
	Used Ambient Humidity	less than 85% (no dew condensation)	
	Ambient environment	No corrosive gas or dusts	
Conservation environment	Ambient temperature	-25 ~ +70℃ (There should not be any freeze)	
	Ambient Humidity	less than 85% (no dew condensation)	
Protection class		IP65(Except for the mounting part on the output part)	IP10

Delivery effciency of gearhead

Unit = N·m

	Deceleration ratio	5	10	15	20	30	50	100	200
Product name	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%							

Allowed torque of combination type

Unit = N·m

Product name	Deceleration ratio	5	10	15	20	30	50	100	200
	Speed control range[r/min]	20~400	10~200	6.7~133	5~100	3.3~67	2~40	1~20	0.5~10
K6BH20N■ + K6H□B		0.45	0.9	1.4	1.8	2.6	4.3	6	6
K8BH40N■ + K8H□B		0.9	1.8	2.7	3.6	5.2	8.6	16	16
K9BH90N■ + K9H□B		2	4.1	6.1	8.1	11.6	19.4	30	30
K6BH20N■ + K6H□BTH		0.4	0.85	1.3	1.7	2.6	4.3	8.5	17
K8BH40N■ + 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
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
K9BH150N■ + K9H□B		2.4	4.7	7.1	9.5	13.6	22.7	30	30
K9BH150N■ + K9H□BTH		2	4.1	6.2	8.3	12.4	20.8	41.6	68
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
K10BH200NC + K10H□BU	100~3000r/min	2.9	5.9	8.8	11.7	16.8	28	52.7	70
	4000r/min	2.0	4.1	6.1	8.1	11.6	19.4	36.5	63
K10BH400NC + K10H□BU	100~3000r/min	5.9	11.7	17.6	23.4	33.5	55.9	70	70
	4000r/min	4.3	8.6	12.8	17.1	24.5	40.9	63	63

* In dimension, in ■ of name represents power voltage U(single-phase 100~115V), and C(single-phase 200~230V)
* 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.

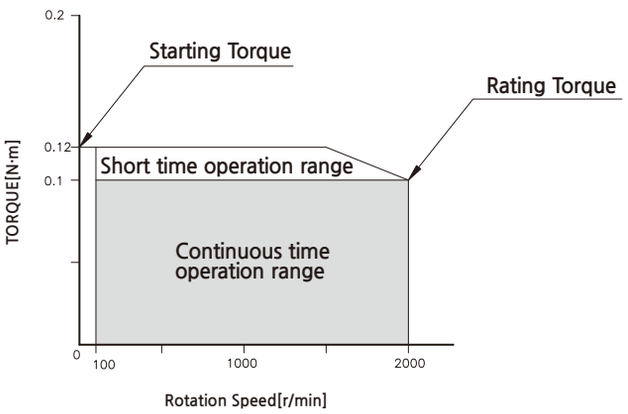
Allowed overhang load and allowed thrust

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
GEARED MOTOR	K6BH20N■ + K6H□B	5	100	10	150	15	40	4
		10,15,20	150	15	200	20		
		30,50,100,200	200	20	300	30		
	K8BH40N■ + K8H□B	5	200	20	250	25	100	10
		10,15,20	300	30	350	35		
		30,50,100,200	450	45	550	55		
	KPBH90N■ (K9BH150NC) + K9H□B	5	300	30	400	40	150	15
		10,15,20	400	40	500	50		
		30,50,100,200	500	50	650	65		
	K10BH200NC (K10BH400NC) + 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
	K6BH20N■ + K6H□BTH	5,10	450	45	370	37	200	20
		15~200	500	50	400	40		
	K8BH40N■ + K8H□BTH	5,10	800	80	660	66	400	40
		15~200	1200	120	1000	100		
	K9BH90N■ (K9BH150N■) + K9H□BTH	5,10	900	90	770	77	500	50
		15,20	1300	130	1110	111		
		30,50,100,200	1500	150	1280	128		
MOTOR	K6BS20N■		70	7	100	10	·Be careful not to weigh thrust. If it's inevitable, keep it under 50% of the motor weight.	
	K8BS40N■		120	12	140	14		
	K9BS90N■,K9BS150NC		160	16	170	17		
	K10BS200NC,K10BS400NC		197	19.7	220	22		

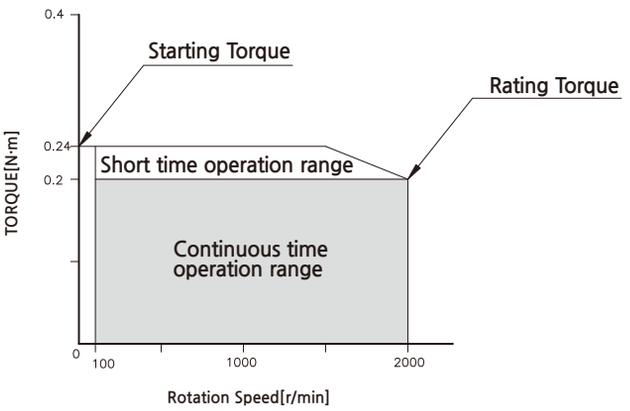
* In dimension, in ■ of name represents power voltage U(single-phase 100~115V),and C(single-phase 200~230V).
* In □ of name, it represents a deceleration ratio.
* Permissible overhang load can be withdrawn by calculation.

Rotation speed - torque characteristic

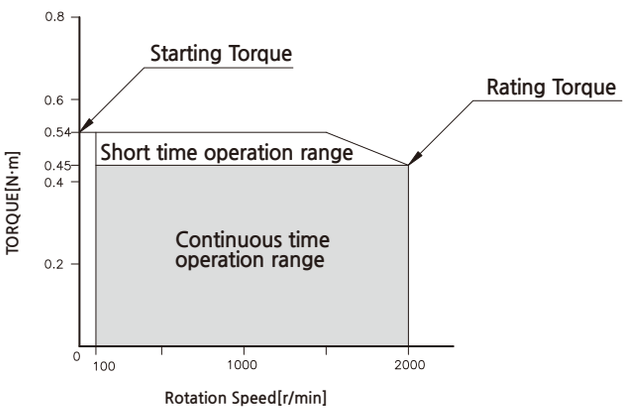
K6BS20N■ / K6BH20N■



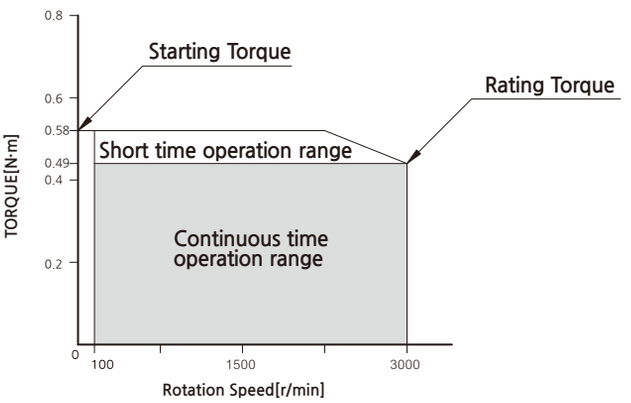
K8BS40N■ / K8BH40N■



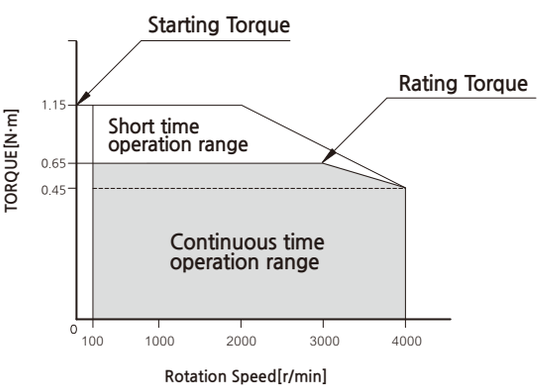
K9BS90N■ / K9BH90N■



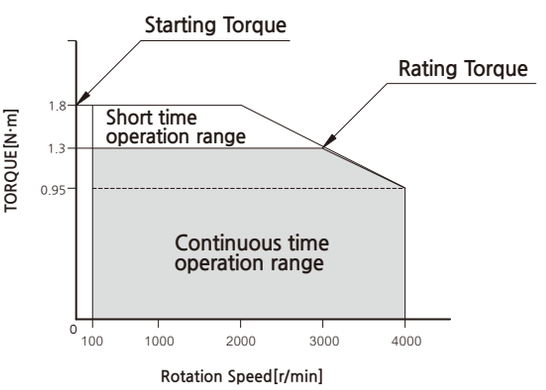
K9BS150NC / K9BH150NC



K10BS200NC



K10BS400NC



* In Dimension, in ■ of name represents power voltage U(single-phase 100~115V), C(single-phase 200~230V)