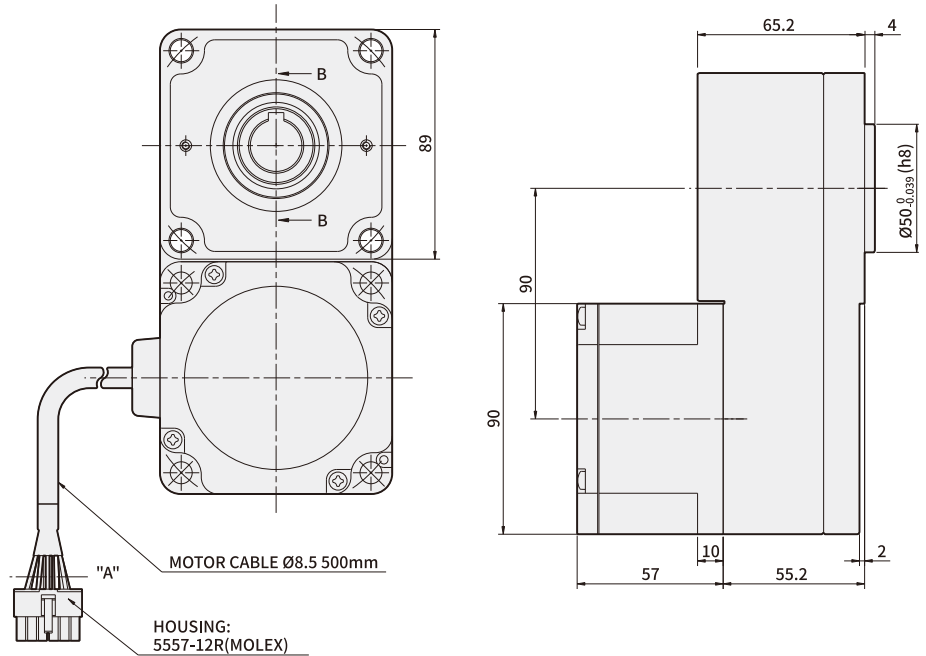


BRUSHLESS DC MOTOR UNIT - B Series

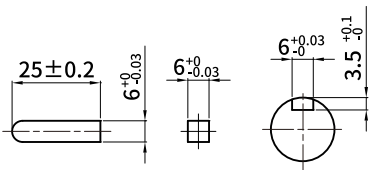
DIMENSIONS

K9BH200NC + K9H□BTH

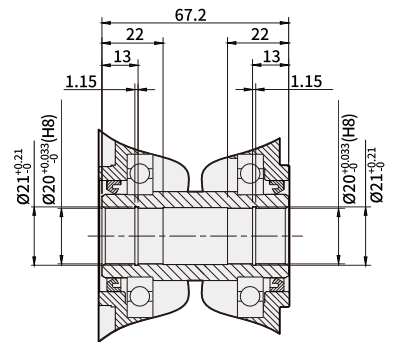
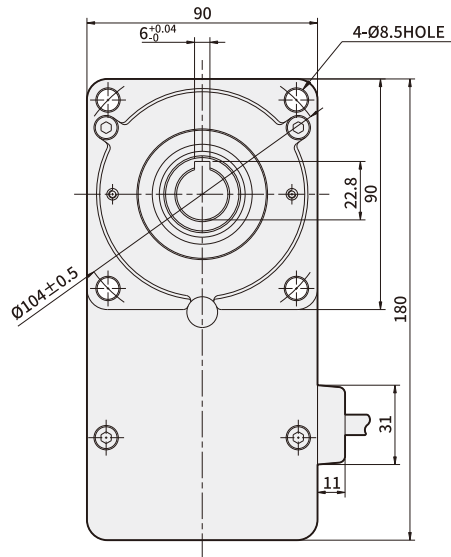
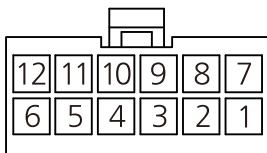
(Weight : 3.5Kg)



*** KEY · KEY GROOVE (ACCESSORY)**



*** CONNECTOR HOUSING (VIEW A)**



SECTION B-B

*** 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 |

| MOTOR PRODUCT NAME | GEARHEAD PRODUCT NAME | DECELERATION RATIO | FIXING BOLT |
|--------------------|-----------------------|--------------------|-------------|
| K9BH200NC | K9H□BTH | 5~200 | M8 P1.25×90 |

- * 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)

→ Specification

| Product name | Gear type | K6BH20NU | K6BH20NC | K8BH40NU | K8BH40NC | K9BH90NU | K9BH90NC | K9BH150NC | K9BH200NC | |
|-----------------------------------|-------------------------------------|--|----------|----------------------|----------|----------------------|----------|----------------------|----------------------|-----|
| | D-cut type | K6BS20NU | K6BS20NC | K8BS40NU | K8BS40NC | K9BS90NU | K9BS90NC | K9BS150NC | K9BS200NC | |
| Rating output (continuous) | W | 20 | | 40 | | 90 | | 150 | 200 | |
| Power input | Voltage | V | 100~115 | 200~230 | 100~115 | 200~230 | 100~115 | 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 | 2.5 |
| | Maximum input current | A | 1.55 | 0.9 | 2.5 | 1.4 | 3.9 | 2.4 | 4 | 4 |
| 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) | |
| Starting torque | N·m(kgf·cm) | 0.12(1.2) | | 0.24(2.4) | | 0.54(5.4) | | 0.63(6.3) | 0.81(8.1) | |
| Rating rotation speed | r/min | 2,000 | | | | | | 3,000 | | |
| Speed control range | r/min | 100~2,000 | | | | | | 100~3,000 | | |
| Motor allowed load inertia moment | J kg·m ² | 0.5×10 ⁻⁴ | | 1.8×10 ⁻⁴ | | 5.8×10 ⁻⁴ | | 5.8×10 ⁻⁴ | 6.0×10 ⁻⁴ | |
| | GD ² kgf·cm ² | 2 | | 7.2 | | 23.2 | | 23.2 | 24 | |
| 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. <ul style="list-style-type: none"> ● 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℃) |
| Maximum extension distance | The distance between motor-control unit is 10.5m (optional KBEW-10 extension cable is used) |
| Rated time | Continuous |

→ Normal specifications

| 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 measured 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 measured with thermo couple | |
| Used environment | Used Ambient temperature | 0°C~+40°C (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°C (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 |

→ Allowed torque of combination type

Unit = Upper part : N·m / lower part : kgf·cm

| Items | 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 4.5 | 0.9 9 | 1.4 14 | 1.8 18 | 2.6 26 | 4.3 43 | 6 60 | 6 60 | 6 60 |
| K8BH40N■ + K8H□B | 0.9 9 | 1.8 18 | 2.7 27 | 3.6 36 | 5.2 52 | 8.6 86 | 16 160 | 16 160 | 16 160 |
| K9BH90N■ + K9H□B | 2 20 | 4.1 41 | 6.1 61 | 8.1 81 | 11.6 116 | 19.4 194 | 30 300 | 30 300 | 30 300 |
| K9BH150NC + K9H□B | 2.4 24 | 4.7 47 | 7.1 71 | 9.5 95 | 13.6 136 | 22.7 227 | 30 300 | 30 300 | 30 300 |
| K9BH200NC + K9H□B | 3 30 | 6.1 61 | 9.1 91 | 12.2 122 | 17.5 175 | 29.2 292 | 30 300 | 30 300 | 30 300 |
| K6BH20N■ + K6H□BTH | 0.4 4 | 0.85 8.5 | 1.3 13 | 1.7 17 | 2.6 26 | 4.3 43 | 8.5 85 | 17 170 | 17 170 |
| K8BH40N■ + K8H□BTH | 0.85 8.5 | 1.7 17 | 2.6 26 | 3.4 34 | 5.1 51 | 8.5 85 | 17 170 | 34 340 | 34 340 |
| K9BH90N■ + K9H□BTH | 1.9 19 | 3.8 38 | 5.7 57 | 7.7 77 | 11.5 115 | 19.1 191 | 38.3 383 | 68 680 | 68 680 |
| K9BH150NC + K9H□BTH | 2.0 20 | 4.1 41 | 6.2 62 | 8.3 83 | 12.4 124 | 20.8 208 | 41.6 416 | 68 680 | 68 680 |
| K9BH200NC + K9H□BTH | 2.7 27 | 5.5 55 | 8.2 82 | 11 110 | 16.5 165 | 27.6 276 | 55.2 552 | 68 680 | 68 680 |

- * 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

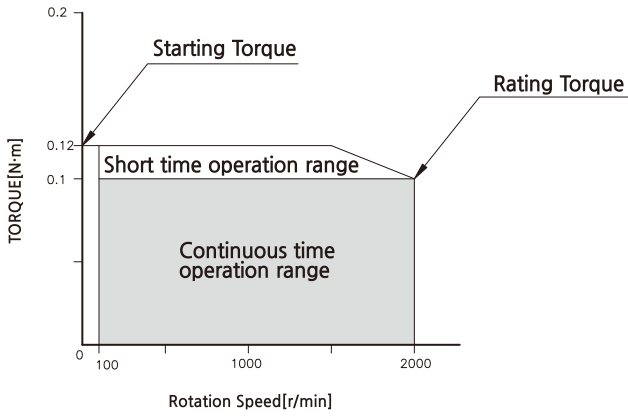
| Items | | Deceleration ratio | Allowed overhang load | | | | Allowed thrust load | |
|------------------------|------------------------|--------------------|----------------------------------|------|----------------------------------|-----|--|-----|
| | | | From the end of output part 10mm | | From the end of output part 20mm | | N | kgf |
| | | | N | kgf | N | kgf | | |
| GEARED MOTOR | K6BH20N■ + K6H□B | 5 | 100 | 10 | 150 | 15 | 40 | 4 |
| | | 10~20 | 150 | 15 | 200 | 20 | | |
| | | 30~200 | 200 | 20 | 300 | 30 | | |
| | K8BH40N■ + K8H□B | 5 | 200 | 20 | 250 | 25 | 100 | 10 |
| | | 10~20 | 300 | 30 | 350 | 35 | | |
| | | 30~200 | 450 | 45 | 550 | 55 | | |
| | K9BH90N■ + K9H□B | 5 | 300 | 30 | 400 | 40 | 150 | 15 |
| | | 10~20 | 400 | 40 | 500 | 50 | | |
| | | 30~200 | 500 | 50 | 650 | 65 | | |
| | K9BH150NC + K9H□B | 5 | 300 | 30 | 400 | 40 | 150 | 15 |
| | | 10~20 | 400 | 40 | 500 | 50 | | |
| | | 30~200 | 500 | 50 | 650 | 65 | | |
| | K9BH200NC + K9H□B | 5 | 300 | 30 | 400 | 40 | 150 | 15 |
| | | 10~20 | 400 | 40 | 500 | 50 | | |
| | | 30~200 | 500 | 50 | 650 | 65 | | |
| | 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■ + K9H□BTH | 5~10 | 900 | 90 | 770 | 77 | 500 | 50 |
| | | 15~20 | 1300 | 130 | 1110 | 111 | | |
| | | 30~200 | 1500 | 150 | 1280 | 128 | | |
| | K9BH150NC + K9H□BTH | 5~10 | 900 | 90 | 770 | 77 | 500 | 50 |
| | | 15~20 | 1300 | 130 | 1110 | 111 | | |
| 30~200 | | 1500 | 150 | 1280 | 128 | | | |
| K9BH200NC + K9H□BTH | 5~10 | 900 | 90 | 770 | 77 | 500 | 50 | |
| | 15~20 | 1300 | 130 | 1110 | 111 | | | |
| | 30~200 | 1500 | 150 | 1280 | 128 | | | |
| MOTOR | K6BS20N■ | | 70 | 7 | 100 | 10 | · Be careful not to take thrust load. If it's inevitable, keep it under 50% of the motor weight. | |
| | K8BS40N■ | | 120 | 12 | 140 | 14 | | |
| | K9BS90N■ | | 160 | 16 | 170 | 17 | | |
| | K9BS150NC | | 160 | 16 | 170 | 17 | | |
| | K9BS200NC | | 160 | 16 | 170 | 17 | | |

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

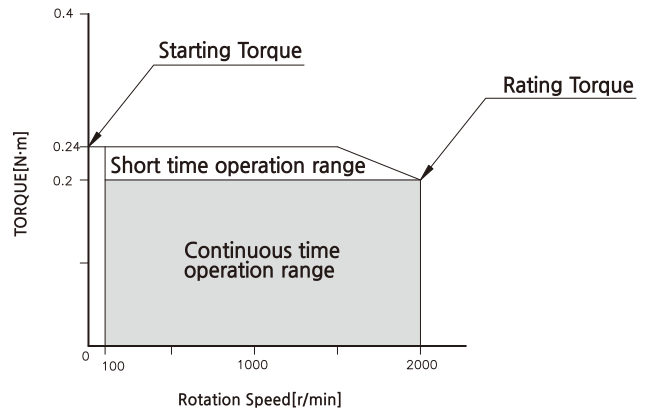
* In □ of name, it represents a deceleration ratio.

→ Rotation speed - torque characteristic

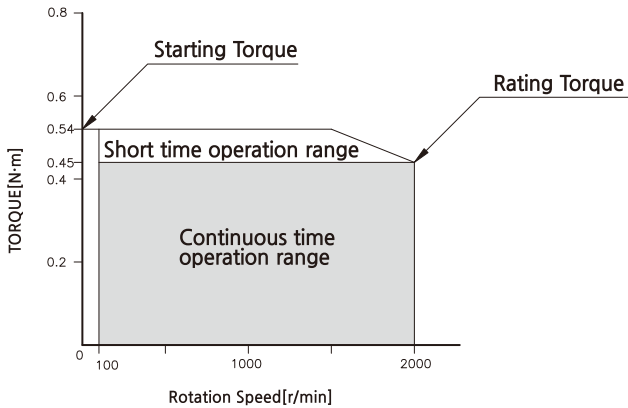
K6BS20N ■ / K6BH20N ■



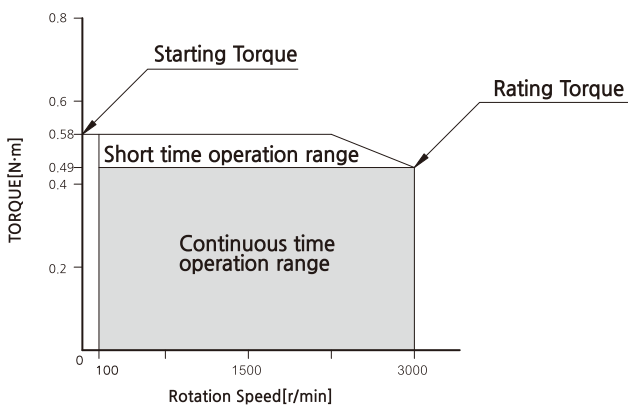
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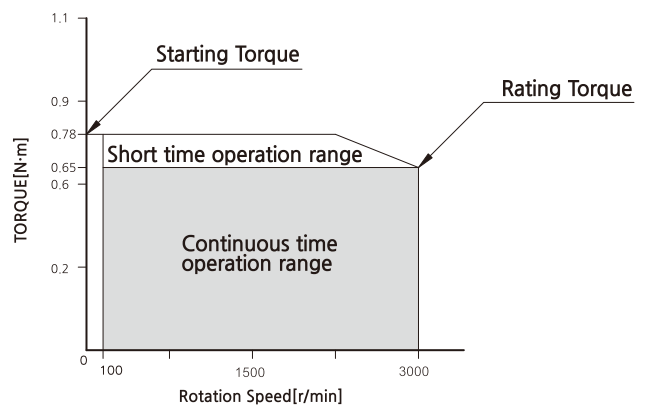
K9BS90N ■ / K9BH90N ■



K9BS150NC / K9BH150NC



K9BS200NC / K9BH200NC



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