

Thank you for purchasing the GGM products.  
**Before using this product, always read the manual and use correctly after understand all of product knowledge, safety information and precautions.** Please be sure to keep in fixed place to refer anytime.

### 1. Confirmation of product upon arrival

#### 1.1 Confirmation of product

Please make sure that all following parts are equipped.

If insufficient, or was damaged, please contact our Sales Department or representative.

- Motor..... 1 unit
- Manual(this booklet) .....1 copy
- condenser.....1 piece (only single phase motor)

#### 1.2 confirmation Names of product

If product arrived, please confirm combination between motor and condenser referring tablature certainly. Regarding name of motor, voltage, output, condenser capacity, please check seeing tablature mentioned item in tablature. In case of finding singularity, please contact to purchased shop.

### 2. Product Features

- It is structured that alternating current none-magnetization operation system electron BRAKE is connected directly on rear of MOTOR, it keeps load while MOTOR stops at the moment at the same time Power Off. When power is OFF, MOTOR stops and keeps load that is suitable where needs urgently safety BRAKE function(When POWER OFF). In case of singularity was found, please contact to purchased shop.
- Electron BRAKE MOTOR does OVER RUN 1~4 rotation in occasion of motor unit no-load at power OFF.
- It is available to change positive rotation and reverse rotation in a moment frequently and possible to stop 6 times per minutes by simple changing
- MOTOR and BRAKE can use by equal AC power.  
 (Having rectifier circuit in BRAKE region that use AC power same as motor.)

### 3. Caution on use

#### 3.1 Precautions on installation

- Do not use near in explosive, surrounding of flammable gas, corrosive material, place that water bounds, supporter of combustion.
- Do not bend, or pull, or insert lead wire hardly..
- If motor installed on the devices, please avoid touching your hands or ground.
- please install by expert

#### 3.2 Caution on operation

- Motor in ordinarily running condition, there is in case of surface temperature exceeds 70°C.
- In case of do examination and other work Of motor that it attached thermal protector (THERMAL PROTECTOR), please turn off power in the advance certainly. The motor installed THERMAL PROTECTOR restarts automatically if temperature goes down lower than constant level.
- electromagnetic brake does not fix load certainly.  
 Also, when THERMAL PROTECTOR operated, load is not kept.
- Prepare safety net separately in case of use by safety brake..

### 4. About burnout protection at restraint

This motor has burnout protection function at 'restraint'. There are following 2 ways for protection .

#### • Thermal protector method (there is record as **THERMALLY PROTECTED<sub>1</sub>** on plate)

If becomes fixed temperature, built-in thermal protector operates to stop Motor.

This time, electromagentic brake is open state that load can not keep. Please set special safety net.

it is automatic return system that restarts operation automatically if temperature of motor goes down. Execute checking work after turn off power certainly .

Thermal protector action temperature

OPEN(Power interception) ..... 130°C ± 5°C

CLOSE(Power connection) ..... 82°C ± 15°C

#### • Impedance protector method (Was recorded **IMPEDANCE PROTECTED<sub>1</sub>** on tablature.)

Winding impedance increases at restraint by abnormal state that controls input to motor so that motor winding was designed not burnout.

### 5. About Time Ratings

- For INDUCTION MOTOR, continuous operation is available. (DUTY : CONT. It was recorded on motor tablature.)
- REVERSIBLE MOTOR is 30 minutes of continuous operation possibility time. (DUTY : 30 MINs. was recorded on motor tablature.)

### 6. Product Installation

#### 6.1 Installation Conditions

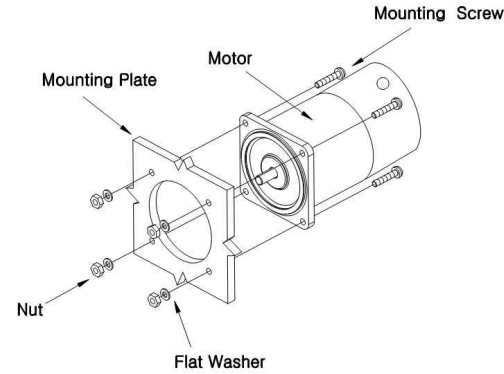
Please install motors, capacitors in place of with the following conditions. If use in where is not in this range, product can be damaged.

- Indoor (This product is designed for installationby on device.)
- where is the place ambient temperature is -10°C ~+ 40°C (that do not freeze) (Only, it is -10°C ~+ 50°C when operation by 100V/200V )
- where is below surroundings humidity 85% ( where dew is not tied)
- where do not suffer impact by fire gas, flammable gas, corrosive gas

- Where do not receive direct ray of light
- places where dust does not pile and water, oil and so on do not bound
- where is heat emitting well
- where do not receive continued shock, excessive impact
- where is below 1,000m od sea level

#### 6.2 Installation of the motor

##### Straight Shaft Type



Do not insert obliquely, or do not install perforce motor on install hole.

There may occur scar in flange padding, and motor can be damaged.

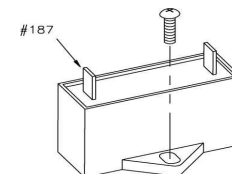
Please bore to mounting plate and use screw, nut, washer and fix motor to mounting plate. (Screw for install has not attached.) This time, please take care not to occur gap between motor mounting surface and mounting plate.

##### ■ Install Screw

Front character of motor names of product	Screw size	Fasten Torque
K6	M4	2.0N-m(20kgf-cm)
K7	M5	2.5N-m(25kgf-cm)
K8	M5	2.5N-m(25kgf-cm)
K9	M6	3.0N-m(30kgf-cm)

#### 3) Motor attached Cooling fan

In case of install motor with cooling fan to device, please make space more than 10mm back of ventilator cover or bore ventilating hole so that cooling intake of motor back is not blocked.



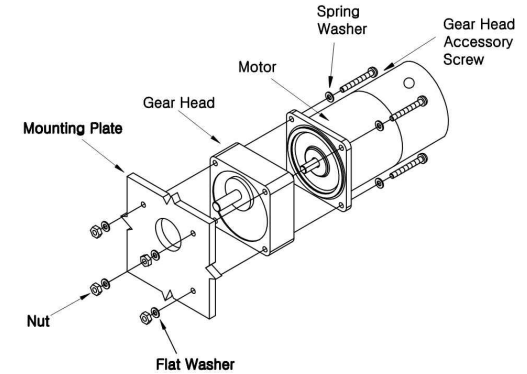
Please install capacitance after confirm whether attached condenser capacity fits with capacity recorded on motor tablature.

Use M4 screw for install condenser. (Screw for establishment did not attached.)

Attention).

- Set fastening torque screw for condenser install less than 1N-m(10kgf-cm) to prevent damage of install angle
- Please separate more than 10cm from motor. Otherwise, condenser Life-time is shorten by heat of motor.
- Motor lead wire and power connection part, condenser terminal connection part (#187) should be insulated.

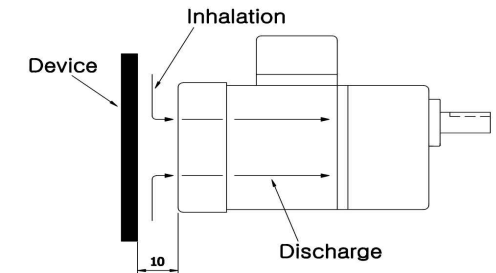
##### Pinion Shaft Type



Bore hole on mounting plate, please fix motor and gear head on install surface using 4 gear head attachment screws

This time, please take carenot to occur space between motor flange surface and gear head insert section.About detailed contents for install, please refer to gear head operating instruction that is optional.

Attention) Use gear head as toothed wheel(GEAR) shaft type that is same with motor.



## 7. Connection and Operation

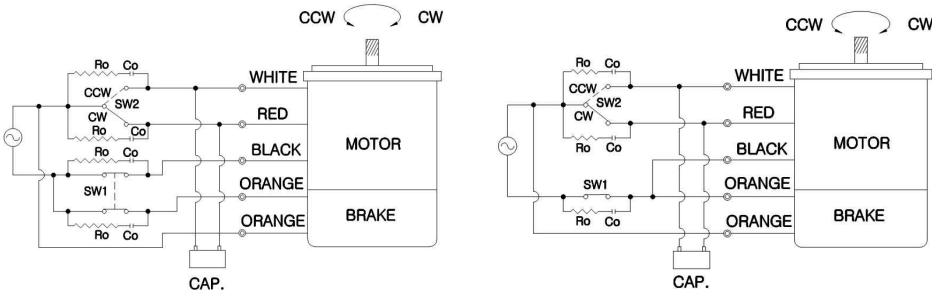
### 7.1 Connection

- Motor lead wire and power connection part, condenser terminal connection part should be insulated.

Direction of rotation is to see in motor output axis side. CW means clockwise, CCW means opposite direction of watch.

Single-phase motor connection wiring diagram

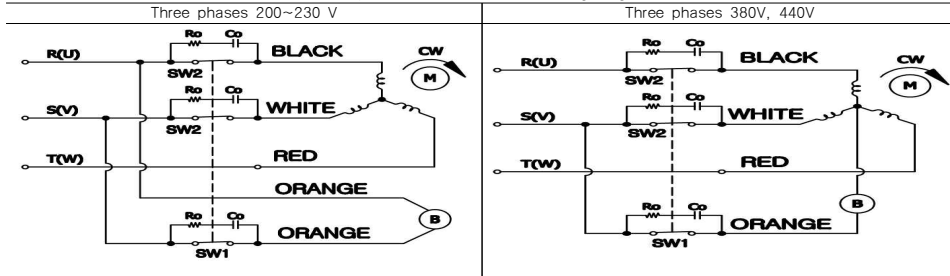
Simplified single-phase motor connection



When want to control operation/stop of motor and operation/stop of brake by one switch, can simplify connection with left picture. Only, in this case, compared with basis connection wiring diagram, overrun is increases so much prolonged braking time that is about 50 msecs.

This means that even if SW1 was OFF, Magnetic energy of motor acts on magnet winding and electromagnet continuously act during About 50 msecs. that delayed braking action.

Three phases motor connection wiring diagram



Attention ) In case of top and bottom operation and three phases motor can not simplify wiring connection.

[6W~40W type]

Switch number	Point of contact capacity of switch			Note
	Single Phase 100V/110V/115V input	Single Phase 200V/220V/230V input	three phases 200V/220V/230V input	
SW1	Over AC125V	Over AC250V	Over AC250 1.5A	interact
SW2	3A	1.5A	-	-

Please connect CR circuit for Serge voltage absorption with connection wiring diagram for point of contact protection.

[60W, 200W type]

Switch number	Point of contact capacity of switch			Note
	Single Phase 100V/110V/115V input	Single Phase 200V/220V/230V input	three phases 200V/220V/230V input	
SW1	Over AC125V	Over AC250V	Over AC250 5A	interact
SW2	5A	5A	-	-

Ro=5~200Ω

Co=0.1~0.2μF 200WV

Our company is preparing by option.

### 7.2 Operation

Attention) •Confirm motor case whether temperature exceeds over 90°C while operation. if operate motor at temperature exceeded 90°C, winding and ball bearing are degraded remarkably and life-time is shoten.

Temperature of motor case can measure fixing thermometer on the motor surface.

Also, can measure using thermo-tape or thermocouples.

- For single-phase, please connect capacitance ordinary times after motor starting using attached capacitance.

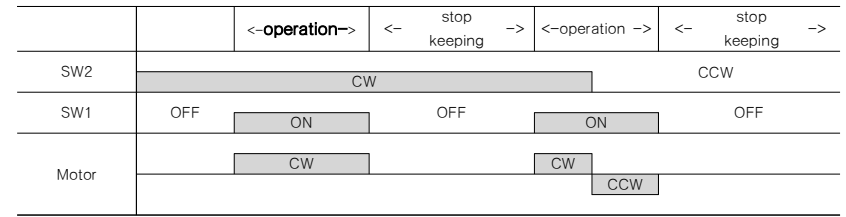
#### ■ Operation / Stop

SW1 controls for motor operation/stop and electromagnetic brake. (Interlock)

If trun SW1 ON, motor rotates by cancellation of electromagnetic brake. If turn SW1 OFF, motor stops by operation of electromagnetic brake. Attention )If electromagnetic brake operates, there is occasion that frictional sound sounds, but it is normal because brake is attrition way.

### Timing chart example of SW1 and SW2

This timing Chateuye is come in case of it is a basis connection wiring diagram.



#### ■ Replacing of direction of rotation

[single-phase motor] Rotates to clockwise if drop SW2 toward CW, and rotates Counter Clock Wise if drop toward CCW.  
[three phases motor] Rotates toward clockwise if connect as like connection wiring diagram. And rotates to anticlockwise if change 2 lines among U, V, W.

#### ■ Other control method

Attention ) in case of use in top and bottom drive, load can descend that control after confirm situation of load.

- How to speed up the startup of the motor

If open electro-magnetic brake beforehand, can start motor fast.

Timing to open electromagnetic brake, please open before operation of motor at least 10 msecs.

- Method to open electromagnetic brake at stop of motor

If pass power between lead wire (Orange color) for 2 electron brakes, electromagnetic brake is released, motor shaft can turn freely.

## 8. Checking points in case of not working normally

In case of motor not working normally, please refer to table below. In case of motor does not work normally despite all is normal according to checking result, do not repair disassemble and modification, please contact our Sales Department or representative.

SYMPTOMS	Confirmation
The motor does not rotate or rotates slowly	① Is there supplied regular voltage to the motor? ② Is connection linked with power correct? ③ The load is too big is not it? ④ In case of is extending using terminal block or crimp-type terminal, is there any connection badness? ⑤ In case of single-phase motor, are attachment condenser or condenser of capacity had recorded in tablature joined according to connection wiring diagram? ⑥ Is normal mode voltage approved to lead wire (Orange color) for electron brake?
The motor repeats rotate/stop	① Is power connected correctly? ② In case of using terminal block or crimp-type terminal, is there any connection badness? ③ In case of single-phase motor, are attachment condenser or condenser of capacity had recorded in tablature joined according to connection wiring diagram?
Rotates to reverse	① Did you join differently with connection wiring diagram? Check connection wiring diagram again. ② According to deceleration ratio of gear head, changes direction of rotation of gear head output axis. Please refer to manual of gear head.. ③ In case of single-phase motor, are attachment condenser or condenser of capacity had recorded in tablature joined according to connection wiring diagram? ④ Is seeing direction correct? When see at motor output axis side, can understand direction of rotation is clockwise or anticlockwise.
The motor is too hot (motor case temperature has exceeded 90 °C.)	① Is rated voltage approved to motor? ② Does it not exceed the ambient temperature extent upper limit? ③ In case of single-phase motor, are attachment condenser or condenser of capacity had recorded in tablature joined according to connection wiring diagram?
There is strange noises	① Did you attach motor and gear head correctly? Please refer to manual of gear head. ② Are you installing 치질 shaft type reducer same as motor?

※ Contact to buying agency or our 2nd factory for product inquiries and A/S

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