

# Chapter 2

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## Installation

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## Chapter2 Installation

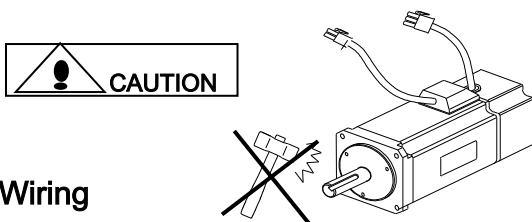
### 2.1 Servo Motor

#### 2.1.1 Operating Environment

Item	Environment	Remark
Temp.	0~40[°C]	In case of out of temp-range, inquire to Technical department and order separately
Humidity	Less than 80[%]RH	There should be no steam
External Vibration	Vibrating Acceleration X, Y direction less 19.6[m/s <sup>2</sup> ]	Excessive vibration might cause shortening of bearing lifetime

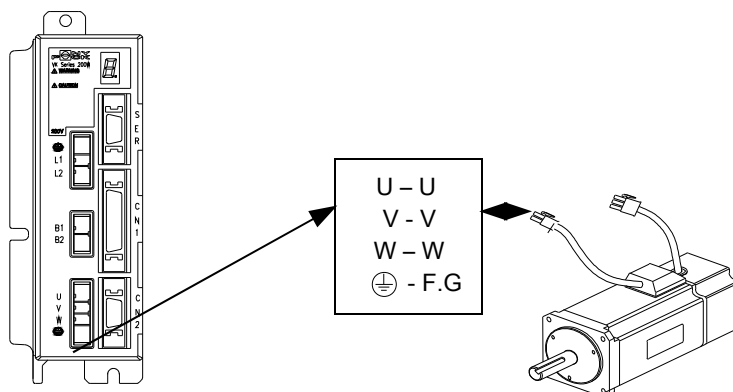
#### 2.1.2 Preventing Excessive Impact

- Impacting the shaft when installation or dropping the motor might cause the damage of encoder.



#### 2.1.3 Wiring

- Connecting commercial power supply directly to motor would cause damage of motor. So, the User should certainly connect to designated drive.
- Ground terminal of motor should be connected to one of ground terminals (two) in drive and another terminal should be connected to 3 class earth ground.

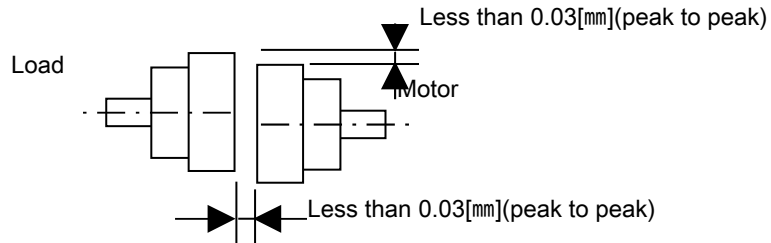


- Match the U, V and W terminals of the motor with those of the driver
- Check if there are out of placed pin or fault of connection
- In case of moisture or condensation on motor, Surely check if the insulation resistance is

more than 10[MΩ] and (500V), and then installation.

### 2.1.4 Assembling Load System

- Coupling assembling : Install motor shaft accurately match with load shaft within tolerance range.

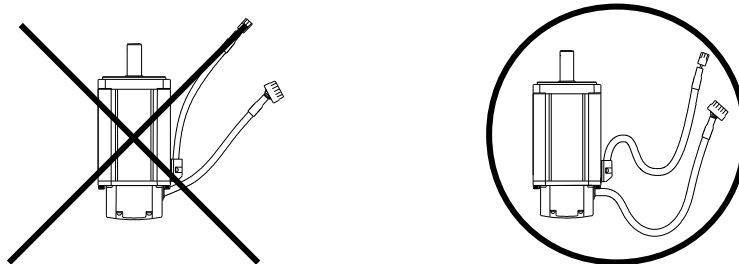


- Pulley assembling ::

Flange	Radial load		Axial load		Remarks
	N	kgf	N	kgf	
40	148	15	39	4	Less than 30[mm] than 30[mm] Radial load Axial load 
60	206	21	69	7	
80	255	26	98	10	

### 2.1.5 Cable Installation

- In case of vertical Installation, care about oil or water that can be flowed into joint





- Prevent Cable from the stress or flaw

Especially, while motor is moving, surely use the movable cable and cable should not be rolled.

## Chapter2 Installation

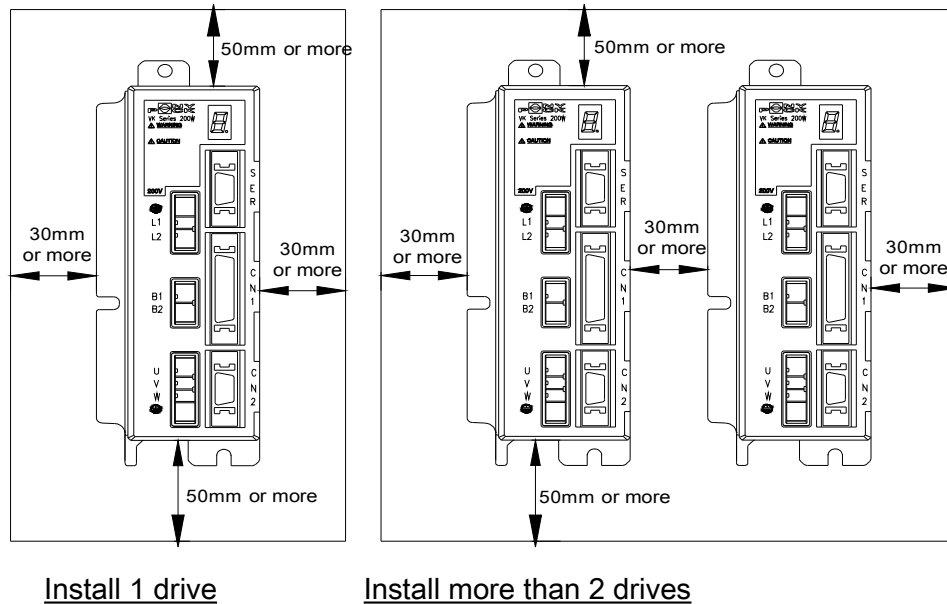
### 2.2 Servo Drive

#### 2.2.1 Operating Environment

Items	Operating environment	Remarkable
Temp.	0~50[°C]	 Avoid heat by installing fans in order to keep the proper ambient temperature.
Humidity	Less than 90[%]RH	 Stopping for long time, the drive can be damaged by condensation or moisture. Therefore, operate it after removing the moisture of drive sufficiently.
External Vibration	Vibration Acceleration Less than 5.9[m/s <sup>2</sup> ]	Excessive vibration might cause shortening Durability and malfunction.
Environment	<ul style="list-style-type: none"> <li>- Avoid direct sunlight</li> <li>- Avoid corrosive and flammable gas.</li> <li>- Avoid oil mist or dust.</li> <li>- Keep ventilation on closed place.</li> </ul>	

### 2.2.2 Installing in a Control Board(Panel)

- Installation space is as below.



Note1) Install heat sources, such as regenerative resistance should be installed away from the driver




- A sticker is attached to the top of our servo drive to prevent an alien substance getting into drive such as metal chips. Surely remove this sticker after Installing it in a Control Board. Otherwise malfunction may be caused by overheat-temperature of drive.
- Exercise caution to prevent chips produced by drilling from getting into the drive when drilling control panels.
- Take appropriate measures to prevent oils, water and metal powder from getting into the driver from openings in the control panels.
- If the drive is used in a place with large amount of toxic gases and dust, protect the drive with and air purge.

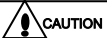
## Chapter2 Installation

### 2.2.3 Wiring


- Check the input power voltage, and keep it within range

 Drive may be damaged when over voltage is supplied.

- Connecting commercial power supply to the U,V,W terminals of drive may cause damage.  
( Certainly connect power supply to L1, L2, L3 terminals )
- Certainly use the standard resistance value for regenerative resistance that is to be connected to B1, B2 terminals of drive.

Model	Resistance	Standard Capacity	*Remarks
VK04~VK08	50[Ω]	External 30[W]	 When expanding regenerative capacity, the resistance value should be referred to “7.3 Option and peripherals”

- “High voltage” still remains for a while even after power is turned off.

 To prevent electric shock, carry out wiring work after 7 Segment lamp is turned off completely

- Ground the terminals at the shortest distance  
Long ground distance can lead to malfunction by noise effect.