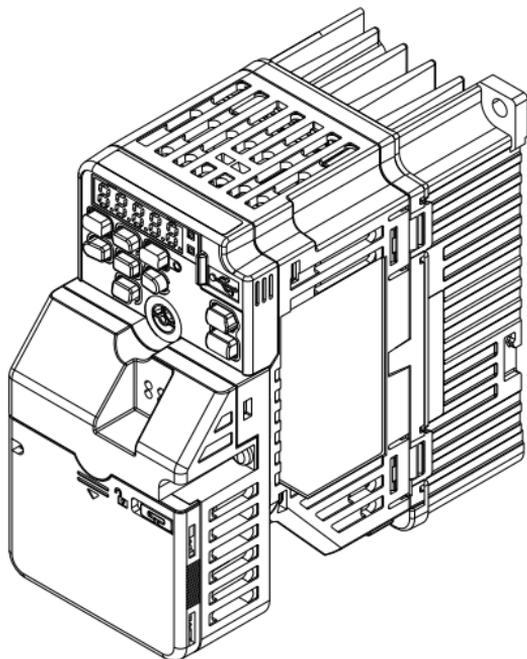


## YASKAWA AC Drive Option Option Card Mounting Kit Installation Manual

Model JOHB-GA50

To properly use the product, read this manual thoroughly and retain for easy reference, inspection, and maintenance. Ensure the end user receives this manual.



---

**This Page Intentionally Blank**

# Table of Contents

---

1.	Receiving .....	5
	Applicable Documentation .....	5
	Glossary .....	5
2.	General Safety .....	6
	Supplemental Safety Information .....	6
	Section Safety .....	6
3.	Overview .....	7
	Compatible Products .....	8
	For Yaskawa Customers in the North or South America Regions .....	8
	Installation Environment .....	9
4.	Receiving .....	10
	Option Package Contents .....	11
	Necessary Tools .....	11
5.	Installation Procedure .....	11
	Option Dimensions .....	12
	Installation Methods .....	12
	Install the Option Card Mounting Kit (Procedure A) .....	12
	Install the Option Card Mounting Kit (Procedure B) .....	21

---

Revision History .....	32
------------------------	----

# 1 Receiving

## ◆ Applicable Documentation

Document	Description
YASKAWA AC Drive Option Option Card Mounting Kit Installation Manual	Read this manual before you install this option to the drive. This manual gives information about how to install an option card mounting kit.
YASKAWA AC Drive Option Installation Manual	Read this manual before you install this option to the drive. The manual provides information about wiring, setting, functions, and troubleshooting. The manual is packaged together with the product.
YASKAWA AC Drive Manuals	For information about drive settings, refer to the manuals for the drive with which you are using this option. The manuals provide information about basic installation, wiring, operation procedures, functions, troubleshooting, and maintenance. The manuals also include important information about parameter settings and tuning the drive. You can download drive manuals from the Yaskawa product and technical information website shown on the back cover of this manual.

## ◆ Glossary

Terminology Used in this Document	Description
Drive	YASKAWA AC Drive GA500
Case, Option	YASKAWA AC Drive Option Option Card Mounting Kit

## 2 General Safety

### ◆ Supplemental Safety Information

**▲ DANGER** This signal word identifies a hazard that will cause serious injury or death if you do not prevent it.

**▲ WARNING** This signal word identifies a hazard that can cause death or serious injuries if you do not prevent it.

**▲ CAUTION** This signal word identifies a hazardous situation, which, if not avoided, can cause minor or moderate injury.

**NOTICE** This signal word identifies a property damage message that is not related to personal injury.

### ◆ Section Safety

#### General Precautions

- Some figures in the instructions include options and drives without covers or safety shields to more clearly show the inside of the drive. Replace covers and shields before operation. Use options and drives only as specified by the instructions.
- The figures in this manual are examples only. All figures do not apply to all products included in this manual.
- Yaskawa can change the products, specifications, and content of the instructions without notice to make the product and/or the instructions better.
- If you damage or lose these instructions, contact a Yaskawa representative or the nearest Yaskawa sales office on the rear cover of the manual, and tell them the document number on the front cover to order new copies.

**▲ DANGER** *Electrical Shock Hazard. Do not examine, connect, or disconnect wiring on an energized drive. Before servicing, disconnect all power to the equipment and wait for the time specified on the warning label at a minimum. The internal capacitor stays charged after the drive is de-energized. The charge indicator LED extinguishes when the DC bus voltage decreases below 50 Vdc. When all indicators are OFF, measure for dangerous voltages to make sure that the drive is safe. If you do work on the drive when it is energized, it will cause serious injury or death from electrical shock.*

**⚠ CAUTION** *Burn Hazard. Do not touch a hot drive heatsink. De-energize the drive, wait for a minimum of 15 minutes, then make sure that the heatsink is cool before you replace the cooling fans. If you touch a hot drive heatsink, it can burn you.*

**⚠ WARNING** *Electrical Shock Hazard. Only let approved personnel install, wire, maintain, examine, replace parts, and repair the drive. If personnel are not approved, it can cause serious injury or death.*

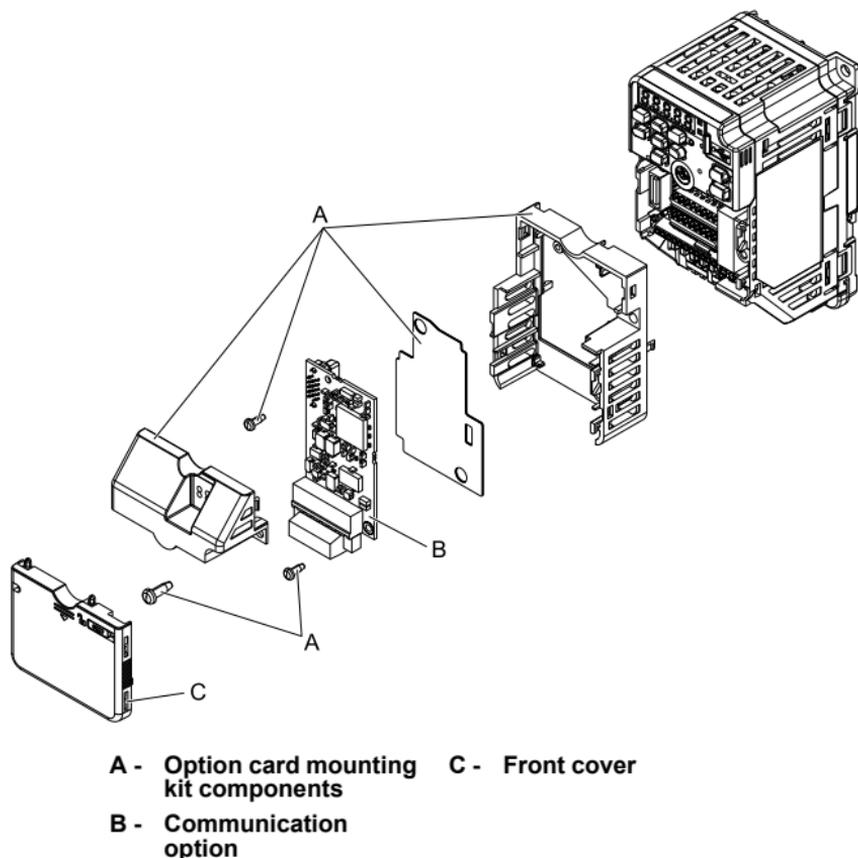
**⚠ WARNING** *Sudden Movement Hazard. Tighten the screws to the specified tightening torque. Incorrect tightening torques can cause damage to equipment and cause serious injury or death from falling equipment.*

**NOTICE** *Damage to Equipment. When you touch the drive and circuit boards, make sure that you observe correct electrostatic discharge (ESD) procedures. If you do not follow procedures, it can cause ESD damage to the drive circuitry.*

### 3 Overview

Use this option to install a communication option to a drive.

You can use this option when the installation environment of the drive meets the specifications shown in *Installation Environment on page 9*.



**Figure 3.1 Option Card Mounting Kit**

---

#### ◆ **Compatible Products**

This installation kit is compatible with these drives:

- GA500

#### ■ **For Yaskawa Customers in the North or South America Regions**

If your drive series is not shown in the “Compatible Products” section, refer to the web page below to confirm that your drive is compatible with this option. The web page shows a list of drives

and compatible options, and also directs you to the correct installation manual and installation procedure for your drive.

Refer to the URL or scan QR code:



<https://www.yaskawa.com/products/option-lookup>

## ◆ Installation Environment

The installation environment is important for the lifespan of the product and to make sure that the drive performance is correct. Make sure that the installation environment agrees with these specifications.

Environment	Conditions
Area of Use	Indoors
Power Supply	Overvoltage Category III (IEC60664)
Ambient Temperature Setting	IP20/UL Open Type: -10 °C to +50 °C (14 °F to 122 °F) IP20/UL Type 1: -10 °C to +40 °C (14 °F to 104 °F) <ul style="list-style-type: none"> <li>• When you install the drive in an enclosure, use a cooling fan or air conditioner to keep the internal air temperature in the permitted range.</li> <li>• Do not let the drive freeze.</li> </ul>
Humidity	95%RH or less Do not let condensation form on the drive.
Storage Temperature	-20 °C to +70 °C (-4 °F to +158 °F) (short-term temperature during transportation)
Surrounding Area	Pollution degree 2 or less (IEC 60664-1) Install the drive in an area without: <ul style="list-style-type: none"> <li>• Oil mist, corrosive or flammable gas, or dust</li> </ul>

## 4 Receiving

Environment	Conditions
	<ul style="list-style-type: none"><li>• Metal powder, oil, water, or other unwanted materials</li><li>• Radioactive or flammable materials.</li><li>• Harmful gas or fluids</li><li>• Salt</li><li>• Direct sunlight</li></ul> Keep wood and other flammable materials away from the drive.
Altitude	1000 m (3281 ft) Maximum <b>Note:</b> Derate the output current by 1% for each 100 m (328 ft) to install the drive in altitudes between 1000 m to 4000 m (3281 ft to 13123 ft). It is not necessary to derate the rated voltage in these conditions: <ul style="list-style-type: none"><li>• Installing the drive at 2000 m (6562 ft) or lower</li><li>• Installing the drive between 2000 m to 4000 m (6562 ft to 13123 ft) and grounding the neutral point on the power supply. Contact Yaskawa or your nearest sales representative when not grounding the neutral point.</li></ul>
Vibration	<ul style="list-style-type: none"><li>• 10 Hz to 20 Hz: 1 G (9.8 m/s<sup>2</sup>, 32.15 ft/s<sup>2</sup>)</li><li>• 20 Hz to 55 Hz: 0.6 G (5.9 m/s<sup>2</sup>, 19.36 ft/s<sup>2</sup>)</li></ul>
Installation Orientation	Install the drive vertically or horizontally for sufficient airflow to cool the drive. Refer to the drive Technical Manual for more information.

**NOTICE** Do not put drive peripheral devices, transformers, or other electronics near the drive. Shield the drive from electrical interference if components must be near the drive. Components near the drive can cause incorrect drive operation from electrical interference.

**NOTICE** Do not let unwanted objects, for example metal shavings or wire clippings, fall into the drive during drive installation. Put a temporary cover over the drive during installation. Remove the temporary cover before start-up. Unwanted objects inside of the drive can cause damage to the drive.

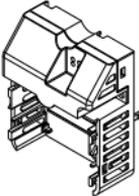
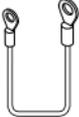
## 4 Receiving

1. Examine the products for damage.

If there is damage to the products, contact the shipping company immediately. The Yaskawa warranty does not include damage from shipping.

- Verify the product model number to make sure that you received the correct model.  
If you have problems with the products, contact the distributor where you purchased the products or the Yaskawa sales office immediately.

## ◆ Option Package Contents

Option Card Mounting Case	Ground Wire	Mounting Screw	Insulator
 <p>#1</p>	 <p>#4</p>	 <p>A B</p> <p>A - 3 × 8 tapping screw: #2 B - 4 × 12 tapping screw: #1</p>	 <p>#1</p>

### Note:

- Use the LED label packaged with the communication option.
- The ground wires and screws included with the communication option are not necessary.

## ◆ Necessary Tools

To install the attachment, use a Phillips screwdriver #2.

## 5 Installation Procedure

**⚠ CAUTION** *Crush Hazard. Tighten terminal cover screws and hold the case safely when you move the drive. If the drive or covers fall, it can cause moderate injury.*

## ◆ Option Dimensions

The installed option adds 27 mm (1.06 in) to the total depth of the drive.

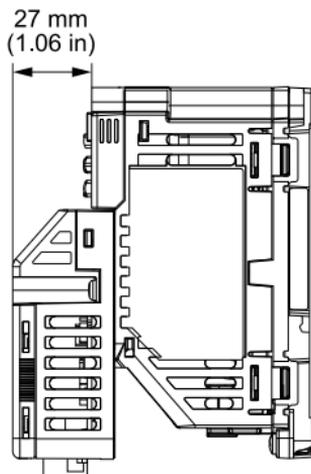


Figure 5.1 Option Dimensions

## ◆ Installation Methods

The installation procedure is different for different drive protection designs.

Table 5.1 Installation Methods

Type	Procedure	Reference
IP20/UL Open Type	Procedure A	12
IP20/UL Type 1 <sup>*1</sup>	Procedure B	21

\*1 If you install the option on an IP20/UL Type 1 enclosure, it will void the UL Type 1 protection and keep IP20 conformity.

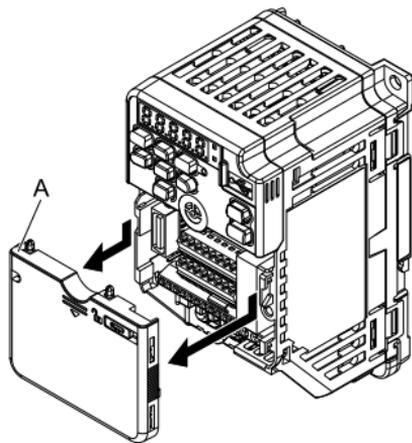
## ◆ Install the Option Card Mounting Kit (Procedure A)

De-energize the drive before you start the procedure.

**⚠ DANGER** *Electrical Shock Hazard. Do not examine, connect, or disconnect wiring on an energized drive. Before servicing, disconnect all power to the equipment and wait for the time specified on the warning label at a minimum. The internal capacitor stays charged after the drive is de-energized. The charge indicator LED extinguishes when the DC bus voltage decreases below 50 Vdc. When all indicators are OFF, measure for dangerous voltages to make sure that the drive is safe. If you do work on the drive when it is energized, it will cause serious injury or death from electrical shock.*

1. Unlock the front cover to remove it from the drive.

**NOTICE** *Damage to Equipment. When you touch the option, make sure that you observe correct electrostatic discharge (ESD) procedures. If you do not follow procedures, it can cause ESD damage to the drive circuitry.*



**A - Front cover**

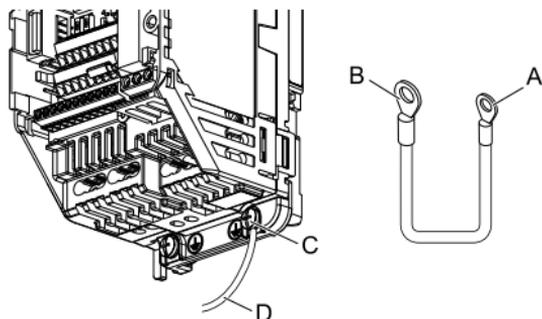
### Figure 5.2 Remove the Front Cover

2. Connect the ground wire to the drive ground terminal.  
Connect the drive side of the ground wire to the drive ground terminal.

**Note:**

The option package has four different ground wires. The length and the terminal size on the drive side of the ground wire are different for different drives. Use the correct ground wire for your drive.

Refer to [Table 5.2](#) for ground wire selection.



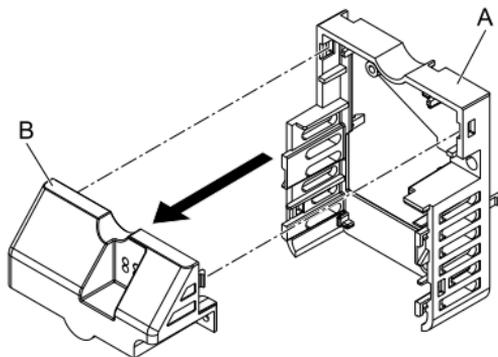
- A - Communication option side of the ground wire  
 B - Drive side of the ground wire  
 C - Ground terminal  
 D - Ground wire

Figure 5.3 Ground wire

Table 5.2 Ground Wire Length

Drive Model			Length mm
Single-Phase 200 V Class	Three-Phase 200 V Class	Three-Phase 400 V Class	
-	-	-	150
B001, B002, B004, B006, B010, B012, B018	2001, 2002, 2004, 2006, 2008, 2010, 2012, 2018, 2021	4001, 4002, 4004, 4005, 4007, 4009, 4012	200
-	2030, 2042	4018, 4023	250
-	2056, 2070, 2082	4031, 4038, 4044, 4060	400

3. Remove the option cover from the base.



A - Base

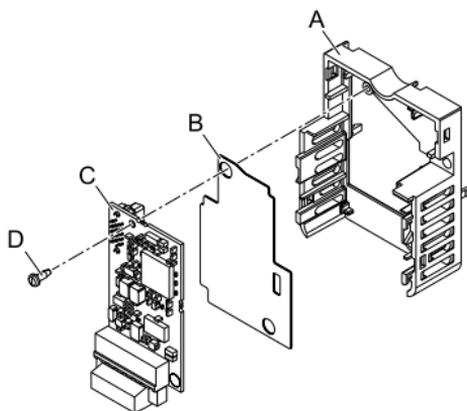
B - Option cover

**Figure 5.4 Remove the Option Cover**

4. Install a communication option and the insulator to the base.

Tighten the screw to a correct tightening torque:

- 3 × 8 tapping screw: 0.49 N·m to 0.73 N·m (4.34 in·lb to 6.46 in·lb)



**A - Base**

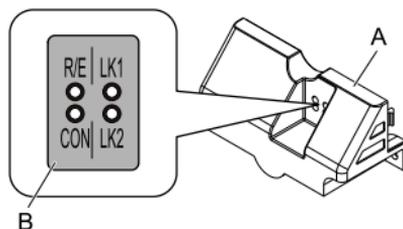
**B - Insulator**

**C - Communication option**

**D - 3 × 8 tapping screw**

**Figure 5.5 Install the Communication Option**

- Put the communication option LED label on the option cover.

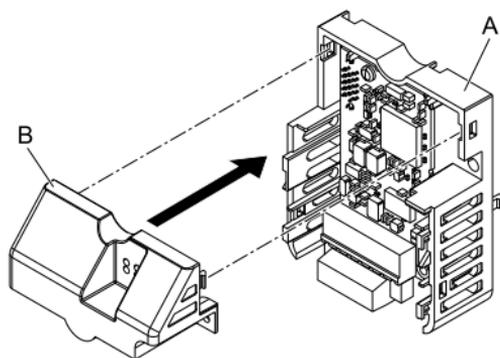


**A - Option cover**

**B - LED label**

**Figure 5.6 Put the LED Label on the Cover**

- Install the option cover to the base.  
Push the option cover until the hooks click into place on the base.



**A - Base**

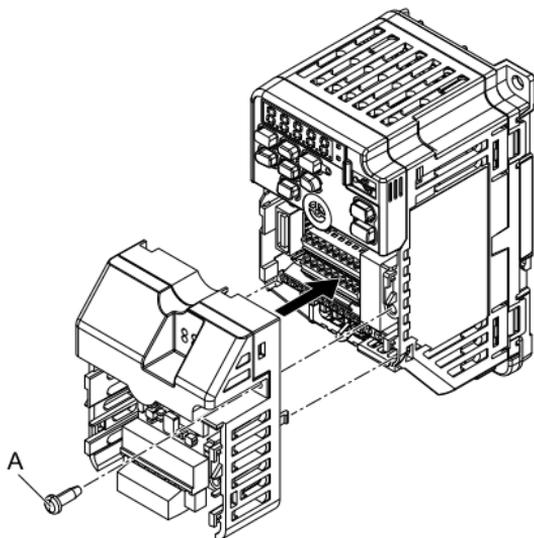
**B - Option cover**

### **Figure 5.7 Install the Option Cover**

7. Install the case to the drive.

Tighten the screw to a correct tightening torque:

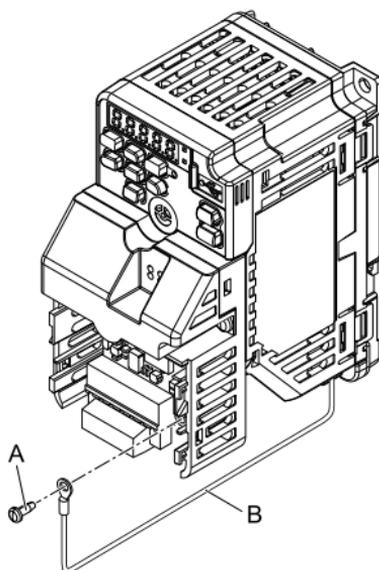
- 4 × 12 tapping screw: 0.69 N·m to 0.73 N·m (6.11 in·lb to 8.67 in·lb)



**A - 4 × 12 tapping screw**

### **Figure 5.8 Install the Case**

8. Use the supplied screw to connect the option side of the ground wire to the communication option.  
Tighten the screw to a correct tightening torque:
  - 3 × 8 tapping screw: 0.49 N·m to 0.73 N·m (4.34 in·lb to 6.46 in·lb)

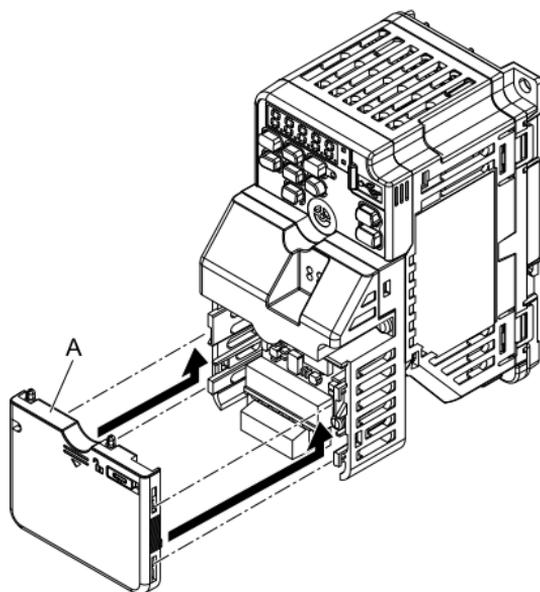


**A - 3 × 8 tapping screw      B - Ground wire**

### **Figure 5.9 Connect the Ground Wire**

9. Connect communication cables to an option connector. Isolate communication cables from main circuit wiring and other electrical lines. Refer to the instruction manual for each communication option for more information.

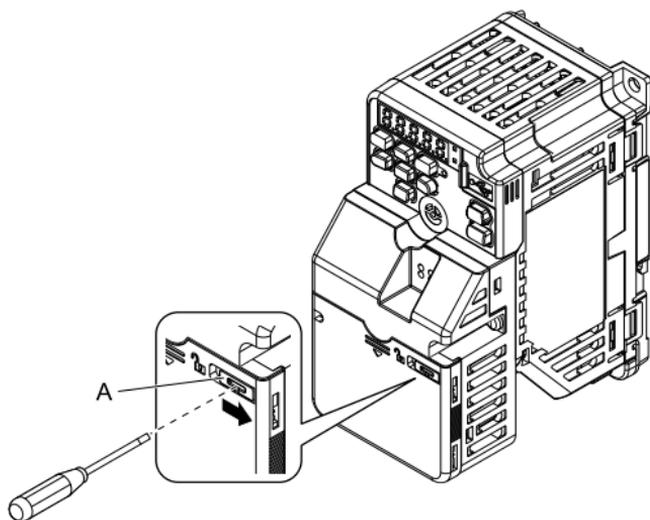
10. Install the front cover.



**A - Front cover**

**Figure 5.10 Install the Front Cover**

11. Use a slotted screwdriver to lock the front cover of the drive.



A - Front cover lock

**Figure 5.11 Lock the Front Cover**

12. Set the drive-related parameters.  
Refer to the instruction manual for each communication option for more information.

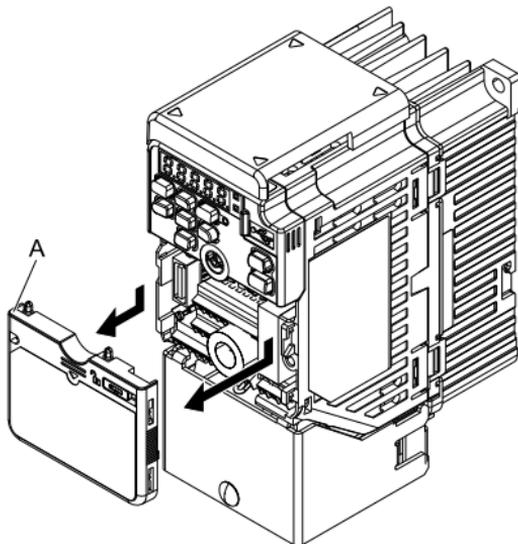
### ◆ Install the Option Card Mounting Kit (Procedure B)

De-energize the drive before you start the procedure.

**⚠ DANGER** *Electrical Shock Hazard. Do not examine, connect, or disconnect wiring on an energized drive. Before servicing, disconnect all power to the equipment and wait for the time specified on the warning label at a minimum. The internal capacitor stays charged after the drive is de-energized. The charge indicator LED extinguishes when the DC bus voltage decreases below 50 Vdc. When all indicators are OFF, measure for dangerous voltages to make sure that the drive is safe. If you do work on the drive when it is energized, it will cause serious injury or death from electrical shock.*

1. Unlock the front cover to remove it from the drive.

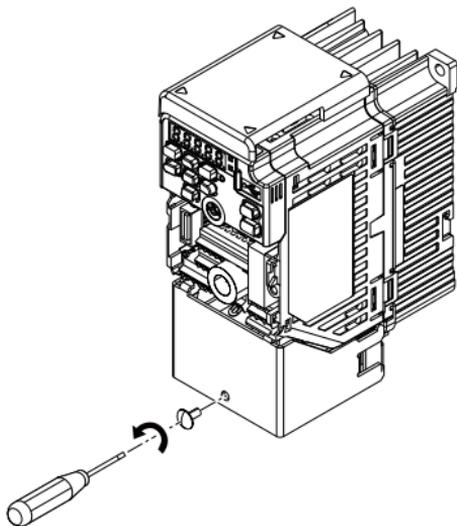
**NOTICE** *Damage to Equipment.* When you touch the option, make sure that you observe correct electrostatic discharge (ESD) procedures. If you do not follow procedures, it can cause ESD damage to the drive circuitry.



A - Front cover

**Figure 5.12 Remove the Front Cover**

2. Remove the screw that attaches the front cover of the conduit.

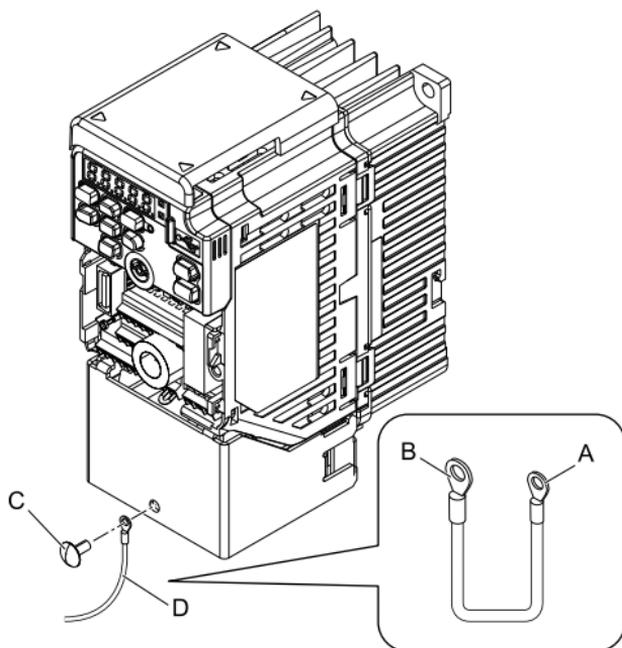


**Figure 5.13 Remove the Screw that Attaches the Front Cover of the Conduit.**

3. Use the supplied screw to connect the drive side of the ground wire to the front cover of the conduit.  
Tighten the screw to a correct tightening torque:
  - M4 × 10 truss head screw: 0.98 N·m to 1.33 N·m (8.67 in·lb to 11.77 in·lb)

**Note:**

The option package has four different ground wires. The length and the terminal size on the drive side of the ground wire are different for different drives. Use the correct ground wire for your drive.



**A - Communication option side of the ground wire**

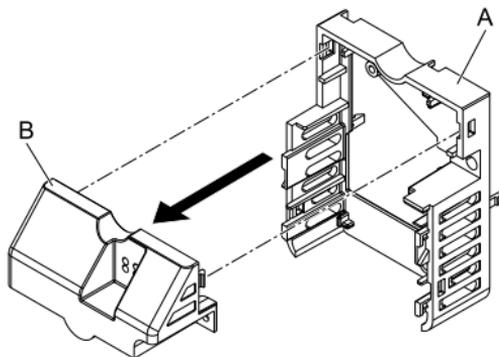
**B - Drive side of the ground wire**

**C - Ground terminal**

**D - Ground wire**

**Figure 5.14 Connect the Ground Wire**

4. Remove the option cover from the base.



**A - Base**

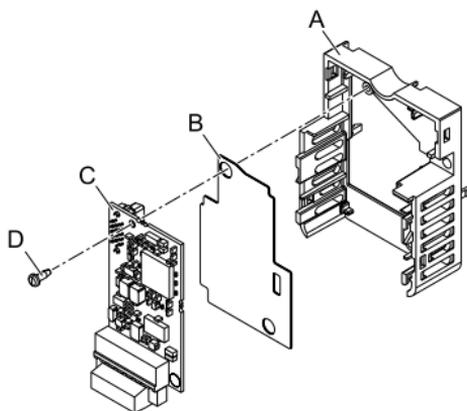
**B - Option cover**

### **Figure 5.15 Remove the Option Cover**

5. Install a communication option and the insulator to the base.

Tighten the screw to a correct tightening torque:

- 3 × 8 tapping screw: 0.49 N·m to 0.73 N·m (4.34 in·lb to 6.46 in·lb)



**A - Base**

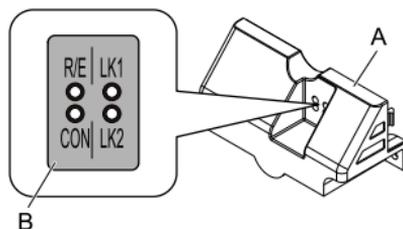
**B - Insulator**

**C - Communication option**

**D - 3 × 8 tapping screw**

**Figure 5.16 Install the Communication Option**

- Put the communication option LED label on the option cover.

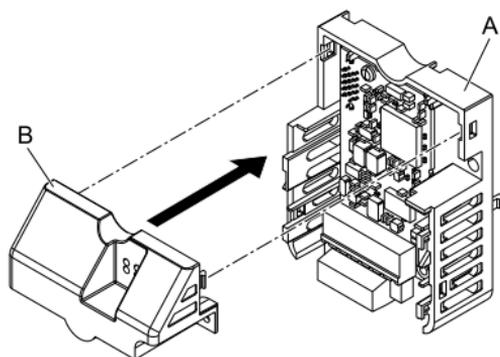


**A - Option cover**

**B - LED label**

**Figure 5.17 Put the LED Label on the Cover**

- Install the option cover to the base.  
Push the option cover until the hooks click into place on the base.



**A - Base**

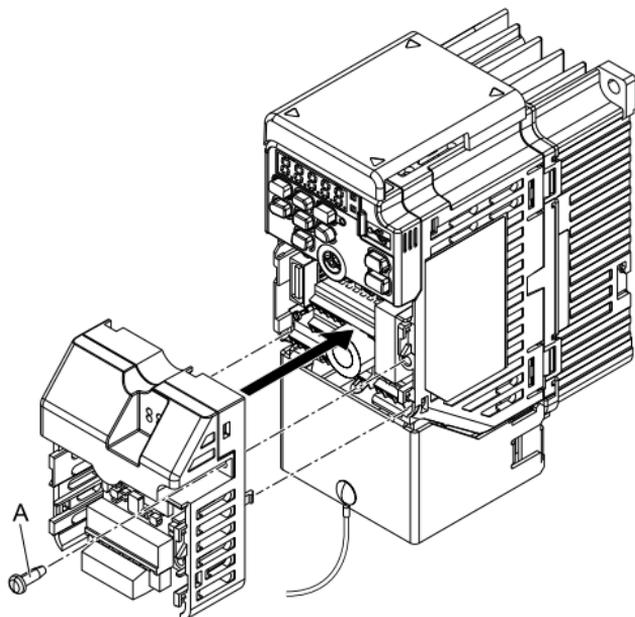
**B - Option cover**

### **Figure 5.18 Install the Option Cover**

- 8.** Install the case to the drive.

Tighten the screw to a correct tightening torque:

- 4 × 12 tapping screw: 0.69 N·m to 0.73 N·m (6.11 in·lb to 8.67 in·lb)



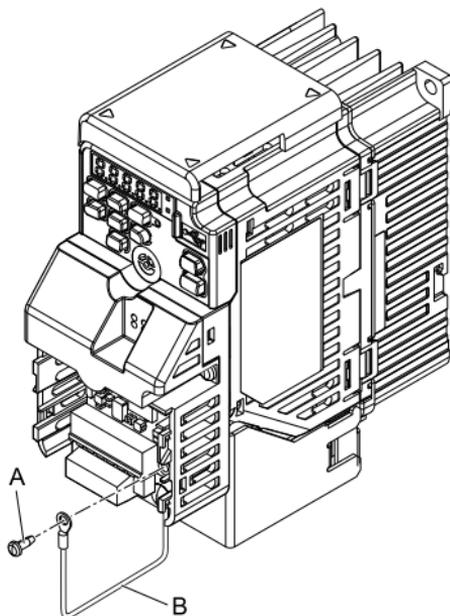
**A - 4 × 12 tapping screw**

**Figure 5.19 Install the Case**

9. Use the supplied screw to connect the option side of the ground wire to the option.

Tighten the screw to a correct tightening torque:

- 3 × 8 tapping screw: 0.49 N·m to 0.73 N·m (4.34 in·lb to 6.46 in·lb)

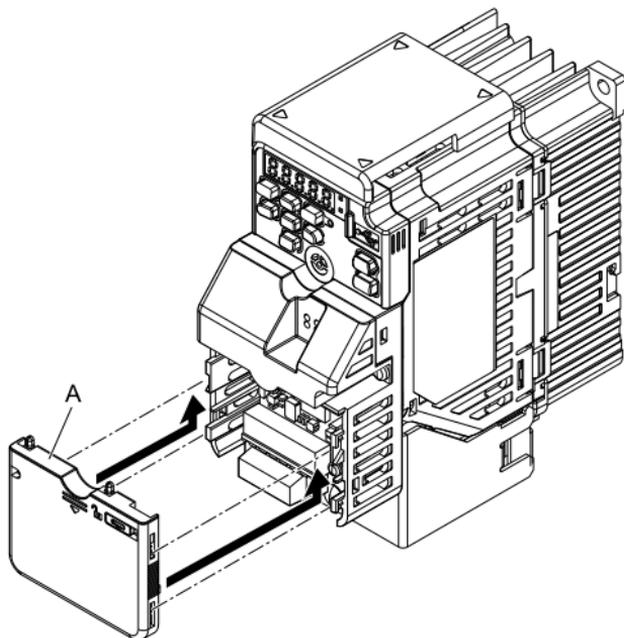


**A - 3 × 8 tapping screw      B - Ground wire**

### **Figure 5.20 Connect the Ground Wire**

10. Connect communication cables to an option connector.  
Isolate communication cables from main circuit wiring and other electrical lines. Refer to the instruction manual for each communication option for more information.

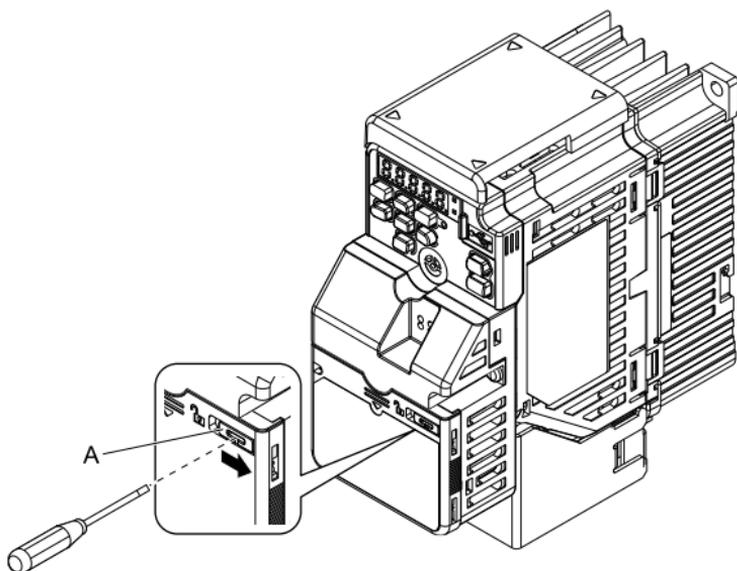
11. Install the front cover.



A - Front cover

**Figure 5.21 Install the Front Cover**

12. Use a slotted screwdriver to lock the front cover of the drive.



**A - Front cover lock**

### **Figure 5.22 Lock the Front Cover**

13. Set the drive-related parameters.  
Refer to the instruction manual for each communication option for more information.

---

## Revision History

<b>Date of Publication</b>	<b>Revision Number</b>	<b>Section</b>	<b>Revised Content</b>
May 2025	3	Back cover	Revision: Address
May 2022	2	3	Addition: For Yaskawa Customers in the North or South America Regions
November 2019	1	All	Revision: Reviewed and corrected entire documentation
		3, 4, 5	Addition: Insulator and corresponding data.
March 2019	-	-	First Edition



# YASKAWA AC Drive Option Option Card Mounting Kit Installation Manual

---

## DRIVE CENTER (INVERTER PLANT)

2-13-1, Nishimiyaichi, Yukuhashi, Fukuoka,  
824-8511, Japan  
Phone: +81-930-25-2548 Fax: +81-930-25-3431  
[www.yaskawa.co.jp](http://www.yaskawa.co.jp)

## YASKAWA ELECTRIC CORPORATION

New Pier Takeshiba South Tower, 1-16-1, Kaigan,  
Minatoku, Tokyo, 105-6891, Japan  
Phone: +81-3-5402-4502 Fax: +81-3-5402-4580  
[www.yaskawa.co.jp](http://www.yaskawa.co.jp)

## YASKAWA AMERICA, INC.

2121, Norman Drive South, Waukegan, IL 60085, U.S.A.  
Phone: +1-800-YASKAWA (927-5292) or +1-847-887-7000  
Fax: +1-847-887-7310  
[www.yaskawa.com](http://www.yaskawa.com)

## YASKAWA ELÉTRICO DO BRASIL LTDA.

777, Avenida Piraporinha, Diadema, São Paulo,  
09950-000, Brasil  
Phone: +55-11-3585-1100 Fax: +55-11-3585-1187  
[www.yaskawa.com.br](http://www.yaskawa.com.br)

## YASKAWA EUROPE GmbH

Philipp-Reis-Str. 6, 65735 Hattersheim am Main, Germany  
Phone: +49-6196-569-300 Fax: +49-6196-569-398  
[www.yaskawa.eu.com](http://www.yaskawa.eu.com)  
E-mail: [info@yaskawa.eu.com](mailto:info@yaskawa.eu.com)

## YASKAWA ELECTRIC KOREA CORPORATION

6F, 112, LS-ro, Dongan-gu, Anyang-si, Gyeonggi-do, Korea  
Phone: +82-31-8015-4224 Fax: +82-31-8015-5034  
[www.yaskawa.co.kr](http://www.yaskawa.co.kr)

## YASKAWA ASIA PACIFIC PTE. LTD.

30A, Kallang Place, #06-01, 339213, Singapore  
Phone: +65-6282-3003 Fax: +65-6289-3003  
[www.yaskawa.com.sg](http://www.yaskawa.com.sg)

## YASKAWA ELECTRIC (THAILAND) CO., LTD.

59, 1F-SF, Flourish Building, Soi Ratchadapisek 18,  
Ratchadapisek Road, Huaykwang, Bangkok, 10310,  
Thailand  
Phone: +66-2-017-0099 Fax: +66-2-017-0799  
[www.yaskawa.co.th](http://www.yaskawa.co.th)

## YASKAWA ELECTRIC (CHINA) CO., LTD.

22F, Link Square 1, No.222, Hubin Road, Shanghai,  
200021, China  
Phone: +86-21-5385-2200 Fax: +86-21-5385-3299  
[www.yaskawa.com.cn](http://www.yaskawa.com.cn)

## YASKAWA ELECTRIC (CHINA) CO., LTD. BEIJING OFFICE

Room 1011, Tower W3 Oriental Plaza, No. 1,  
East Chang An Avenue,  
Dong Cheng District, Beijing, 100738, China  
Phone: +86-10-8518-4086 Fax: +86-10-8518-4082

## YASKAWA ELECTRIC TAIWAN CORPORATION

12F, No. 207, Section 3, Beishin Road, Shindian District,  
New Taipei City 23143, Taiwan  
Phone: +886-2-8913-1333  
Fax: +886-2-8913-1513 or +886-2-8913-1519  
[www.yaskawa.com.tw](http://www.yaskawa.com.tw)

## YASKAWA INDIA PRIVATE LIMITED

#17/A, Electronics City, Hosur Road, Bengaluru,  
560 100 (Karnataka), India  
Phone: +91-80-4244-1900 Fax: +91-80-4244-1901  
[www.yaskawaindia.in](http://www.yaskawaindia.in)

---

# YASKAWA

YASKAWA ELECTRIC CORPORATION

In the event that the end user of this product is to be the military and said product is to be employed in any weapons systems or the manufacture thereof, the export will fall under the relevant regulations as stipulated in the Foreign Exchange and Foreign Trade Regulations. Therefore, be sure to follow all procedures and submit all relevant documentation according to any and all rules, regulations and laws that may apply.

Specifications are subject to change without notice for ongoing product modifications and improvements.

© 2019 YASKAWA Electric Corporation



\*TOEPC7206007\*

MANUAL NO. TOEP C720600 07B <3>-0  
Published in Japan May 2025  
23-2-25  
Original instructions.