

NIDEC MOTOR CONTROL MODULE REPLACEMENT KIT

507857-02
3/2021

INSTALLATION INSTRUCTIONS FOR NIDEC INDOOR BLOWER MOTOR CONTROL MODULE REPLACEMENT KITS

WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation and service must be performed by a licensed professional HVAC installer or equivalent, service agency, or the gas supplier.

CAUTION

As with any mechanical equipment, contact with sharp sheet metal edges can result in personal injury. Take care while handling this equipment and wear gloves and protective clothing.

WARNING



Electric Shock Hazard! – Disconnect all power supplies before servicing. Replace all parts and panels before operating. Failure to do so can result in death or electrical shock.

WARNING

Electric Shock Hazard.
Can cause injury or death.
Foil-faced insulation has conductive characteristics similar to metal. Be sure there are no electrical connections within 1/2" of the insulation. If the foil-faced insulation comes in contact with electrical voltage, the foil could provide a path for current to pass through to the outer metal cabinet. While the current produced may not be enough to trip existing electrical safety devices (e.g. fuses or circuit breakers), the current can be enough to cause an electric shock hazard that could cause personal injury or death.

Shipping and Packing List

Package 1 of 1 contains:
1 – Replacement Motor Control Module

Application

Use the kit specified in the following tables to replace the motor control module in CBA25UHV / BCE5V / HCG units.

Unit	Replacement Variable Speed Motor-Only	Replacement Motor Control Module Only Kit Catalog Number (Part Number)
CBA25UHV-018-230A01	72W41 (1/2 HP)	17D68 (102993-11)
CBA25UHV-024-230A01	72W41 (1/2 HP)	17D69 (102993-12)
CBA25UHV-030-230A01	72W41 (1/2 HP)	17D70 (102993-13)
CBA25UHV-036-230A01	72W41 (1/2 HP)	17D71 (102993-14)
CBA25UHV-042-230A01	72W45 (1 HP)	17D72 (102993-15)
CBA25UHV-048-230A01	72W45 (1 HP)	17D73 (102993-16)
CBA25UHV-060-230A01	72W45 (1 HP)	17D74 (102993-17)
BCE5V18MA4X-50	72W41 (1/2 HP)	17D68 (102993-11)
BCE5V24MA4X-50	72W41 (1/2 HP)	17D69 (102993-12)
BCE5V30MA4X-50	72W41 (1/2 HP)	17D70 (102993-13)
BCE5V36MA4X-50	72W41 (1/2 HP)	17D71 (102993-14)
BCE5V42MA4X-50	72W45 (1 HP)	17D72 (102993-15)
BCE5V48MA4X-50	72W45 (1 HP)	17D73 (102993-16)
BCE5V60MA4X-50	72W45 (1 HP)	17D74 (102993-17)

NOTE - All replacement control modules look alike; however, each module is factory programmed to be used with a specific motor. It is very important to make sure that you are using the correct replacement module. **USE OF THE WRONG CONTROL MODULE MAY RESULT IN UNEXPECTED UNIT OPERATION.**



Unit	Replacement Variable Speed Motor-Only	Replacement Motor Control Module Only Kit Catalog Number (Part Number)
CBA25UHV-018-230-02	72W41 (1/2 HP)	21L16 (I02993- 18)
CBA25UHV-024-230-02	72W41 (1/2 HP)	21L17 (I02993-19)
CBA25UHV-030-230-02	72W41 (1/2 HP)	21L18 (I02993- 20)
CBA25UHV-036-230-02	72W41 (1/2 HP)	21L19 (I02993- 21)
CBA25UHV-042-230-02	72W45 (1 HP)	21L20 (I02993- 22)
CBA25UHV-048-230-02	72W45 (1 HP)	21L21 (I02993-23)
CBA25UHV-060-230-02	72W45 (1 HP)	21L22 (I02993-24)
BCE5V18MA4X-51	72W41 (1/2 HP)	21L16 (I02993- 18)
BCE5V24MA4X-51	72W41 (1/2 HP)	21L17 (I02993-19)
BCE5V30MA4X-51	72W41 (1/2 HP)	21L18 (I02993- 20)
BCE5V36MA4X-51	72W41 (1/2 HP)	21L19 (I02993- 21)
BCE5V42MA4X-51	72W45 (1 HP)	21L20 (I02993- 22)
BCE5V48MA4X-51	72W45 (1 HP)	21L21 (I02993-23)
BCE5V60MA4X-51	72W45 (1 HP)	21L22 (I02993-24)
BE5V24MA4X-51	72W41 (1/2 HP)	21L17 (I02993-19)
BE5V30MA4X-51	72W41 (1/2 HP)	21L18 (I02993- 20)
BE5V36MA4X-51	72W41 (1/2 HP)	21L19 (I02993- 21)
BE5V42MA4X-51	72W45 (1 HP)	21L20 (I02993- 22)
BE5V48MA4X-51	72W45 (1 HP)	21L21 (I02993-23)
BE5V60MA4X-51	72W45 (1 HP)	21L22 (I02993-24)
HCG24V1P	72W41 (1/2 HP)	21L17 (I02993-19)
HCG30V1P	72W41 (1/2 HP)	21L18 (I02993- 20)
HCG36V1P	72W41 (1/2 HP)	21L19 (I02993- 21)
HCG42V1P	72W45 (1 HP)	21L20 (I02993- 22)
HCG48V1P	72W45 (1 HP)	21L21 (I02993-23)
HCG60V1P	72W45 (1 HP)	21L22 (I02993-24)

NOTE - All replacement control modules look alike; however, each module is factory programmed to be used with a specific motor. It is very important to make sure that you are using the correct replacement module. **USE OF THE WRONG CONTROL MODULE MAY RESULT IN UNEXPECTED UNIT OPERATION.**

Motor Control Module Removal and Check

- 1 - Disconnect all electrical power to unit. Wait at least five minutes before beginning service procedures. This will allow internal capacitors to fully discharge, avoiding possible electrical shock.
- 2 - Remove the blower access panel.
- 3 - Unplug the 5-pin (J48) connector from the control module and the 16-pin (J49) connector from the 16X4W black box (see Figure 1).
- 4 - Remove the two screws securing the blower housing and slide blower assembly forward to access the blower-motor wiring. It is not necessary to remove the blower motor from the blower assembly.

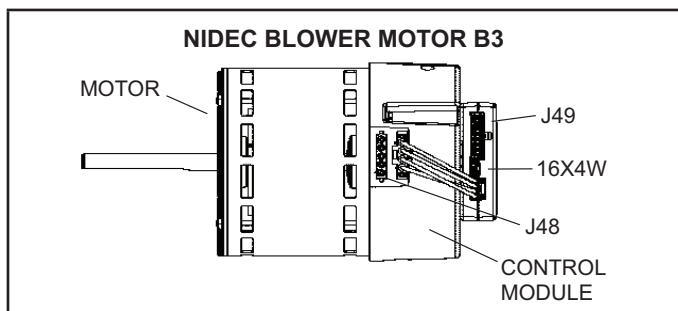


FIGURE 1

- 5 - Remove the three screws securing the motor to the control module (see Figure 2). The control module will separate from the motor. Set the screws aside.

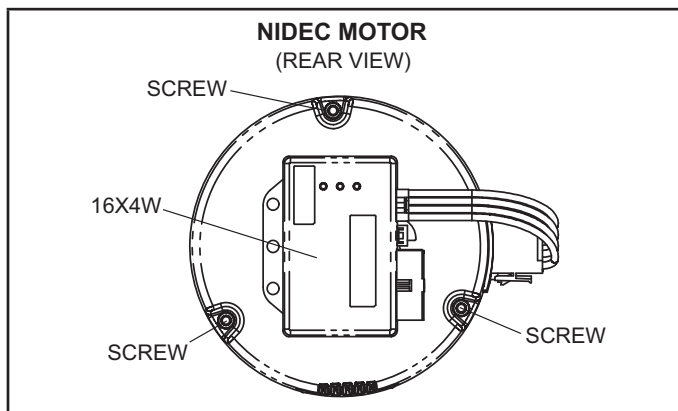


FIGURE 2

- 6 - Disconnect the three-wire motor-to-control-module harness (see Figure 3). If control module side terminals are damaged, replace the control module. If terminals are not damaged, move to Step 7.
- 7 - Check the NTC thermistor for any damage. Replace the control module if damaged. If no damage is present, move to Step 8.
- 8 - Check the capacitors for any damage. Look for bulging or swelling caps. If caps are bulging or swollen, replace the control module. If capacitors are not damaged, move to Step 9.
- 9 - Check resistance between each of the three phase-control terminals. Resistance between any two terminals should be greater than 100K ohms.

If resistance is less than 100K, replace the control module. If resistance is correct, control module is working properly. Move to Step 10.

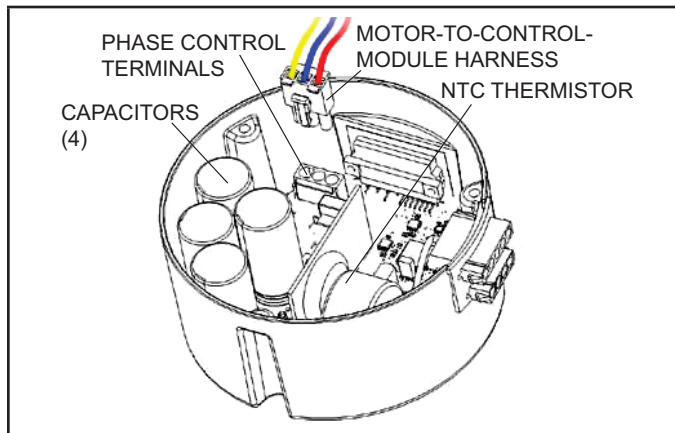


FIGURE 3

Motor Check

- 10 - If motor shaft spins freely in both directions, proceed to Step 11. If not, replace motor.
- 11 - Check the motor-to-control-module harness for any damage. If the harness or terminals are damaged, replace the motor. If there is no damage, move to Step 12.
- 12 - Check the resistance between each of the three phase-control terminals in the motor-to-control-module harness. Resistance between any two contacts should be equal. If resistance between any two contacts is not equal or if any resistance shows as open or short circuited, replace motor.

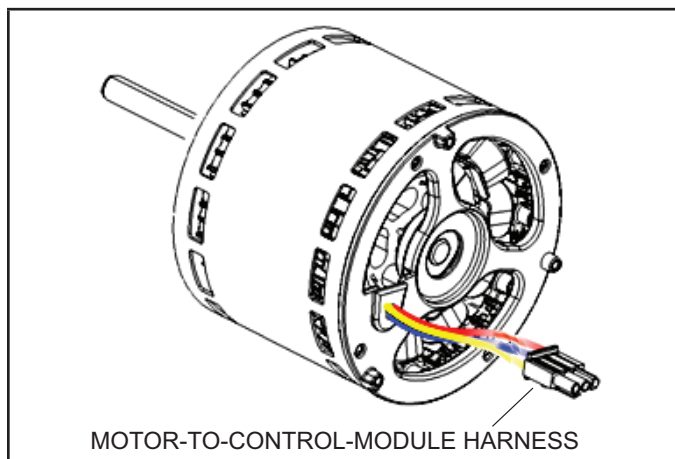


FIGURE 4

Control Module Installation

- 1 - Install control module onto motor using existing screws removed in Step 5.
- 2 - Plug the 5-pin connector (J48) into the control module and the 16-pin connector (J49) into the black box.
- 3 - Re-position the blower assembly back in the cabinet and secure with the two screws removed earlier.
- 4 - Restore power to the unit.