

**INSTALLATION INSTRUCTIONS FOR VARIABLE FREQUENCY DRIVE (VFD) REPLACEMENT  
 KITS (LB-115321C, F, J, M-Y) USED WITH SGA/SCA/LGH/LCH420, 480, 540, & 600 UNITS**

 **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 qualified installer, service agency or the gas supplier

 **WARNING**

**ELECTRICAL SHOCK HAZARD.**

Failure to follow instructions exactly could result in serious injury or death.

**VFD HOLDS A POTENTIALLY LETHAL CHARGE UP TO 10 MINUTES AFTER POWER HAS BEEN DISCONNECTED. Do not open VFD cover until 10 minutes AFTER power source has been disconnected and power lamp has turned off.**

Read manual provided by VFD manufacturer. Carefully review and follow all safety warnings in that manual also.

**Shipping and Packing List**

**Package 1 of 1 contains:**

- 1- Pre-programmed VFD (A96 or A137)

**Application**

LB-115321 kits are used to replace the 3-10 hp variable frequency drive (VFD) on SGA/SCA/LGH/LCH420, 480, 540, & 600 units. See table 1 for usage and application.

 **CAUTION**

Danger of sharp metallic edges. Can cause injury. Take care when servicing unit to avoid accidental contact with sharp edges.

**TABLE 1**

| Voltage | Kit Number | Catalog Number | HP Rating | Application   |
|---------|------------|----------------|-----------|---|
| 230 (Y) | LB-115321N | 49W67          | 3         | (1)* 3 HP Exhaust Motor   |
| 460 (G) | LB-115321P | 49W68          | 3         | (1)* 3 HP Exhaust Motor   |
| 575 (J) | LB-115321C | 32W76          | 3         | (1)* 3 HP Exhaust Motor   |
| 230 (Y) | LB-115321R | 49W69          | 5         | Supply Air Motor or (1)* 5 HP Exhaust Motor                     |
| 460 (G) | LB-115321S | 49W70          | 5         | Supply Air Motor or (1)* 5 HP Exhaust Motor                     |
| 575 (J) | LB-115321F | 33W02          | 5         | Supply Air Motor or (1)* 5 HP Exhaust Motor                     |
| 230 (Y) | LB-115321T | 49W71          | 7.5       | Supply Air, (1)* 7.5 Exhaust Motor, or (2)* 3 HP Exhaust Motors |
| 460 (G) | LB-115321W | 49W72          | 7.5       | Supply Air, (1)* 7.5 Exhaust Motor, or (2)* 3 HP Exhaust Motors |
| 575 (J) | LB-115321J | 42W51          | 7.5       | Supply Air, (1)* 7.5 Exhaust Motor, or (2)* 3 HP Exhaust Motors |
| 230 (Y) | LB-115321X | 49W73          | 10        | Supply Air or (2)* 5 HP Exhaust Motors                          |
| 460 (G) | LB-115321Y | 49W74          | 10        | Supply Air Motor or (2)* 5 HP Exhaust Motors                    |
| 575 (J) | LB-115321M | 42W54          | 10        | Supply Air Motor or (2)* 5 HP Exhaust Motors                    |

\*Kit applies to units equipped with this number of power exhaust fans.

 **WARNING**

**ELECTRICAL SHOCK HAZARD.**

**STOP! Before you continue, make sure that power to the VFD has been off for at least 10 minutes. The capacitor in the VFD holds high voltage power for up to to 10 minutes after power has been disconnected.**

- 1- Disconnect all power to unit and **WAIT AT LEAST 10 MINUTES** before opening the VFD cover.
- 2- Open the lower cover on the VFD to access wire connections. Disconnect the wires from the terminals, making special note of the wire color and identification stamping on the wire that was connected to each terminal.



3- *Mitsubishi VFD* -

Remove the top two screws and loosen the lower two screws securing the VFD to the mounting bracket. Remove the VFD from the controls compartment.

*Toshiba VFD* -

It may be necessary to remove all of the screws securing the VFD to the mounting plate. Remove the VFD from the controls compartment.

- 4- Slide keyholes on replacement VFD over lower securing screws. Reinsert and tighten two upper screws, then tighten lower screws. When replacing a Toshiba inverter, see the Toshiba VFD Replacement section.

## ⚠ WARNING

**Power wiring must be connected properly. Improperly connected power wiring may result in damage to the VFD.**

- 5- Carefully connect existing wires to the replacement VFD as illustrated in figure 1. On units without harnesses, take care to properly connect the power wiring going into and out of the VFD. When replacing a Toshiba VFD, see Toshiba Replacement section.
- 6- Close access panel and restore power to the unit.

### WIRING CONNECTIONS REPLACING A MITSUBISHI VFD

**WARNING!**

DO NOT OPEN VFD COVER UNTIL POWER TO VFD HAS BEEN OFF FOR AT LEAST 10 MINUTES. VFD CAPACITOR HOLDS DANGEROUS HIGH VOLTAGE CHARGE. FAILURE TO FOLLOW WARNINGS COULD RESULT IN SERIOUS INJURY OR DEATH.

HARNESS PLUG  
P248 LOW VOLTAGE  
CONTROL WIRES

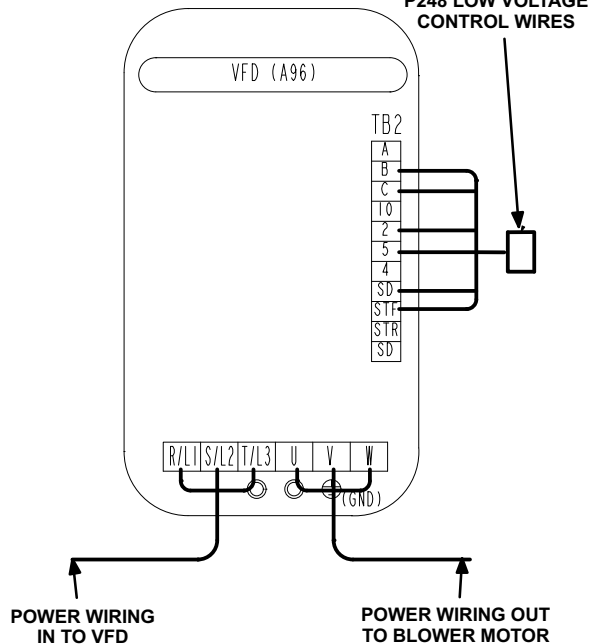


FIGURE 1

## Verify Proper Operation

### If the blower is not rotating in the proper direction:

- 1- Disconnect all power to the unit and open the compressor / controls compartment access panel.
- 2- Reverse any two power wires going from the VFD to the blower motor.
- 3- Check all field wiring to the VFD. No wires should be connected to TB2-STR.
- 4- Check to ensure that wiring connections are secure.
- 5- Close access panel and restore power to unit.

### Verify proper operation of VFD:

Refer to unit start-up instructions in unit installation instructions.

*Note - Operate unit in the heating mode or mode which operates at the highest blower speed. Measure amp draw to the blower between the VFD and blower motor. Verify that the amperage does not exceed the FLA value listed on the motor nameplate.*

### SUPPLY AIR VARIABLE FREQUENCY DRIVE

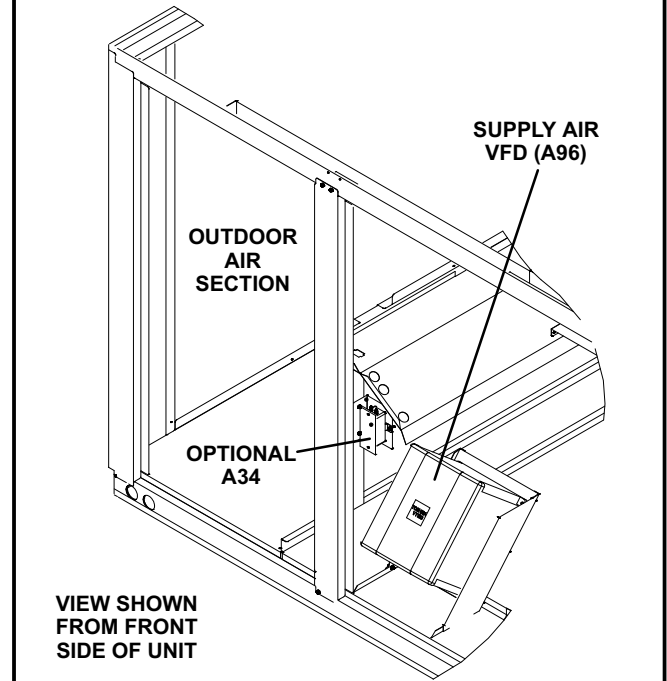


FIGURE 2

## POWER EXHAUST VARIABLE FREQUENCY DRIVE

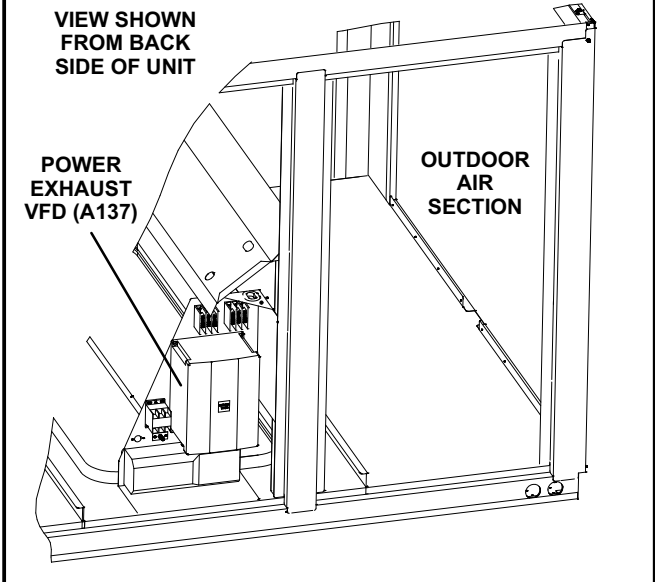


FIGURE 3

### Toshiba VFD Replacement

A Mitsubishi VFD is provided in this kit. Use the following additional steps when a Toshiba VFD is being replaced

#### INSTALLATION

New holes must be drilled in the mounting plate when replacing a Toshiba VFD.

- 1- Use the replacement VFD as a template to mark the location of two upper holes and two lower slots.
- 2- Drill holes where marked and secure VFD to mounting plate with field-provided screws.

#### WIRING

The Toshiba VFD has different low voltage terminal designations compared to a Mitsubishi VFD.

- 1- Make low voltage wiring connections using table 2 as a cross reference. See figure 4 through 7.
- 2- Connect a field-provided wire between VFD terminal 5 and the unit chassis (any convenient point that is at ground potential).
- 3- Make power wiring connections as shown in figures 4 through 7.

TABLE 2

| Toshiba Wire Stamp | Mitsubishi Terminal Designation |
|--------------------|---------------------------------|
| F                  | STF                             |
| V1/V1A             | 2                               |
| CC                 | SD                              |
| FLA                | B or B1                         |
| FLC                | C or C1                         |
| ---                | 5                               |

MAIN TERMINAL CONNECTIONS  
5 HP Y VOLT

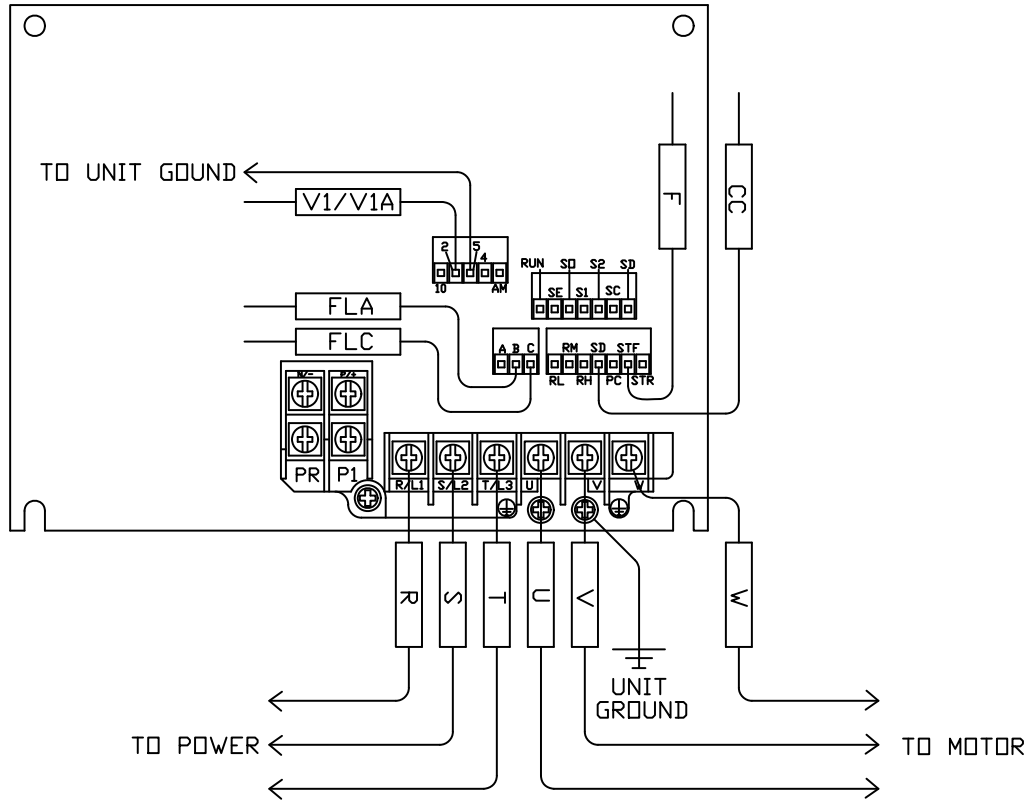


FIGURE 4

MAIN TERMINAL CONNECTIONS  
 3 HP Y VOLT, 3 & 5 HP G VOLT

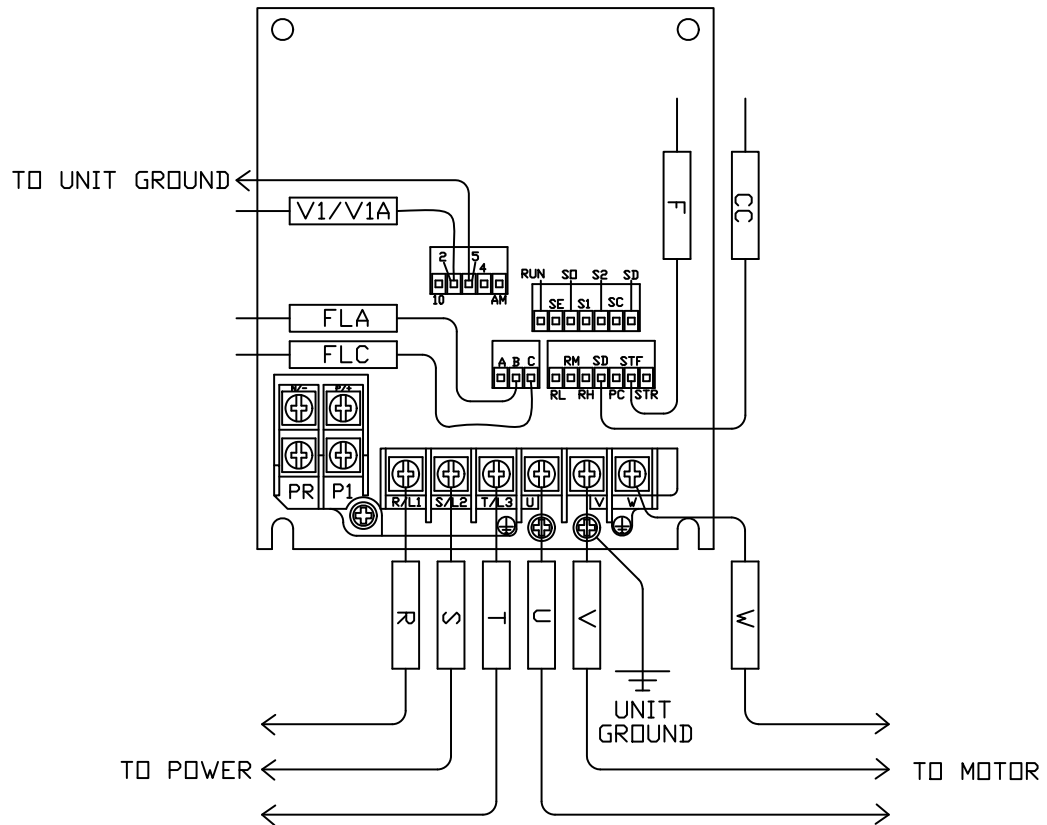


FIGURE 5

MAIN TERMINAL CONNECTIONS  
7.5 & 10 HP Y & G VOLT

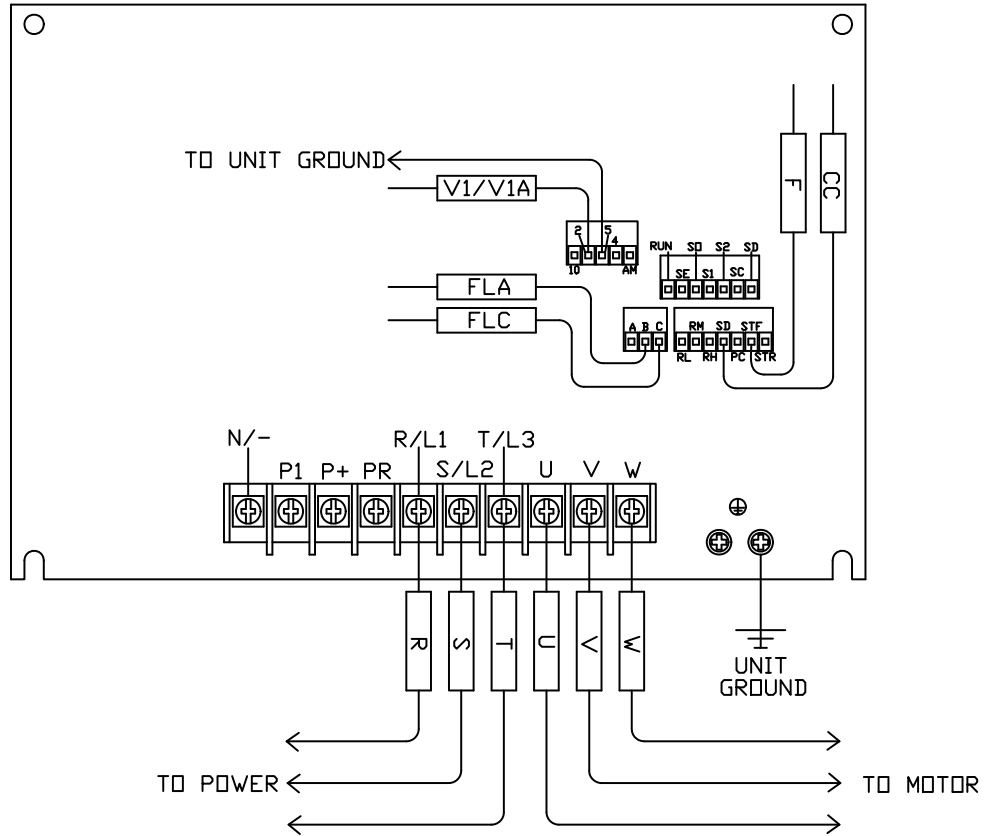


FIGURE 6

MAIN TERMINAL CONNECTIONS  
3, 5, 7.5, & 10 HP J VOLT

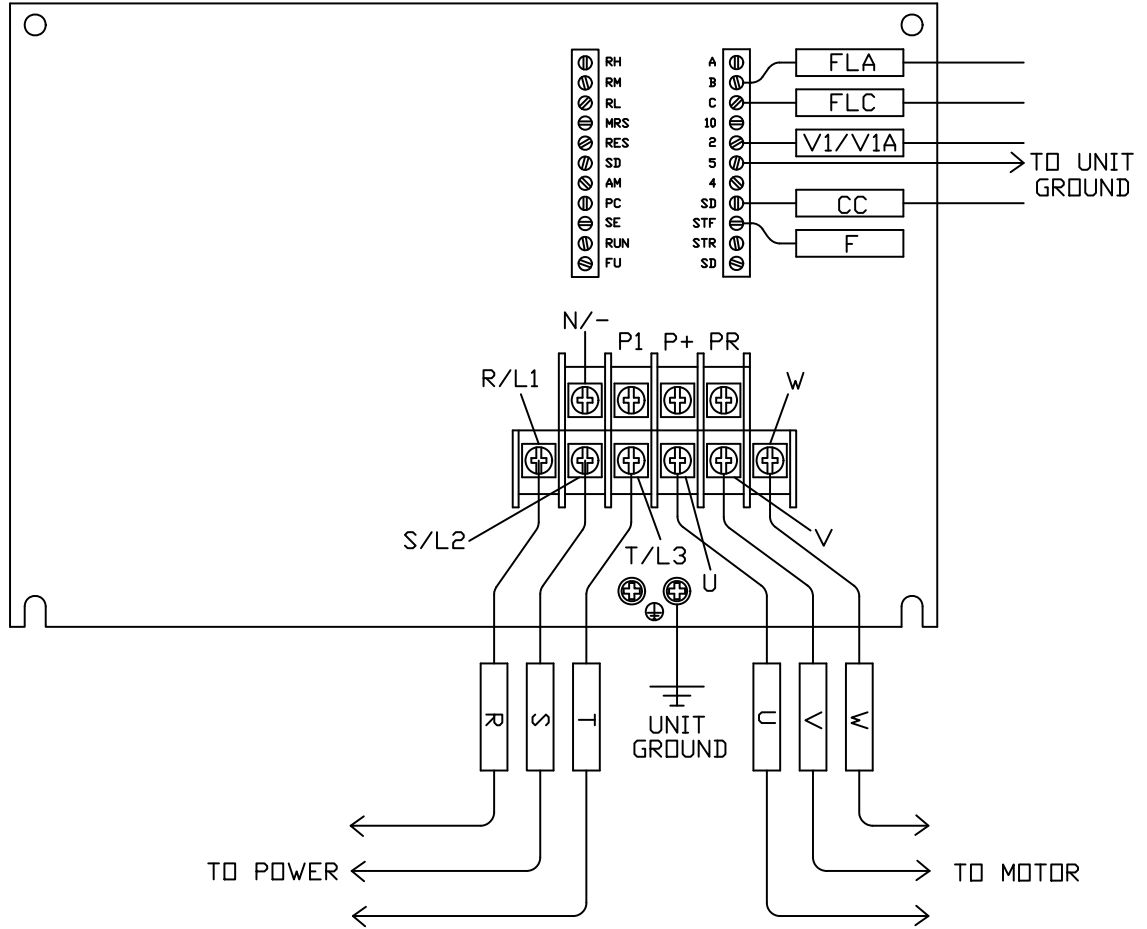


FIGURE 7