



# 1334-MOD-K9

## Dynamic Braking

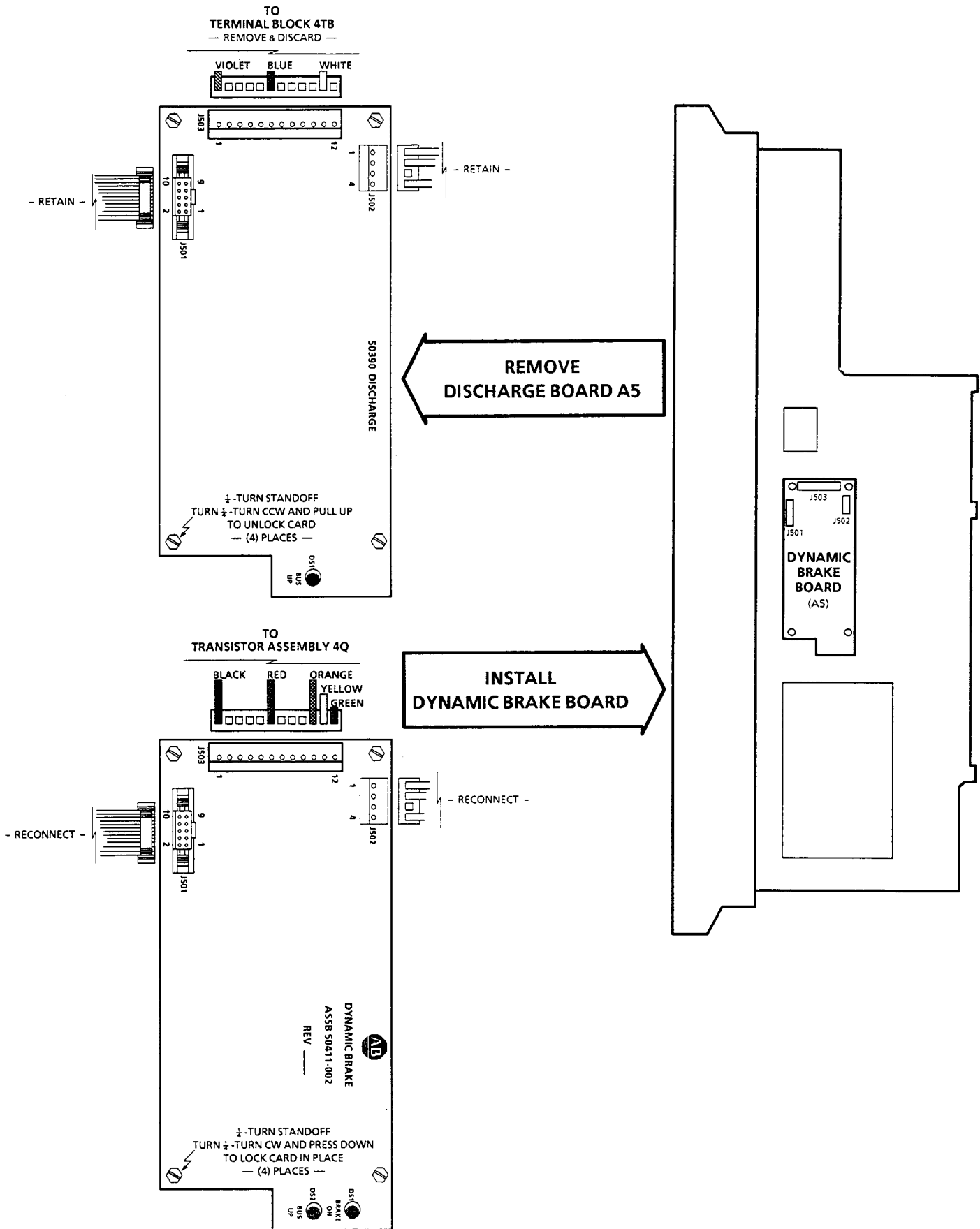
**Description** The Bulletin 1334-MOD-K9 Dynamic Braking Option Kit contains components to perform the dynamic braking function for a Bulletin 1334 25, 30, 40 or 50HP, 460V, Series A Drive. When installed, the 1334-MOD-K9 permits the Drive to generate a 100% braking torque in the motor during motor regenerating conditions. The Dynamic Brake duty cycle is 20%, with a maximum braking time of 20 seconds.

### Each 1334-MOD-K9 Option Kit Includes —

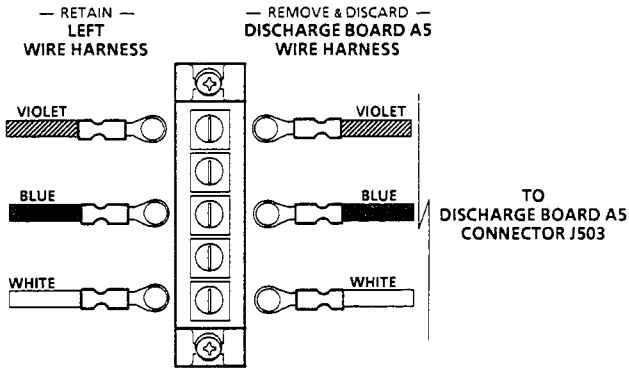
- (1) Dynamic Brake Board, P/N 50411-002
- (4)  $\frac{1}{2}$ " ,  $\frac{1}{4}$ -Turn Standoffs, P/N 201105
  
- (1) Snubber Capacitor **7C** for 30-50 HP Drives, P/N 201455
- (1) Capacitor Mounting Bracket, P/N 201482
- (2) 8-32 3/8" Screws, P/N 214965
- (2) #8 Split Lock Washers, P/N 242683
  
- (1) Transistor Assembly **4Q**, P/N 201053
- (1) Transistor Adapter Plate for 25HP Drives, P/N 175401
- (2) 2g Thermal Compound Packets, P/N 201686
- (6) 10-32 3/8" Screws, P/N 215341
- (6) #10 Split Lock Washers, P/N 209716
  
- (1) Transistor Wire Harness w/ Separate Capacitor Leads, P/N 197184
- (1) 12" Length Heat Shrink Sleeving for 30-50 HP Drives, P/N 201327
  
- (2) Brake Resistor Assemblies, P/N 41483

The 1334-MOD-K9 Kit includes components that are installed both in and outside the Drive. The Brake Board, 30-50 HP Snubber Capacitor, Transistor Assembly, & Transistor Wire Harness are installed inside the Drive, while the Brake Resistor Assemblies are externally installed.

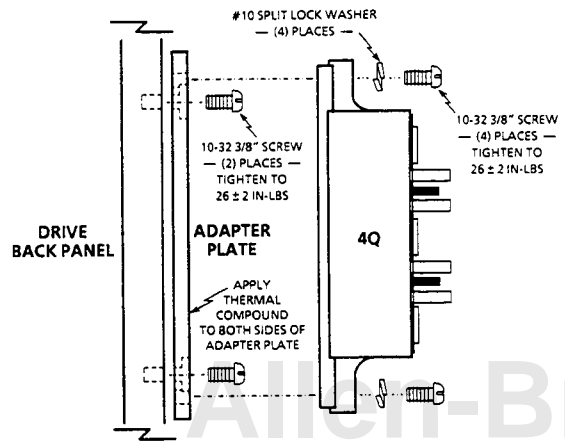
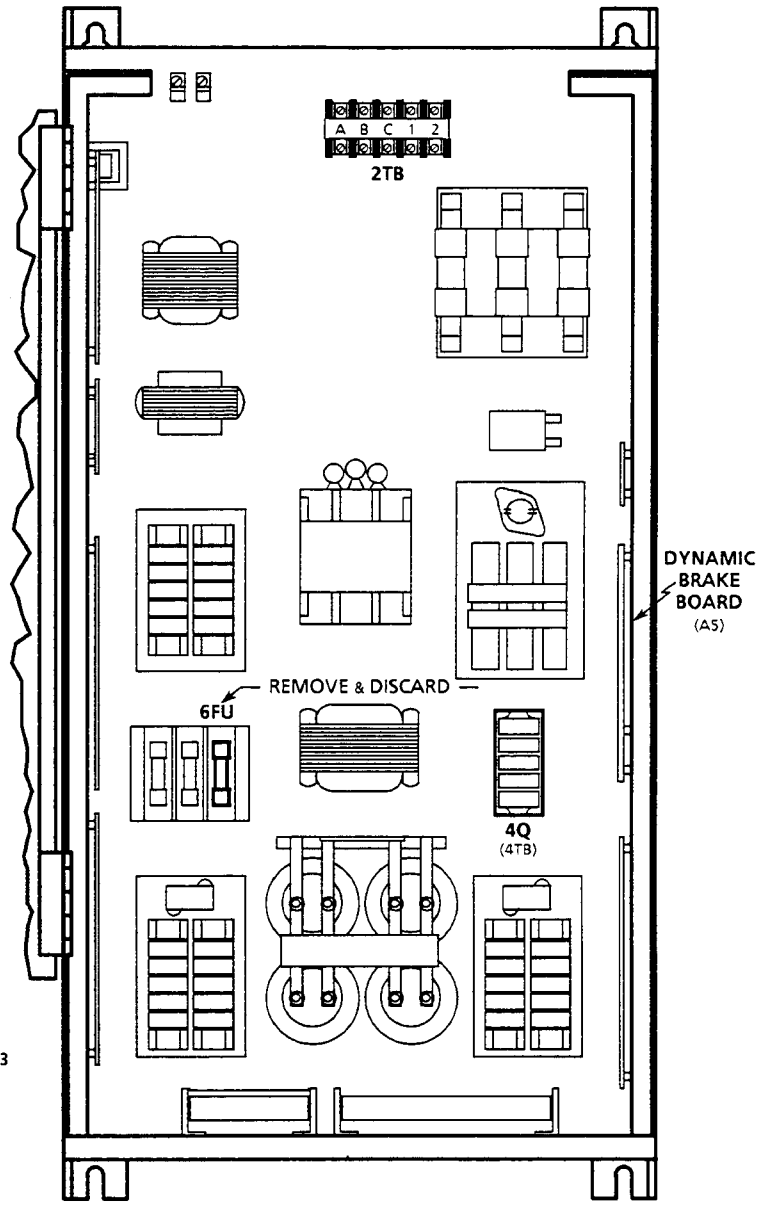
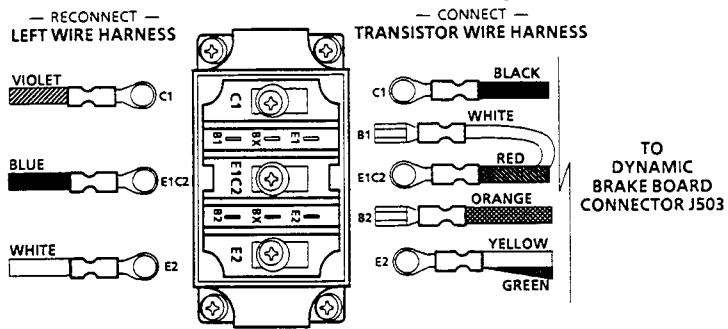
Additional materials, including hardware for mounting the external Brake Resistor Assemblies and wire to connect the assemblies to the Drive, must be supplied by the user.

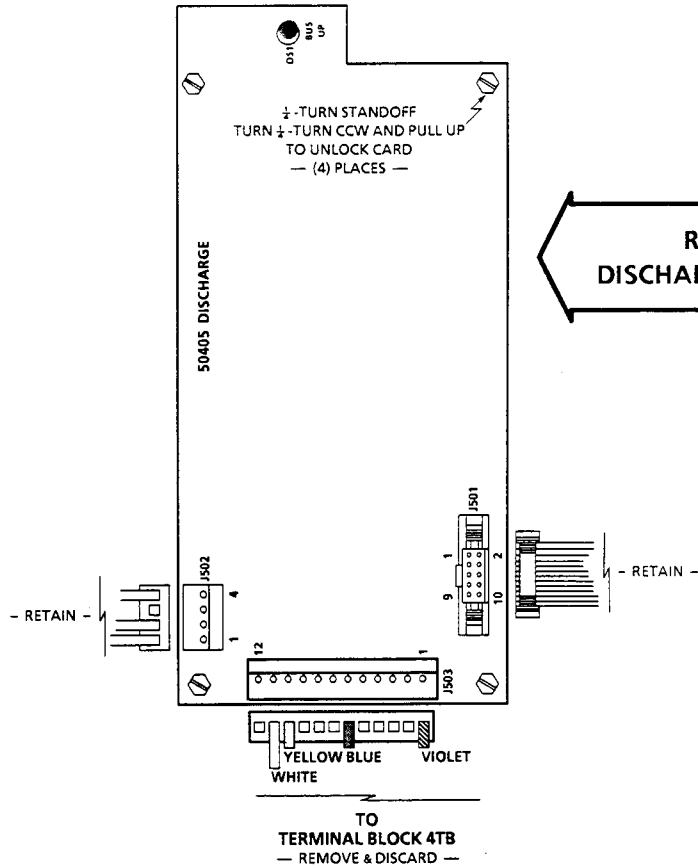


**REMOVE TERMINAL BLOCK 4TB**



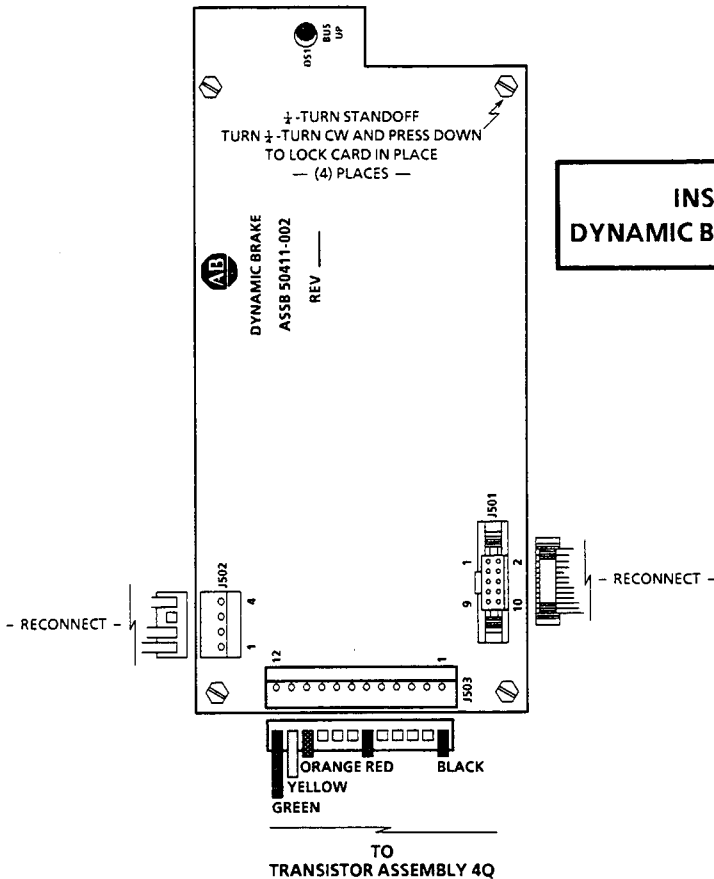
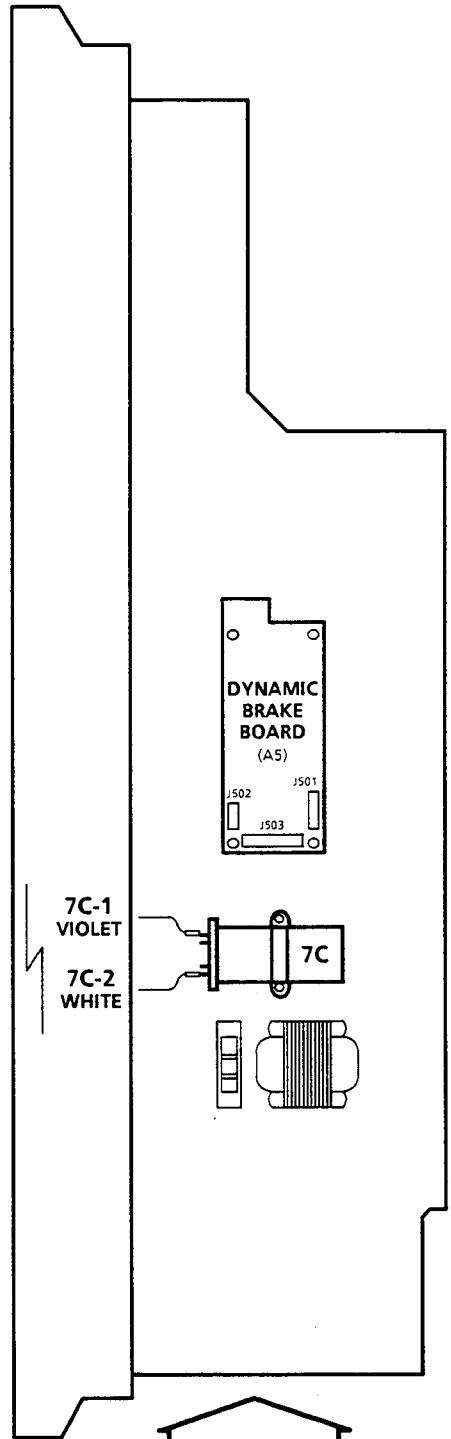
**INSTALL TRANSISTOR ASSEMBLY 4Q**





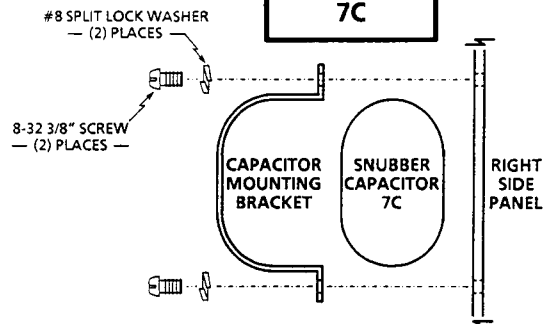
REMOVE  
DISCHARGE BOARD A5

TO  
TRANSISTOR  
ASSEMBLY  
4Q

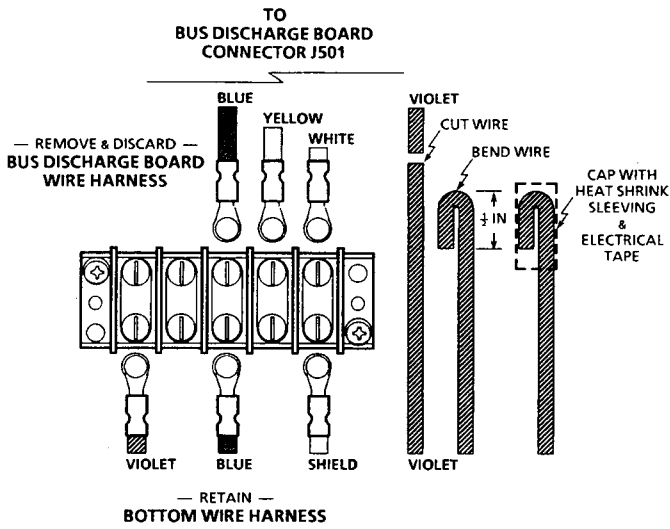


INSTALL  
DYNAMIC BRAKE BOARD

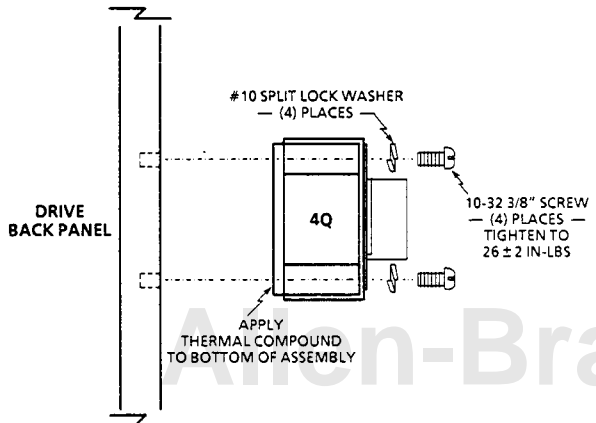
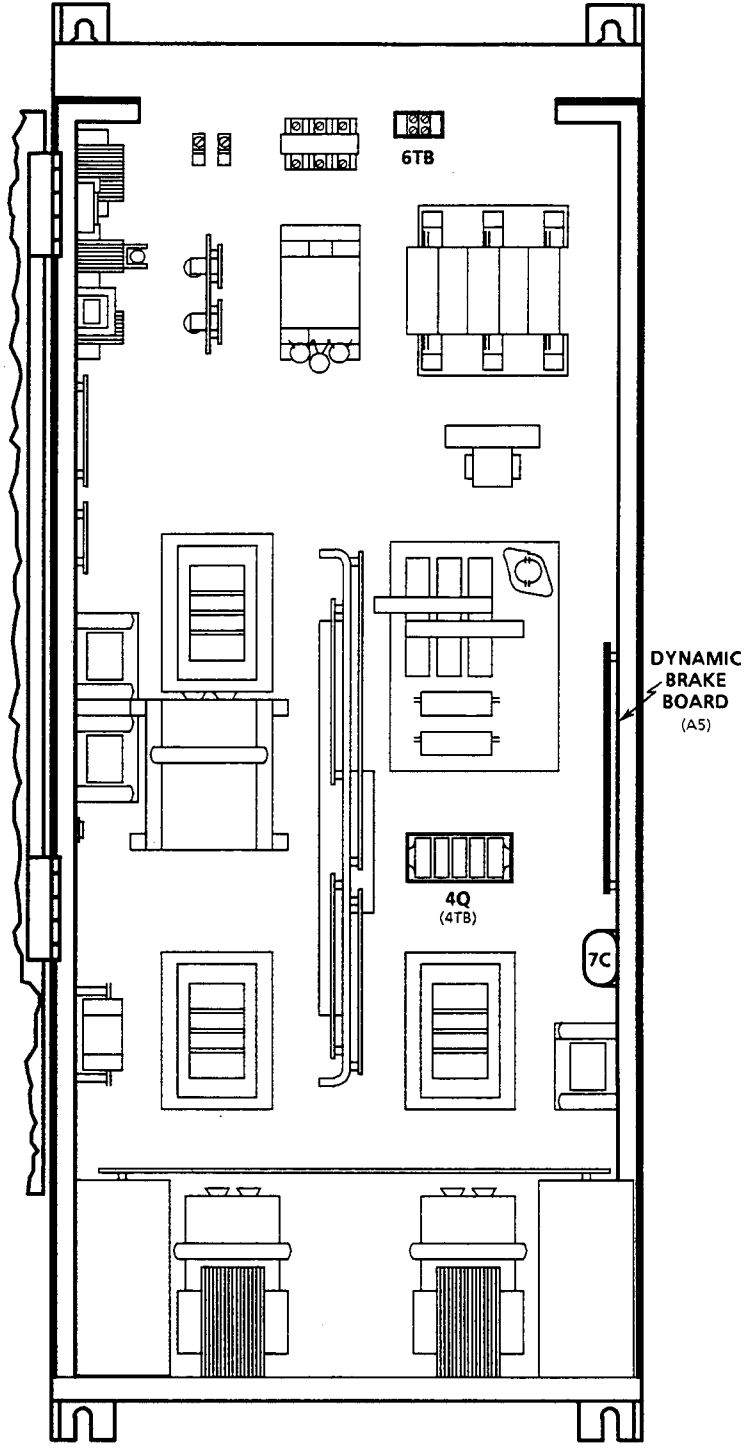
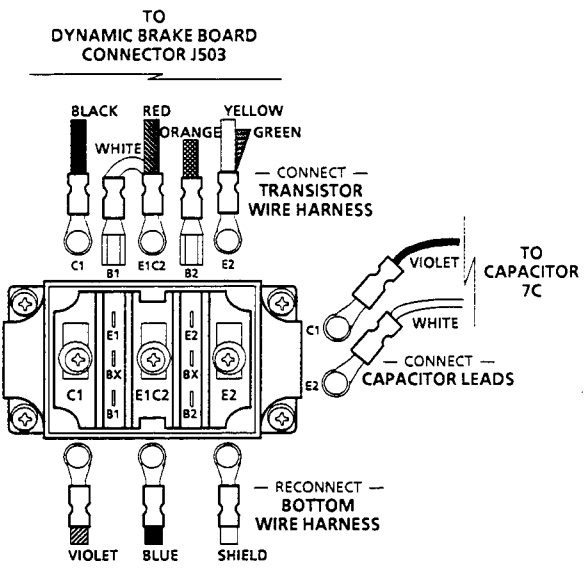
INSTALL  
CAPACITOR  
7C

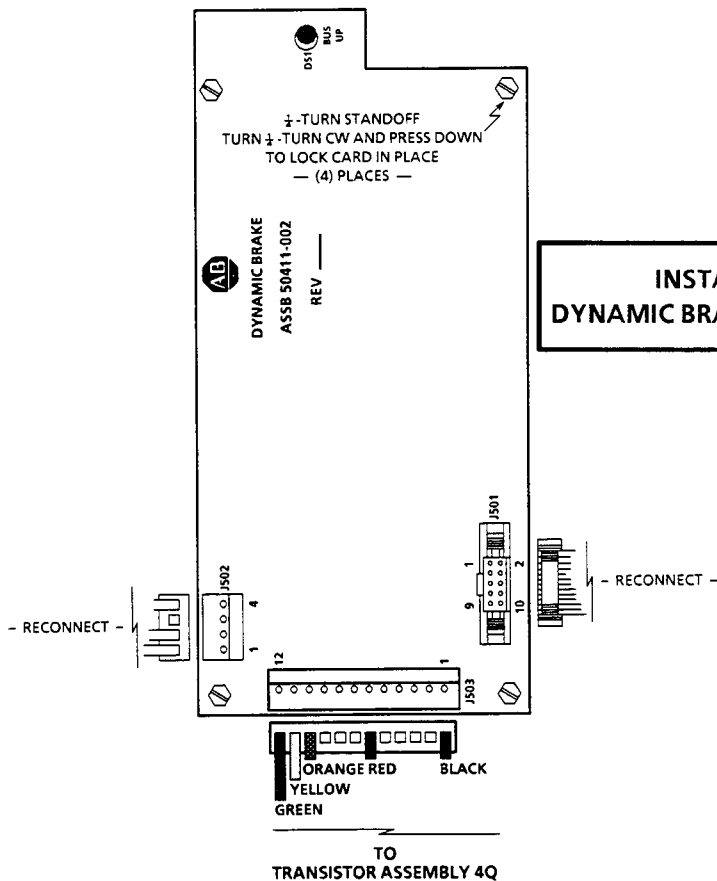
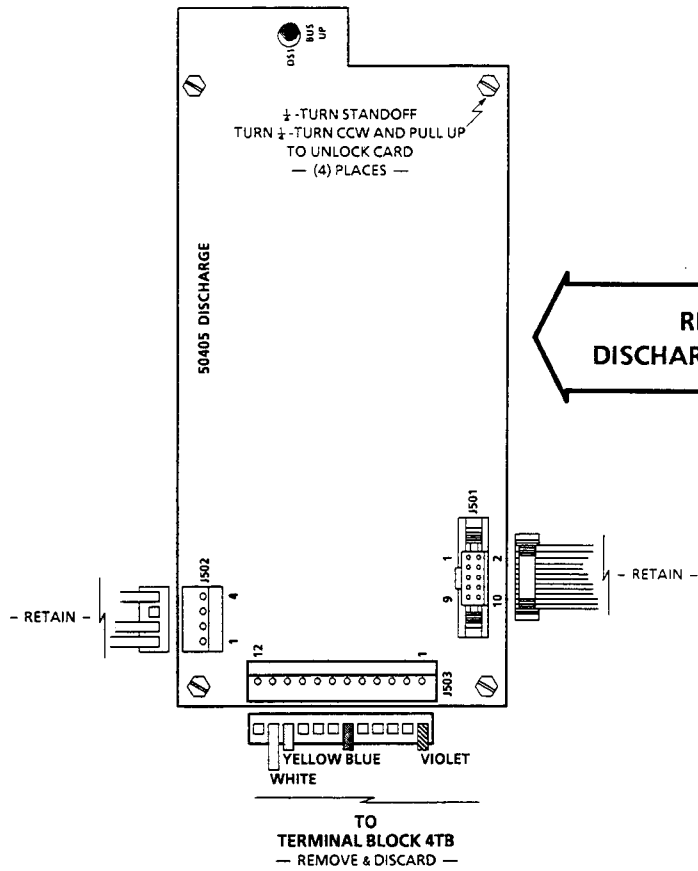


← REMOVE TERMINAL BLOCK 4TB



→ INSTALL TRANSISTOR ASSEMBLY 4Q

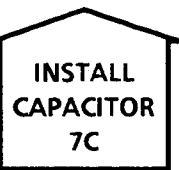
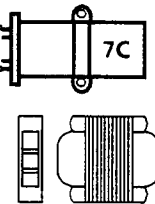
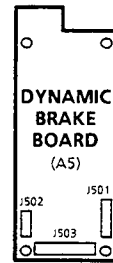




TO  
TRANSISTOR  
ASSEMBLY  
4Q

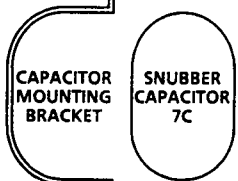
7C-1  
VIOLET

7C-2  
WHITE



8-32 3/8" SCREW  
— (2) PLACES —

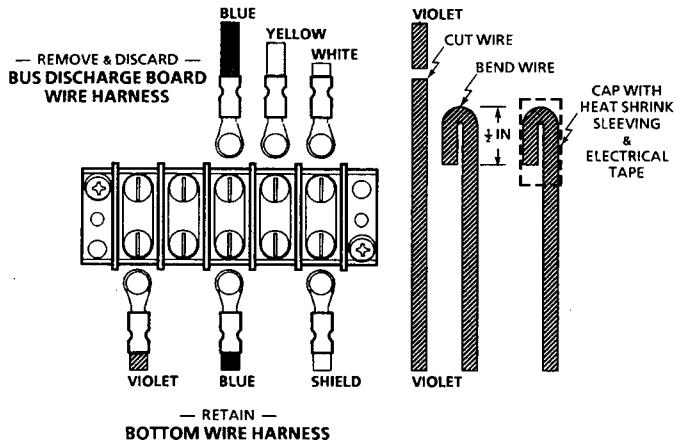
#8 SPLIT LOCK WASHER  
— (2) PLACES —



RIGHT  
SIDE  
PANEL

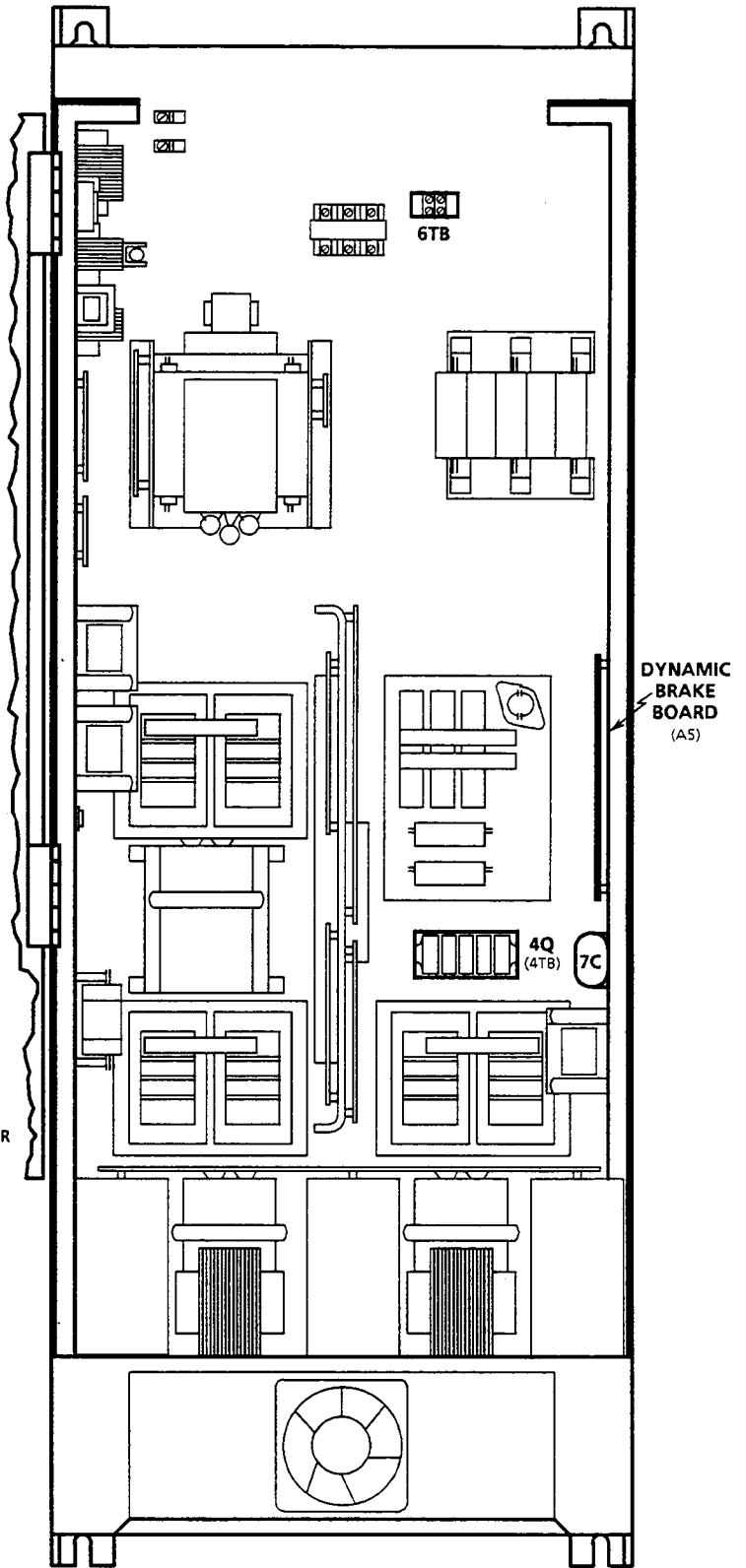
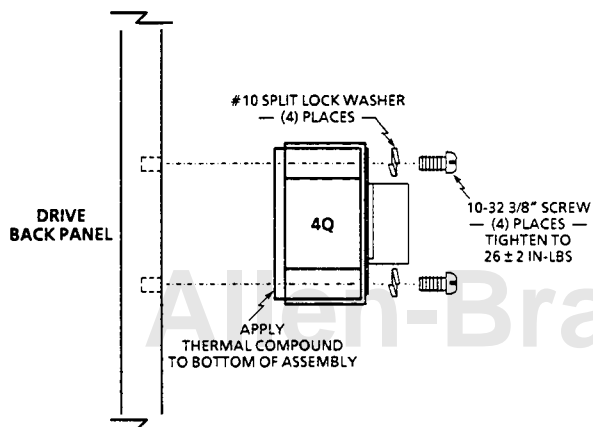
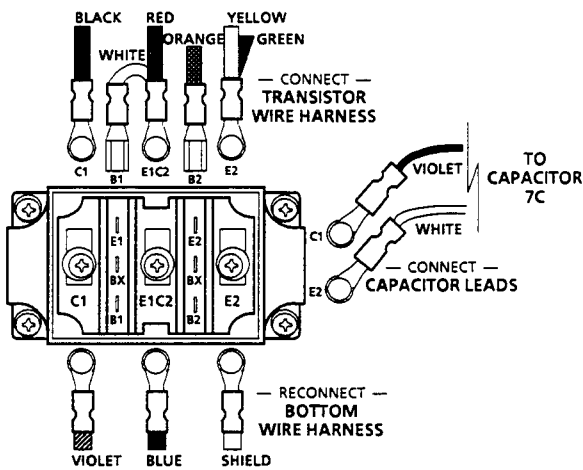
← REMOVE TERMINAL BLOCK 4TB

TO  
 BUS DISCHARGE BOARD  
 CONNECTOR J501



→ INSTALL TRANSISTOR ASSEMBLY 4Q

TO  
 DYNAMIC BRAKE BOARD  
 CONNECTOR J503



## Installation



### WARNING

Only personnel familiar with the Drive and its associated machinery should plan or implement the installation, startup, and adjustment of MOD kits. Failure to comply may result in personal injury and/or equipment damage.

To guard against personal injury, always remove & lock out power to the Drive at the main supply disconnect and all other power source disconnects. Ensure that DS1 is not lit when boards or wires are being installed or connected. Refer to the instruction manual for your Drive for LED location.

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### 25 HP DYNAMIC BRAKE BOARD INSTALLATION

Installation involves —

- Replacing Bus Discharge Board A5 with the Dynamic Brake Board.
- Reconnecting the existing ribbon cable at **J501** and cable harness at **J502**.
- Removing the existing wire harness at **J503**.
- Removing fuse **6FU** on the Drive back panel — For 25 HP Drives, fuse **F1** on the Dynamic Brake Board functionally replaces fuse **6FU**.

As shown on **page 2**, the Dynamic Brake Board is installed in the same position as A5. If required, four extra  $\frac{1}{2}$ "  $\frac{1}{4}$ -turn standoffs have been included with the kit.

### 25 HP TRANSISTOR ASSEMBLY INSTALLATION

#### 25 HP TRANSISTOR WIRE HARNESS INSTALLATION

Installation involves —

- Replacing terminal block **4TB** with the Transistor Assembly.
- Reconnecting the existing left wire harness to the Transistor Assembly.
- Connecting the new Transistor Wire Harness to the Transistor Assembly.

As shown on **page 3**, the Transistor Assembly is installed in the same position as **4TB** but requires an adapter plate to provide the four mounting holes required for the transistor assembly. Before mounting the assembly and adapter plate, spread the contents of the two thermal compound packets evenly over both sides of the adapter plate. Install the adapter plate over the two predrilled and tapped holes in place of **4TB**. Use two of the 10-32  $\frac{3}{8}$ " screws to secure the plate in place. Tighten the screws to  $26 \pm 2$  in-lbs. Install the transistor assembly over the four predrilled and tapped holes on the adapter plate. Use four of the 10-32  $\frac{3}{8}$ " screws and four of the #10 lock washers to secure the assembly in place. Tighten the screws to  $26 \pm 2$  in-lbs.

The Transistor Wire Harness replaces the existing wire harness that is connected between terminal block **4TB** and **J503** on the Bus Discharge Board. One end is plugged into **J503** on the Dynamic Brake Board as shown on **page 2**, while the other end is connected to the Transistor Assembly as shown on **page 3**.



## Installation 30, 40 or 50 HP DYNAMIC BRAKE BOARD INSTALLATION

(continued)

Installation involves —

- Replacing Bus Discharge Board A5 with the Dynamic Brake Board.
- Reconnecting the existing cable harness at **J502** and ribbon cable at **J501**.
- Removing the existing wire harness at **J503**.

As shown on **page 4** or **6**, the Dynamic Brake Board is installed in the same position as A5. If required, four extra  $\frac{1}{2}$ "  $\frac{1}{4}$ -turn standoffs have been included with the kit.

## 30, 40 or 50 HP SNUBBER CAPACITOR INSTALLATION

As shown on **page 4** or **6**, for 30, 40 or 50HP Drives, snubber capacitor **7C** must be installed below the Dynamic Brake Board over the two predrilled and tapped holes. Secure the capacitor using the capacitor mounting bracket, two #8 split lock washers, and two 8-32  $\frac{3}{8}$ " screws.

## 30, 40 or 50 HP TRANSISTOR ASSEMBLY INSTALLATION

### 30, 40 or 50 HP TRANSISTOR WIRE HARNESS INSTALLATION

Installation involves —

- Replacing terminal block **4TB** with the Transistor Assembly.
- Reconnecting the existing bottom wire harness to the Transistor Assembly.
- Connecting the new Transistor Wire Harness including the two separate capacitor leads to the Transistor Assembly.

As shown on **page 5** or **7**, the Transistor Assembly is installed in the same position as **4TB**. Before mounting the assembly, spread the contents of one of the two thermal compound packets evenly over the bottom of the transistor assembly. Install the transistor assembly over the four predrilled and tapped holes in place of **4TB**. Use four of the 10-32  $\frac{3}{8}$ " screws and lock washers provided to secure the assembly in place. Tighten the screws to  $26 \pm 2$  in-lbs.

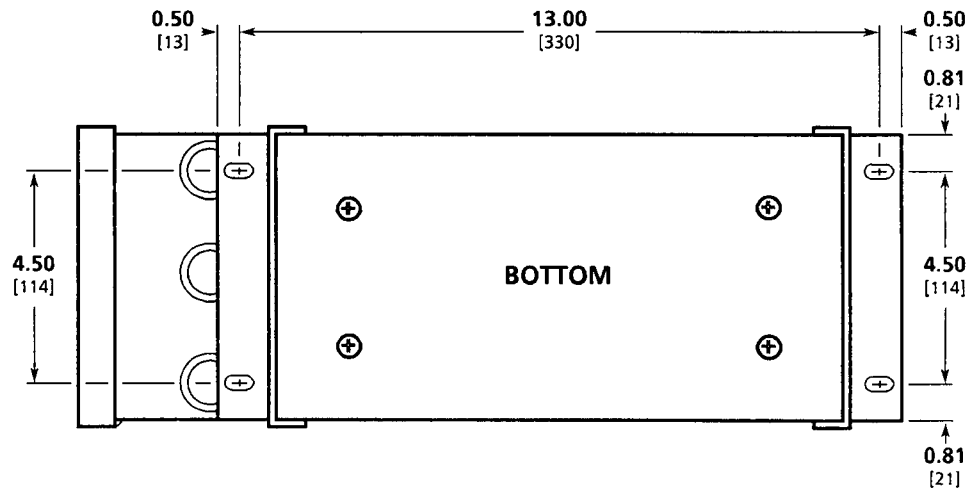
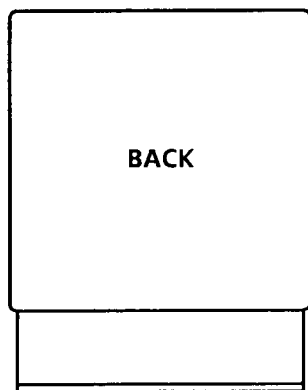
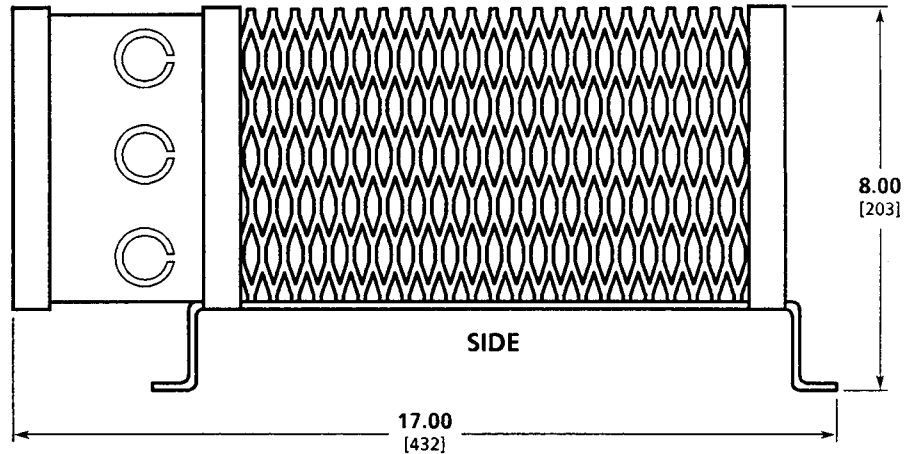
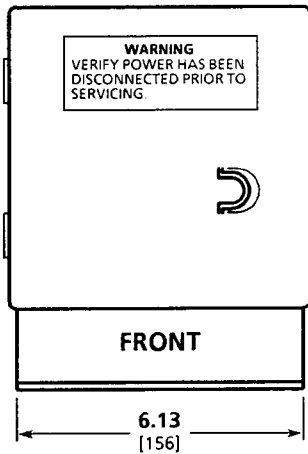
The Transistor Wire Harness replaces the existing wire harness that is connected between terminal block **4TB** and **J503** on the Bus Discharge Board. One end is plugged into **J503** on the Dynamic Brake Board as shown on **page 4** or **6**, while the other end is connected to the Transistor Assembly as shown on **page 5** or **7**.

The existing wire harness has an extra violet wire that is connected between the Bus Discharge Board and Bus Capacitor C2. This wire must be cut and secured as shown on **page 5** or **7** using the heat shrink sleeving supplied with the kit.

Installation  
(continued)

**BRAKE RESISTOR ASSEMBLY INSTALLATION**

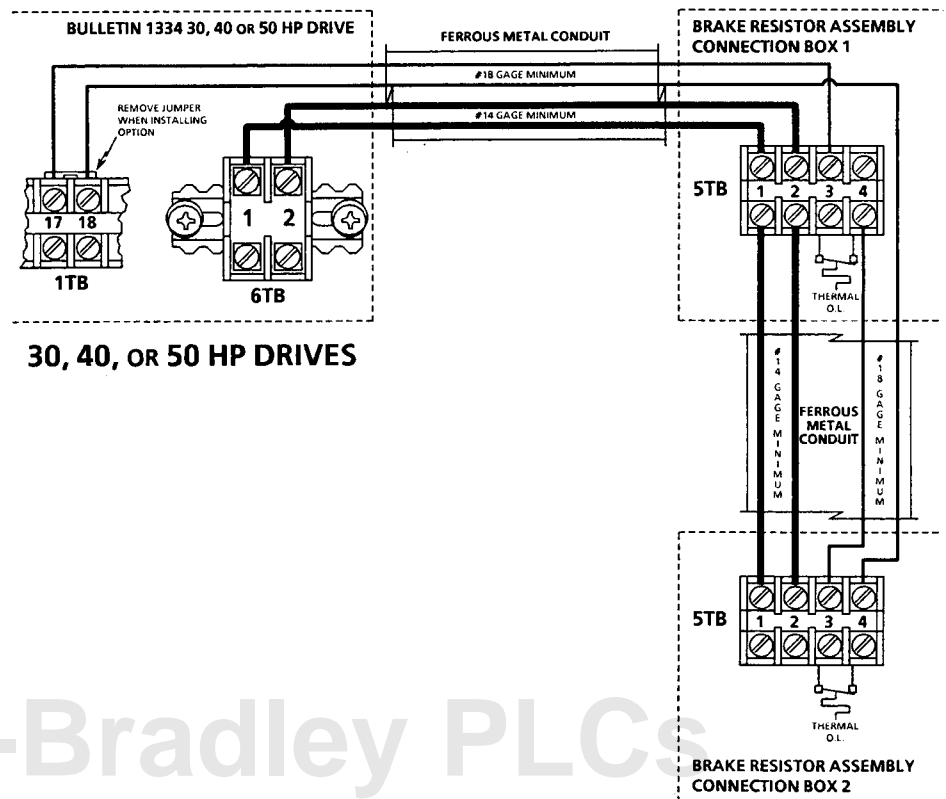
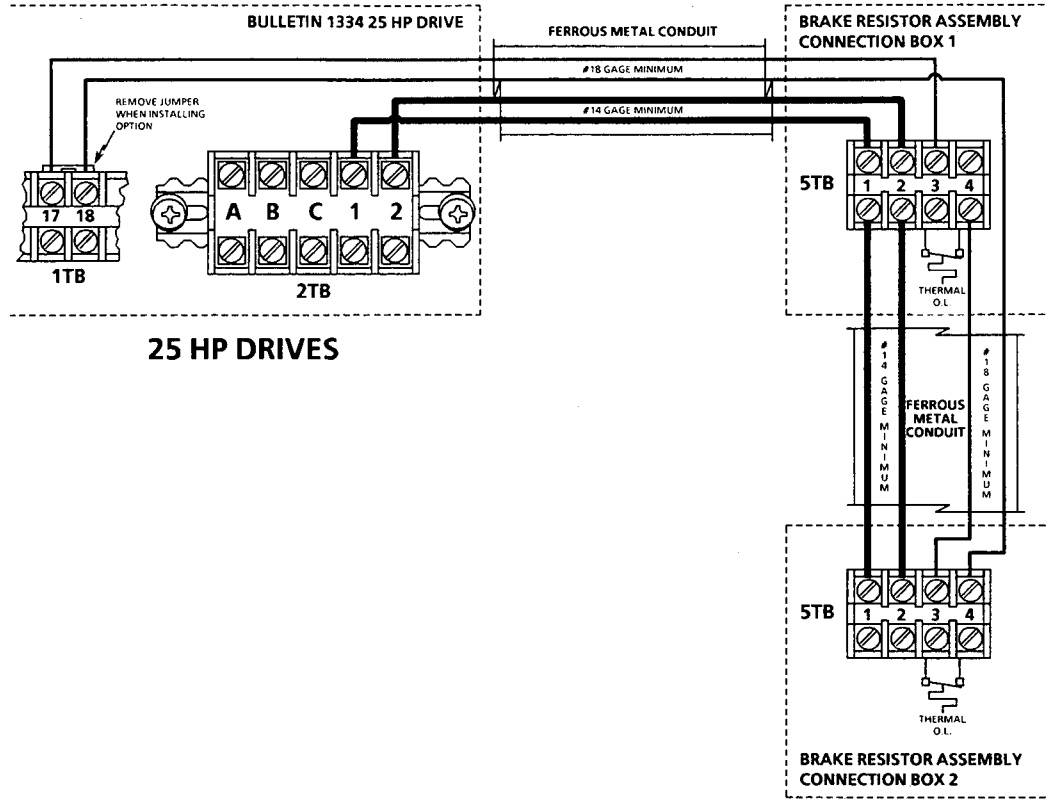
Determine a suitable mounting location for the two Brake Resistor Assemblies and mount them firmly in place. Both assemblies should be located within 10 feet of the Drive and should have a minimum of 12 inches of air space around each cage for heat dissipation. Mounting an assembly with the feet facing upward will not permit proper heat dissipation and is not recommended. Interconnection wiring between the Drive and the Brake Resistor Assemblies must be run in conduit. Use the knockouts on the assembly connection boxes for conduit connections.



**Installation BRAKE RESISTOR ASSEMBLY INTERCONNECTION WIRING**

(continued)

Interconnection wiring between the Brake Resistor Assemblies and the Drive is not provided with the kit. Four wires must be connected from the Brake Resistor Assemblies to the Drive. Two of the wires must be 14 gauge minimum, while the remaining two may be 18 gauge minimum.



## Operation

The DC bus voltage will rise during a braking or regenerative operation when energy from the motor is transferred to the Drive's DC bus. The Drive monitors the DC bus voltage and at a predetermined value tells the dynamic brake board to turn on the brake transistor. The brake transistor connects the dynamic brake resistors across the DC bus to absorb the excess energy. The brake transistor is turned off when the bus voltage returns to normal.

Brake Resistor Assemblies are thermally protected against overload by a relay within each assembly. A normally closed contact is connected between terminals **17 & 18** at **1TB** — the Drive's main terminal block. Should either resistor assembly overheat and trip, the overload relay circuit between terminals **17 & 18** will open, shut down the Drive, and illuminate the Brake Over Temperature LED on the Diagnostic Display Panel.

### TO RESET THE DRIVE —

- Wait a Few Minutes to Allow the Overload & Brake Resistor Assemblies to Cool Down
- Remove Power From the Drive at the Disconnect Device
- Open Each Connection Box at Each Brake Resistor Assembly and Reset Each Overload Relay by Depressing the Reset Plunger Until a Click Is Either Heard or Felt
- Reapply Power & Cycle the Drive Stop/Start Pushbuttons or Contact

### IMPORTANT

Frequent tripping on **BRAKE OVER TEMP** may mean that the braking requirements imposed on the dynamic brake exceeds its design limits. Should frequent tripping occur, consult your nearest Allen-Bradley Area Sales/Support Center or representative for assistance.

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