



ALLEN-BRADLEY

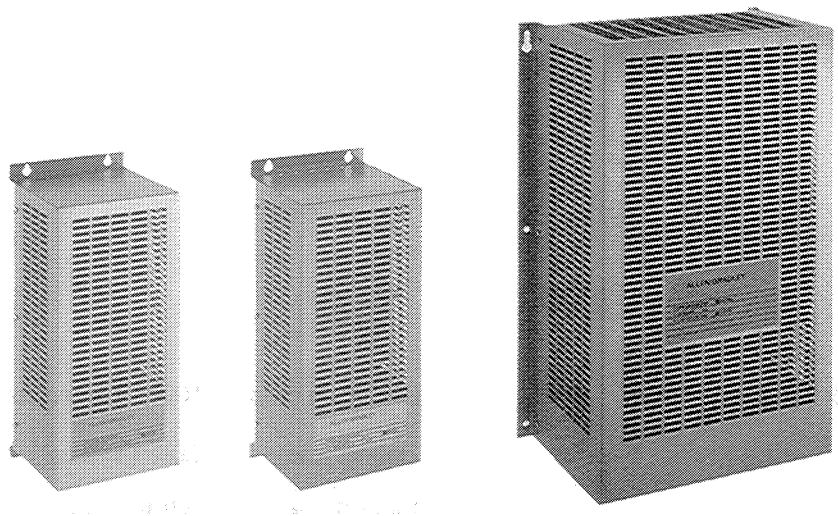
Allen-Bradley 1336/1336VT Heavy Duty Dynamic Braking

Cat. No. 1336-MOD-KB005

Cat. No. 1336-MOD-KB010

Cat. No. 1336-MOD-KB050

Installation Data



What This Option Provides

The Heavy Duty Dynamic Braking Option provides a self contained NEMA Type 1 enclosed assembly that is wired to the 1336 or 1336VT Drive. Dynamic braking increases the braking torque capability of either drive from approximately 20 to 100%.

What These Instructions Contain

These instructions contain the necessary information to install Heavy Duty Dynamic Braking. Dynamic Brakes KB005 and KB010 receive power directly from the drive, while Dynamic Brake KB050 has internal cooling fans and circuits that require an additional 115V AC user supply. All dynamic brakes must be mounted separately from the drive. Dynamic Brakes KB005 and KB010 are used for drive ratings B003-B005 and B007-B010 respectively, while Dynamic Brake KB050 may be used for drive ratings B040 and B060 as well as B050. For other drive ratings, dynamic brakes are combined to match drive braking requirements. When multiple brakes are used, interconnection wiring between the brakes is also required. Always refer to publication 1336-2.2 to determine what your dynamic braking application requires before proceeding.

Installation Data

Heavy Duty Dynamic Braking

Where This Option is Used

B003-B200 1336 Drives

B003-B250 1336VT Drives

Catalog Number Description

1336 - MOD - K

T

1336/1336VT

Heavy Duty Dynamic Braking

B

Voltage Rating

B = 380/415/460V AC

005

Brake Kit Code

005 = Drive Ratings B003-B005

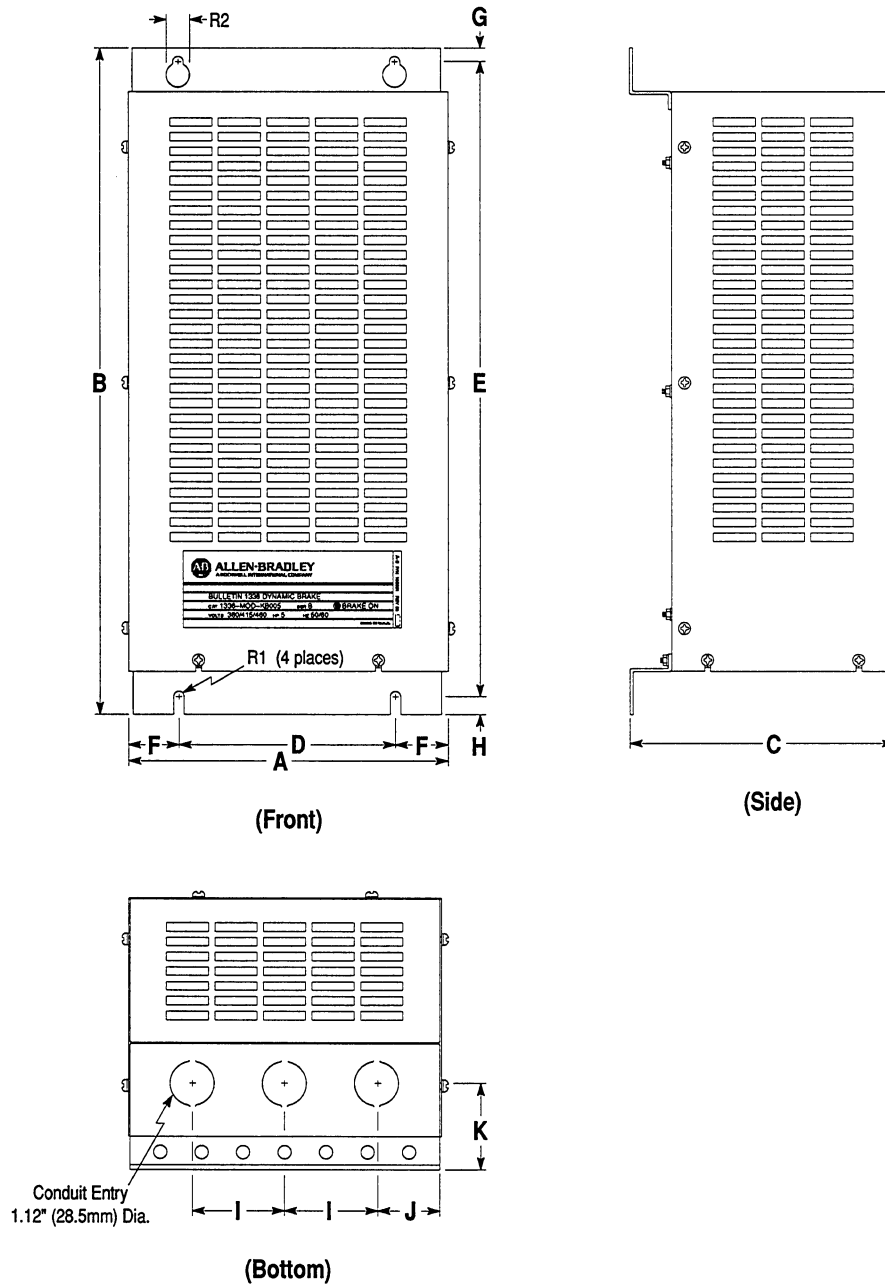
010 = Drive Ratings B007-B010

050 = Drive Ratings B040-B060

Specifications

Braking Torque	100% Torque for 20 Seconds (Typical)
Duty Cycle	20% (Typical)
Input Power	All Ratings — Power Supplied from DC Bus KB050 — Customer Supplied 115V AC, 1Ø, 50/60 Hz Power Required for Internal Cooling Fans
Temperature	-10°C to 50°C (14°F to 122°F)
Humidity	5% to 95% Non-Condensing
Atmosphere	Non-Corrosive/Non-Hazardous Dust, Vapor or Gas
Altitude	3,300 Feet (1,000 Meters) Maximum without Derating
Enclosure Type	NEMA Type 1 (IP20)

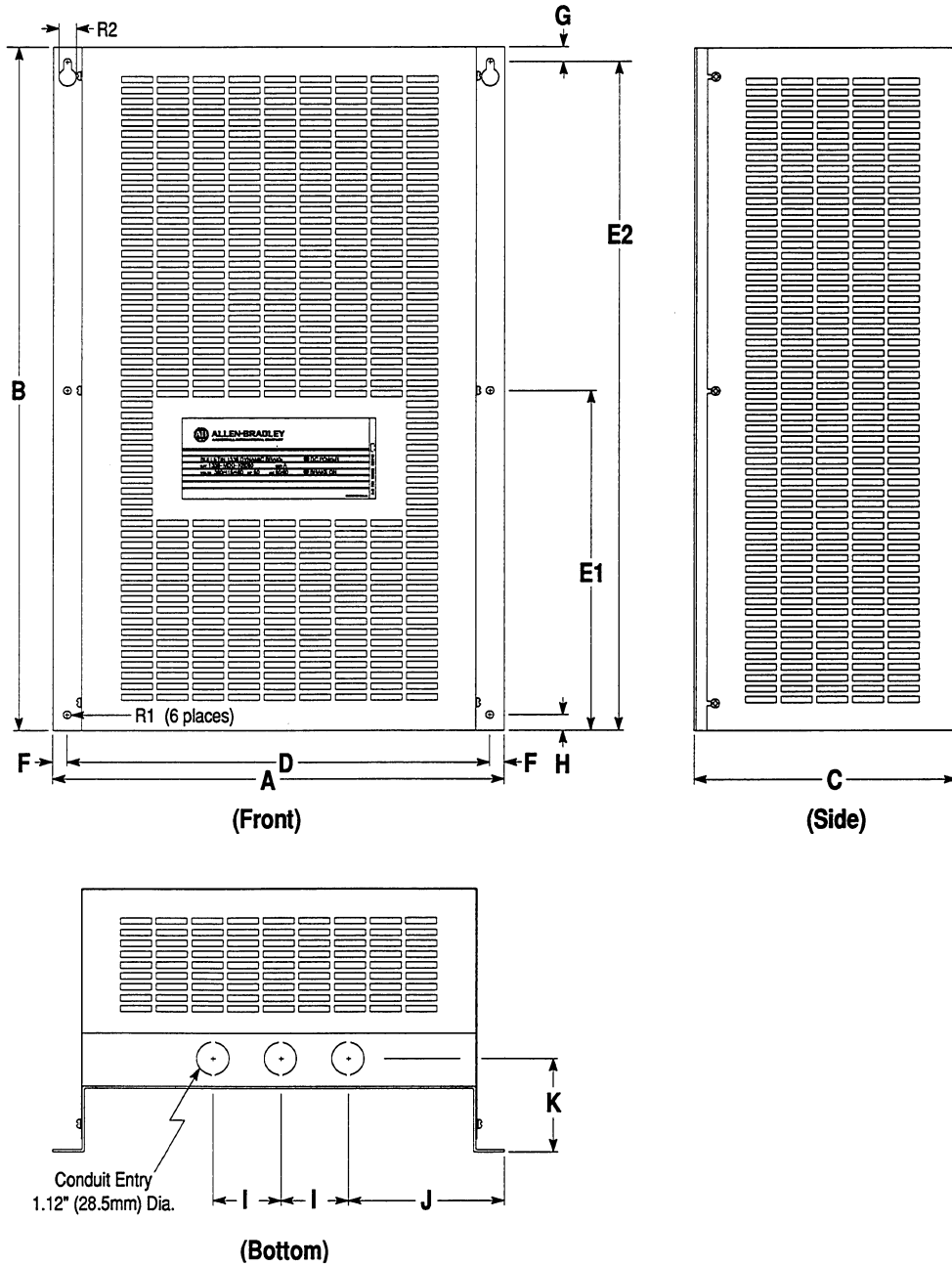
1336-MOD-KB005 and 1336-MOD-KB010 Dimensions



Dimensions and Weights in Inches (Millimeters) and Pounds (Kilograms)

Catalog Number	A	B	C	D	E	F	G	H	I	J	K	R1 diameter	R2 diameter	Weight
1336-MOD-KB005 and 1336-MOD-KB010	7.62 (193.5)	17.38 (441.4)	6.87 (174.5)	5.25 (133.4)	16.75 (425.4)	1.18 (30.0)	0.25 (6.4)	0.38 (9.7)	2.00 (50.8)	1.81 (46.0)	2.00 (50.8)	0.28 (7.1)	0.56 (14.3)	15.00 (6.8)

1336-MOD-KB050 Dimensions



Dimensions and Weights in Inches (Millimeters) and Pounds (Kilograms)

Catalog Number	A	B	C	D	E1	E2	F	G	H	I	J	K	R1 diameter	R2 diameter	Weight
1336-MOD-KB050	16.00 (406.4)	24.00 (609.6)	9.75 (247.7)	15.00 (381.0)	12.00 (304.8)	23.32 (592.3)	0.50 (12.7)	0.68 (17.3)	0.75 (19.1)	2.00 (50.8)	6.00 (152.4)	3.12 (79.3)	0.33 (8.4)	0.56 (14.3)	75.00 (33.8)

Operation

When a motor turns faster than the synchronous speed set by drive output frequency, the motor can generate power which is returned to the drive. Without heavy duty dynamic braking, power returned to the drive bus can cause bus voltage to rise above the rated limit of the drive. This condition can occur if power returned to the drive exceeds 20% of drive rating. Both the 1336 and 1336VT Drives have an overvoltage trip feature to detect this condition and shut down the drive if necessary.

When heavy duty dynamic braking is added to 1336 or 1336VT Drives, excessive power is dissipated in the brake resistors. Increased braking action (over 20%) can now take place and an overvoltage trip condition will not occur within the increased limits of the brake.

The dynamic brake monitors the drive DC bus. When the brake senses a rise in bus voltage and braking action is required, the brake will turn on. Turning on the brake adds resistors in parallel to the DC bus, providing a load to dissipate the motor power generated during braking. When the DC bus voltage is lowered to within acceptable limits and braking is no longer required, the dynamic brake will shut off and disconnect the brake resistors from the bus.

Dynamic brakes are designed to permit parallel operation when more than one brake is needed. Controls of the brake modules can be interconnected to each other to obtain the required braking load. One brake module becomes the master control module, while the others can be programmed through jumper selection and interconnection to be slave modules. Slave modules respond to a signal from the master brake module to switch on at the same time as the master module. Slave operation helps ensure that all brake modules operate at the same duty cycle. This helps minimize erratic operation and guards against excessive overheating of individual brakes.

The dynamic brake is designed to turn on only when required to dissipate excessive energy returned to the DC bus. Typically the brake should come on only during drive deceleration and stopping. The Brake On light on the front of the enclosure will be lit when the brake is on. For Dynamic Brake KB050, an additional DC Power light has been provided to indicate that the drive DC bus voltage is greater than 40V DC when lit. The dynamic brake Brake On light should not be lit during the following conditions:

- The Motor is Stopped (Deceleration is Complete)
- The Motor is Accelerating
- The Motor is At Speed without an Overhauling Load

If the Brake On light is lit during any of these conditions, improper brake operation is indicated. Contact your nearest Allen-Bradley Drives Distributor or Sales Office for assistance.

Setup

Drive parameter 11 — Decel Frequency Hold — must be set to 0 (OFF) when heavy duty dynamic braking is installed. Refer to your 1336 or 1336VT Programming Manual for programming procedures and record the changes for future reference.



WARNING: The heavy duty dynamic brake unit contains a thermostat to guard against overheating and component damage.

If the duty cycle, torque setting and/or ambient temperature exceeds the specifications listed in this publication, the thermostat is designed to trip and disable the braking units until components cool to rated temperature. Fault F05 at the drive (bus overvoltage) will normally indicate a dynamic brake trip. During the cooling period, only 20% braking torque will be available to the motor.

If reduced braking torque represents a potential hazard to personnel, auxiliary stopping methods must be considered in the machine and/or control circuit design.

Installation Requirements



WARNING: Electric shock can cause injury or death.

1. Dynamic Brake KB050 has internal cooling fans that require an additional 115V AC user supply. Remove all power before working on this product.
 2. Hazards of electrical shock exist if accidental contact is made with parts carrying bus voltage. A bus charged indicator on the drive and on the KB050 brake enclosure provides visual indication of the presence of bus voltage. Before proceeding with any installation or troubleshooting activity, allow at least one minute after input power has been removed to allow for the bus circuit to discharge. The bus voltage should be verified by using a voltmeter to measure voltage between the + DC and -DC terminals on the drive power terminal block. Do not attempt any servicing until both lights have extinguished and bus voltage has diminished to zero volts.
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Dynamic brake enclosures must be mounted and installed only in the vertical positions shown on pages 3 and 4. Select a location using the guidelines and information provided on the following pages.

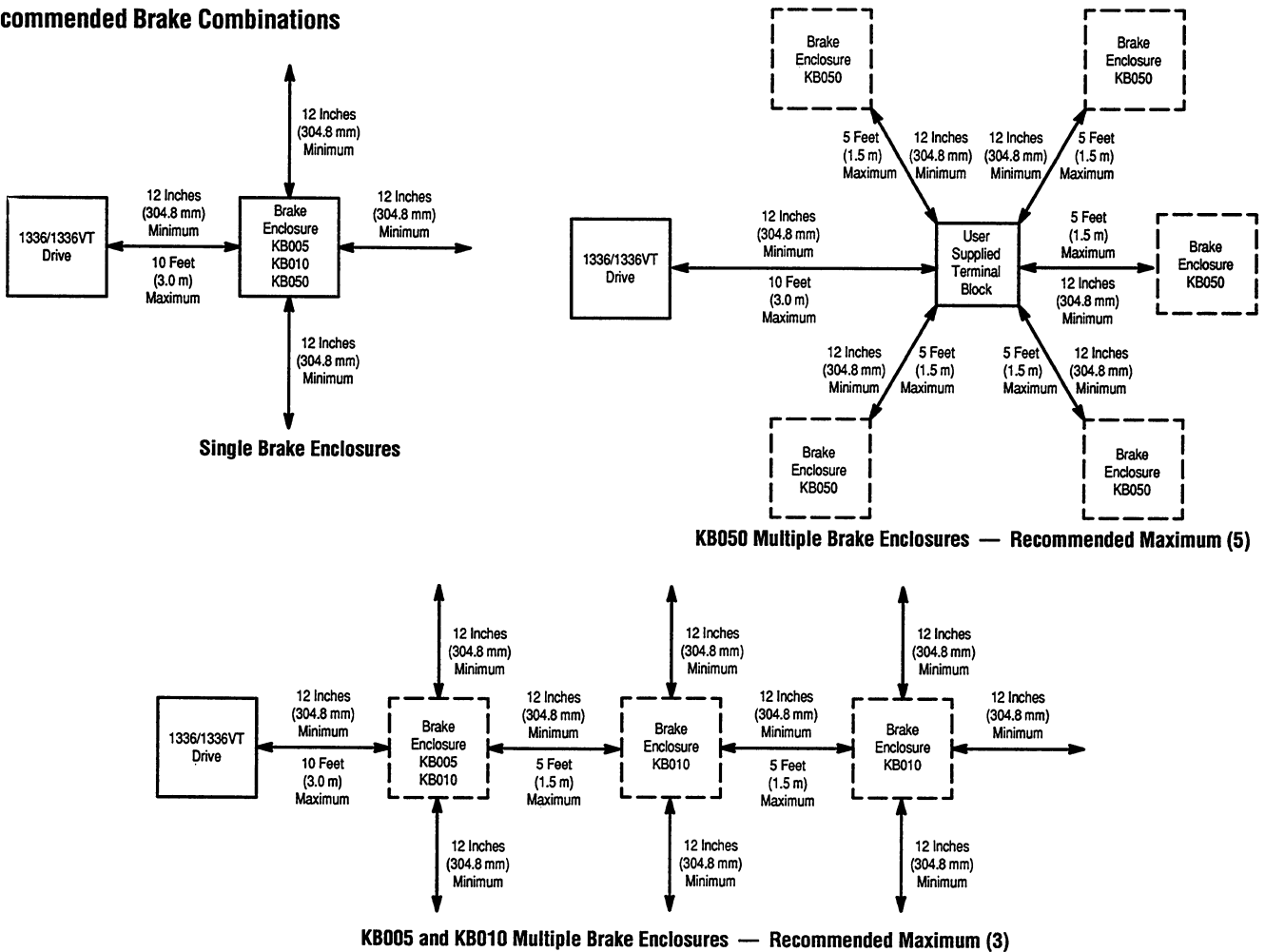
IMPORTANT: The National Electrical Code (NEC) and local regulations govern the installation and wiring of the Heavy Duty Dynamic Brake. DC power wiring, AC power wiring, control wiring and conduit must be sized and installed in accordance with these codes and the information supplied on the following pages.

Mounting Requirements

- Each dynamic brake enclosure must be mounted outside of any other enclosure or cabinet and exposed to unrestricted circulating air for proper heat dissipation. Allow a minimum of 12 inches (304.8 mm) between brake enclosures and all other enclosures or cabinets including the drive.

- Each enclosure must be mounted in an area where the environment does not exceed the values listed in the specification section of this publication.
- If only one dynamic brake enclosure is required, the enclosure must be mounted within 10 feet (3.0 m) of the drive.
- If more than one KB050 dynamic brake enclosure is required, a user supplied terminal block is also required. The terminal block must be mounted within 10 feet (3.0 m) of the drive. Allow a maximum distance of 5 feet (1.5 m) between each brake enclosure and the terminal block.
- If more than one KB005 or KB010 dynamic brake enclosure is required, the first enclosure must be mounted within 10 feet (3.0 m) of the drive. Allow a maximum distance of 5 feet (1.5 m) between each remaining brake enclosure.
- Separate conduit must be provided for the control connections between multiple brake enclosures.
- Separate conduit must be provided for the DC power connections between brake enclosures, the terminal block (if required) and the drive. For AC power connections, refer to the Wire Group Number Table in your 1336 or 1336VT Hardware User Manual.

Recommended Brake Combinations



Drive Ratings B003-B005

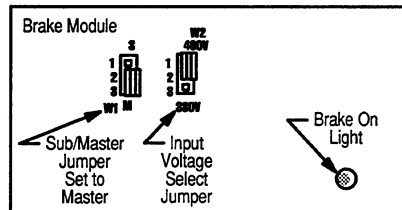
To provide the maximum amount of braking torque use
(1) Cat. No. 1336-MOD-KB005 Brake Kit.

Dynamic Brake Kit KB005 provides the maximum amount of braking torque that may be used for drives rated B003 or B005. Always refer to publication 1336-2.2 to determine what your dynamic braking application requires.

Installation

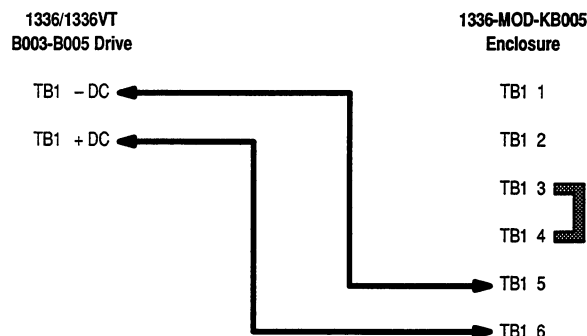
Dynamic Brake Kit KB005 has a single brake module mounted in the brake enclosure. The enclosure must be located within 10 feet (3.0 m) of the drive and have a minimum of 12 inches (304.8 mm) of air space around it for heat dissipation.

1336-MOD-KB005 Jumper Settings



The brake assembly has a sub/master jumper W1 located on the module that is factory set to master — between jumper positions 2 and 3. It must remain set to master for B003 or B005 drive operation. Jumper W2 must be set to correspond to the nominal input line voltage of the drive. Setting the jumper between positions 1 and 2 will select an input voltage of 415/460 volts. Setting the jumper between positions 2 and 3 will select an input voltage of 380 volts. Terminals 3 and 4 at TB1 are factory jumpered and must remain jumpered for B003 or B005 drive operation.

DC Power Wiring



Two DC power wires — #12 gauge minimum (4 mm²) — must be run through conduit between the drive and the brake.

Drive Ratings B007-B010

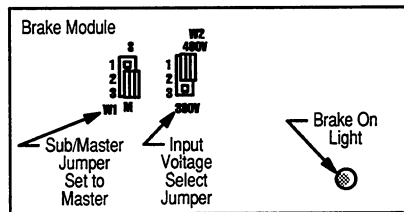
To provide the maximum amount of braking torque use
(1) Cat. No. 1336-MOD-KB010 Brake Kit.

Dynamic Brake Kit KB010 provides the maximum amount of braking torque that may be used for drives rated B007 or B010. Always refer to publication 1336-2.2 to determine what your dynamic braking application requires.

Installation

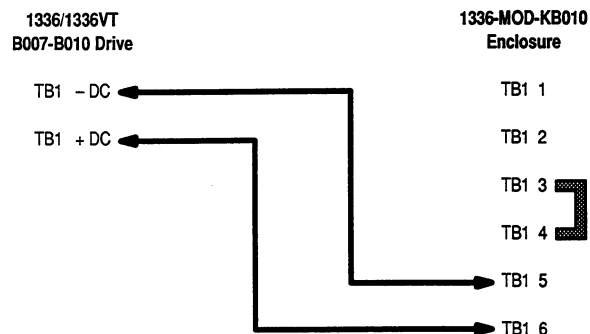
Dynamic Brake Kit KB010 has a single brake module mounted in the brake enclosure. The enclosure must be located within 10 feet (3.0 m) of the drive and have a minimum of 12 inches (304.8 mm) of air space around it for heat dissipation.

1336-MOD-KB010 Jumper Settings



The brake assembly has a sub/master jumper W1 located on the module that is factory set to master — between jumper positions 2 and 3. It must remain set to master for B007 or B010 drive operation. Jumper W2 must be set to correspond to the nominal input line voltage of the drive. Setting the jumper between positions 1 and 2 will select an input voltage of 415/460 volts. Setting the jumper between positions 2 and 3 will select an input voltage of 380 volts. Terminals 3 and 4 at TB1 are factory jumpered and must remain jumpered for B007 or B010 drive operation.

DC Power Wiring



Two DC power wires — #12 gauge minimum (4 mm²) — must be run through conduit between the drive and the brake.

Drive Rating B015

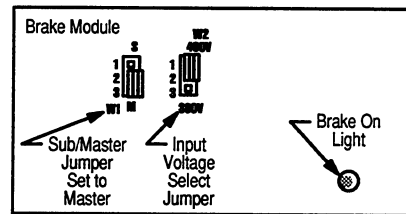
To provide the maximum amount of braking torque use
(1) Cat. No. 1336-MOD-KB005 Option Kit
(1) Cat. No. 1336-MOD-KB010 Option Kit.

Always refer to publication 1336-2.2 to determine what your dynamic braking application requires.

Installation

Each brake kit has a single brake module mounted in the brake enclosure. Each brake kit has a sub/master jumper W1 located on the brake module that is factory set to master. There can be only one master brake module to control dynamic braking. The other brake module must be reset to serve as a slave module — the module that will be controlled by the master brake module.

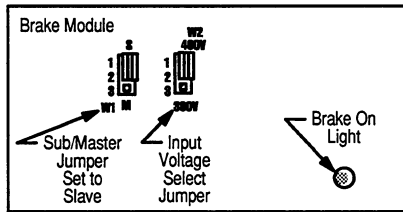
1336-MOD-KB005 Master Enclosure Jumper Settings



The master enclosure must be located within 10 feet (3.0 m) of the drive and have a minimum of 12 inches (304.8 mm) of air space around it for heat dissipation. Jumper W1 in the master enclosure is factory set to master — between jumper positions 2 and 3 — and must remain set to master for B015 drive operation. Jumper W2 must be set to correspond to the nominal input line voltage of the drive. Setting the jumper between positions 1 and 2 will select an input voltage of 415/460 volts. Setting the jumper between positions 2 and 3 will select an input voltage of 380 volts. Terminals 3 and 4 at TB1 in the master enclosure are factory jumpered. This jumper wire must be removed for B015 drive operation.

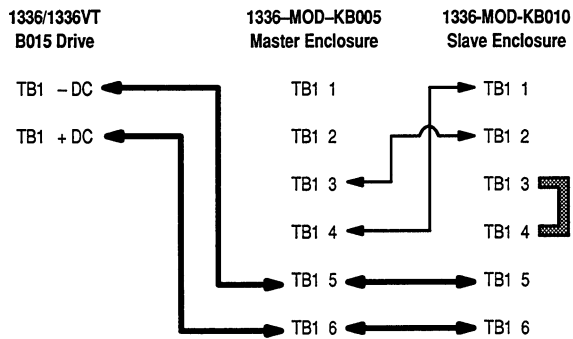
**Drive Rating B015
(continued)**

1336-MOD-KB010 Slave Enclosure Jumper Settings



Jumper W1 in the slave enclosure is also factory set to master. This jumper must be reset for slave operation — between jumper positions 1 and 2. Jumper W2 in this enclosure must be set to the drive input voltage as previously explained. The factory installed jumper wire between terminals 3 and 4 at TB1 in the slave enclosure must remain in place for B015 drive operation.

DC Power and Control Wiring



↔ DC power wiring must be run in conduit separate from control wiring. DC power wiring between the master and slave enclosures as well as between the master enclosure and the drive must be single pair, #12 gauge minimum (4 mm²).

↔ Control wiring must be run in conduit separate from power wiring. Interconnection control wiring between the brake enclosures must be twisted pair, #18 gauge minimum (1 mm²).

Drive Rating B020

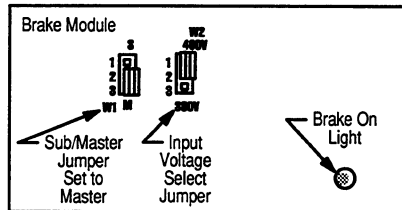
To provide the maximum amount of braking torque use
(2) Cat. No. 1336-MOD-KB010 Option Kits.

Always refer to publication 1336-2.2 to determine what your dynamic braking application requires.

Installation

Each brake kit has a single brake module mounted in the brake enclosure. Each brake kit has a sub/master jumper W1 located on the brake module that is factory set to master. There can be only one master brake module to control dynamic braking. The other brake module must be reset to serve as a slave module — the module that will be controlled by the master brake module.

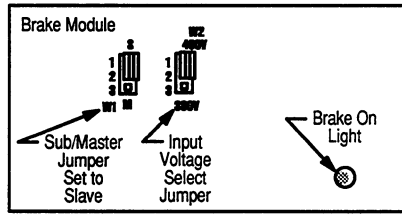
1336-MOD-KB010 Master Enclosure Jumper Settings



The master enclosure must be located within 10 feet (3.0 m) of the drive and have a minimum of 12 inches (304.8 mm) of air space around it for heat dissipation. Jumper W1 in the master enclosure is factory set to master — between jumper positions 2 and 3 — and must remain set to master for B020 drive operation. Jumper W2 must be set to correspond to the nominal input line voltage of the drive. Setting the jumper between positions 1 and 2 will select an input voltage of 415/460 volts. Setting the jumper between positions 2 and 3 will select an input voltage of 380 volts. Terminals 3 and 4 at TBI in the master enclosure are factory jumpered. This jumper wire must be removed for B020 drive operation.

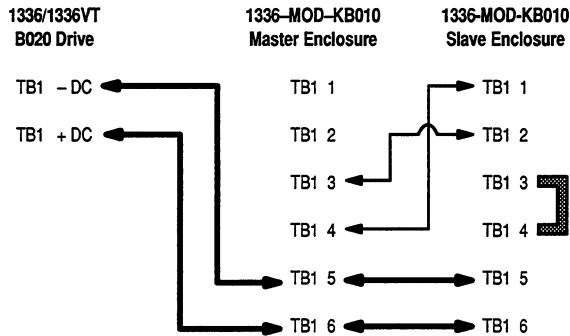
Drive Rating B020
(continued)

1336-MOD-KB010 Slave Enclosure Jumper Settings



Jumper W1 in the slave enclosure is also factory set to master. This jumper must be reset for slave operation — between jumper positions 1 and 2. Jumper W2 in this enclosure must be set to the drive input voltage as previously explained. The factory installed jumper wire between terminals 3 and 4 at TB1 in the slave enclosure must remain in place for B020 drive operation.

DC Power and Control Wiring



←→ DC power wiring must be run in conduit separate from control wiring. DC power wiring between the master and slave enclosures as well as between the master enclosure and the drive must be single pair, #12 gauge minimum (4 mm²).

←→ Control wiring must be run in conduit separate from power wiring. Interconnection control wiring between the brake enclosures must be twisted pair, #18 gauge minimum (1 mm²).

Drive Rating B025

To provide the maximum amount of braking torque use

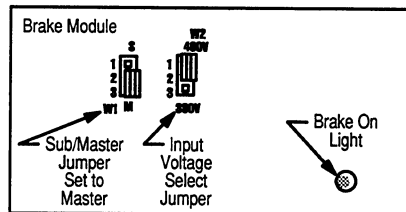
- (1) Cat. No. 1336-MOD-KB005 Option Kit
- (2) Cat. No. 1336-MOD-KB010 Option Kits.

Always refer to publication 1336-2.2 to determine what your dynamic braking application requires.

Installation

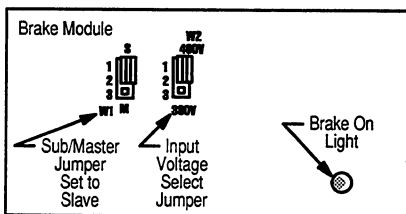
Each brake kit has a single brake module mounted in the brake enclosure. Each brake kit has a sub/master jumper W1 located on the brake module that is factory set to master. There can be only one master brake module to control dynamic braking. The other brake modules must be reset to serve as slave modules — modules that will be controlled by the master brake module.

1336-MOD-KB005 Master Enclosure Jumper Settings



The master enclosure must be located within 10 feet (3.0 m) of the drive and have a minimum of 12 inches (304.8 mm) of air space around it for heat dissipation. Jumper W1 in the master enclosure is factory set to master — between jumper positions 2 and 3 — and must remain set to master for B025 drive operation. Jumper W2 must be set to correspond to the nominal input line voltage of the drive. Setting the jumper between positions 1 and 2 will select an input voltage of 415/460 volts. Setting the jumper between positions 2 and 3 will select an input voltage of 380 volts. Terminals 3 and 4 at TBI in the master enclosure are factory jumpered. This jumper wire must be removed for B025 drive operation.

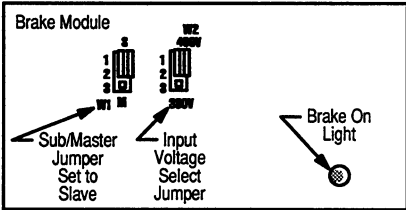
1336-MOD-KB010 Slave Enclosure #1 Jumper Settings



One of the slave enclosures must be located within 5 feet (1.5 m) of the master enclosure and have a minimum clearance of 12 inches (304.8 mm) around it for proper heat dissipation. Jumper W1 in the first slave enclosure is factory set to master. This jumper must be reset for slave operation — between jumper positions 1 and 2. Jumper W2 in this enclosure must also be set to the drive input voltage as previously explained. The factory installed jumper wire between terminals 3 and 4 at TBI in the first slave enclosure must be removed for B025 drive operation.

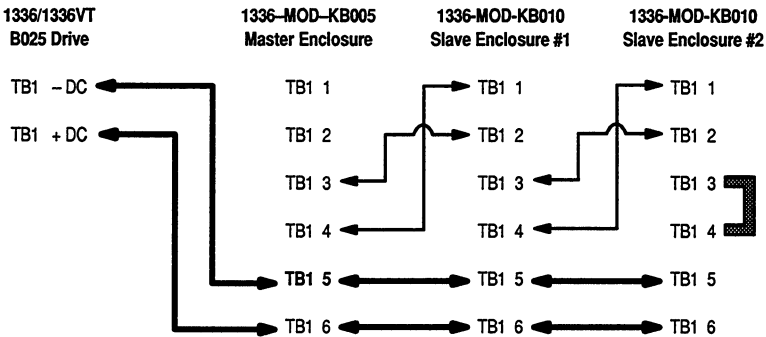
**Drive Rating B025
(continued)**

1336-MOD-KB010 Slave Enclosure #2 Jumper Settings



The second slave enclosure must be located within 5 feet (1.5 m) of the first slave enclosure and have a minimum clearance of 12 inches (304.8 mm) around it for proper heat dissipation. Jumper W1 in the second slave enclosure is also factory set to master. This jumper must be reset for slave operation — between jumper positions 1 and 2. Jumper W2 in this enclosure must be set to the drive input voltage as previously explained. The factory installed jumper wire between terminals 3 and 4 at TB1 in this slave enclosure must remain in place for B025 drive operation.

DC Power and Control Wiring



←→ DC power wiring must be run in conduit separate from control wiring. DC power wiring between each enclosure as well as between the master enclosure and the drive must be single pair, #12 gauge minimum (4 mm²).

←→ Control wiring must be run in conduit separate from power wiring. Interconnection control wiring between the brake enclosures must be twisted pair, #18 gauge minimum (1 mm²).

Drive Rating B030

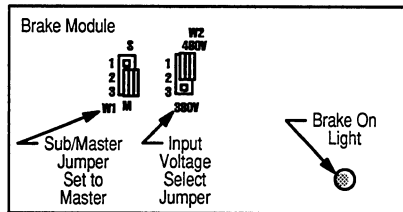
To provide the maximum amount of braking torque use
(3) Cat. No. 1336-MOD-KB010 Option Kits.

Always refer to publication 1336-2.2 to determine what your dynamic braking application requires.

Installation

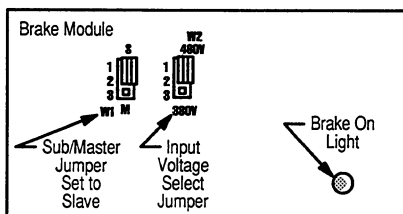
Each brake kit has a single brake module mounted in the brake enclosure. Each brake kit has a sub/master jumper W1 located on the brake module that is factory set to master. There can be only one master brake module to control dynamic braking. The other brake modules must be reset to serve as slave modules — modules that will be controlled by the master brake module.

1336-MOD-KB010 Master Enclosure Jumper Settings



The master enclosure must be located within 10 feet (3.0 m) of the drive and have a minimum of 12 inches (304.8 mm) of air space around it for heat dissipation. Jumper W1 in the master enclosure is factory set to master — between jumper positions 2 and 3 — and must remain set to master for B030 drive operation. Jumper W2 must be set to correspond to the nominal input line voltage of the drive. Setting the jumper between positions 1 and 2 will select an input voltage of 415/460 volts. Setting the jumper between positions 2 and 3 will select an input voltage of 380 volts. Terminals 3 and 4 at TBI in the master enclosure are factory jumpered. This jumper wire must be removed for B030 drive operation.

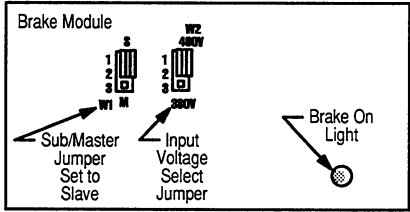
1336-MOD-KB010 Slave Enclosure #1 Jumper Settings



One of the slave enclosures must be located within 5 feet (1.5 m) of the master enclosure and have a minimum clearance of 12 inches (304.8 mm) around it for proper heat dissipation. Jumper W1 in the first slave enclosure is factory set to master. This jumper must be reset for slave operation — between jumper positions 1 and 2. Jumper W2 in this enclosure must also be set to the drive input voltage as previously explained. The factory installed jumper wire between terminals 3 and 4 at TBI in this slave enclosure must be removed for B030 drive operation.

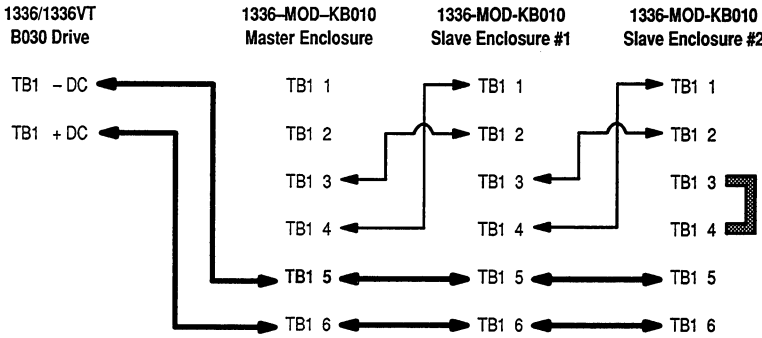
**Drive Rating B030
(continued)**

1336-MOD-KB010 Slave Enclosure #2 Jumper Settings



The second slave enclosure must be located within 5 feet (1.5 m) of the first slave enclosure and have a minimum clearance of 12 inches (304.8 mm) around it for proper heat dissipation. Jumper W1 in the second slave enclosure is also factory set to master. This jumper must be reset for slave operation — between jumper positions 1 and 2. Jumper W2 in this enclosure must be set to the drive input voltage as previously explained. The factory installed jumper wire between terminals 3 and 4 at TB1 in this slave enclosure must remain in place for B030 drive operation.

DC Power and Control Wiring



←→ DC power wiring must be run in conduit separate from control wiring. DC power wiring between each enclosure as well as between the master enclosure and the drive must be single pair, #12 gauge minimum (4 mm²).

←→ Control wiring must be run in conduit separate from power wiring. Interconnection control wiring between the brake enclosures must be twisted pair, #18 gauge minimum (1 mm²).

Drive Ratings B040-B060

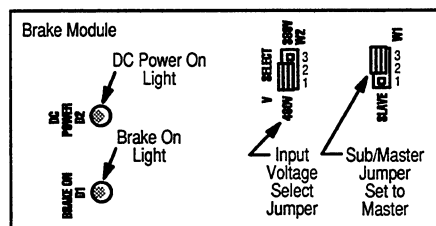
To provide the maximum amount of braking torque use
(1) Cat. No. 1336-MOD-KB050 Option Kit.

Dynamic Brake Kit KB050 provides the maximum amount of braking torque that may be used for drives rated B040 or B050 and the recommended amount of braking torque for drives rated B060. Always refer to publication 1336-2.2 to determine what your dynamic braking application requires.

Installation

Dynamic Brake Kit KB050 has a single brake module mounted in the brake enclosure. The enclosure must be located within 10 feet (3.0 m) of the drive and have a minimum of 12 inches (304.8 mm) of air space around it for heat dissipation.

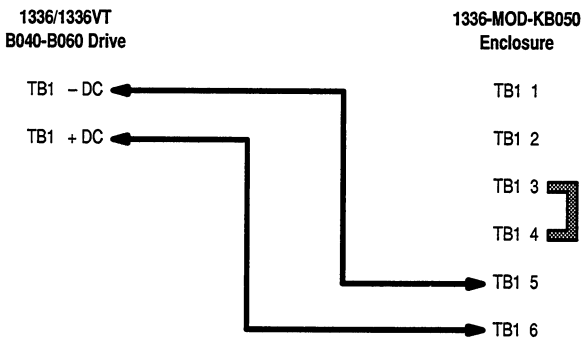
1336-MOD-KB050 Jumper Settings



The brake assembly has a sub/master jumper W1 located on the module that is factory set to master — between jumper positions 2 and 3. It must remain set to master for B040, B050 or B060 drive operation. Jumper W2 must be set to correspond to the nominal input line voltage of the drive. Setting the jumper between positions 1 and 2 will select an input voltage of 415/460 volts. Setting the jumper between positions 2 and 3 will select an input voltage of 380 volts. Terminals 3 and 4 at TB1 are factory jumpered and must remain jumpered for B040, B050 or B060 drive operation.

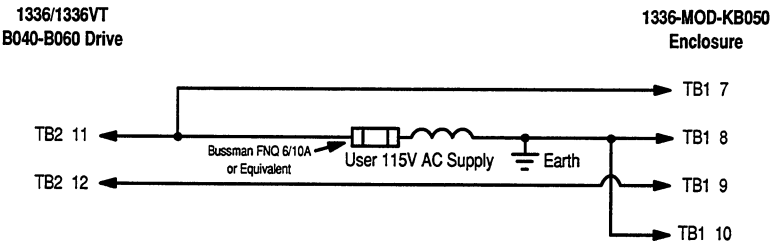
**Drive Ratings B040-B060
(continued)**

DC Power Wiring



Two DC power wires — #10 gauge minimum (6 mm²) — must be run through conduit between the drive and the brake.

AC Power Wiring



A separate user supplied 115V AC power supply is required for the brake enclosure fans. Refer to wire group #3 in the wire group number table of your 1336 or 1336VT Hardware User Manual for wire selection and installation details.

Drive Ratings B075-B100

To provide the maximum amount of braking torque use

(2) Cat. No. 1336-MOD-KB050 Option Kits

(1) User Supplied Terminal Block

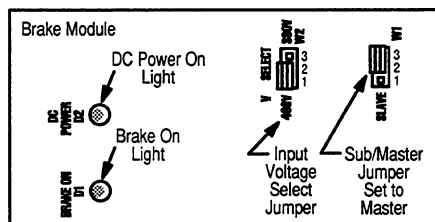
A-B 1492-PDM3141 or equivalent.

The (2) KB050 Dynamic Brake Kits required for drive rating B100 may also be used for drives rated B075 to provide increased braking torque. This is the maximum amount of braking torque that may be used for drives rated B100 or B075. Always refer to publication 1336-2.2 to determine what your dynamic braking application requires.

Installation

The user supplied terminal block must be located within 10 feet (3.0 m) of the drive. Each brake enclosure must be located within 5 feet (1.5 m) of the terminal block and have a minimum of 12 inches (304.8 mm) of air space around it for heat dissipation. Each brake kit has a single brake module mounted in the brake enclosure. Each brake kit has a sub/master jumper W1 located on the brake module that is factory set to master. There can be only one master brake module to control dynamic braking. The other brake module must be reset to serve as a slave module — the module that will be controlled by the master brake module.

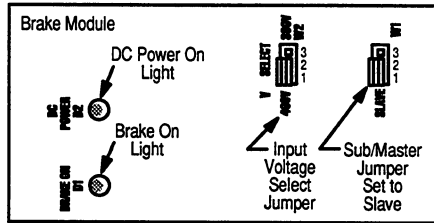
1336-MOD-KB050 Master Enclosure Jumper Settings



Jumper W1 in the master enclosure is factory set to master — between jumper positions 2 and 3 — and must remain set to master for B075 or B100 drive operation. Jumper W2 must be set to correspond to the nominal input line voltage of the drive. Setting the jumper between positions 1 and 2 will select an input voltage of 415/460 volts. Setting the jumper between positions 2 and 3 will select an input voltage of 380 volts. Terminals 3 and 4 at TBl in the master enclosure are factory jumpered. This jumper wire must be removed for B075 or B100 drive operation.

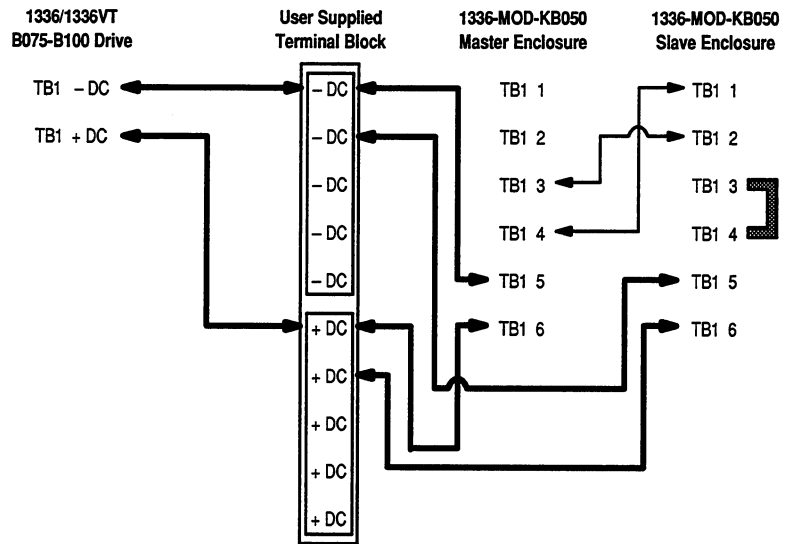
**Drive Ratings B075-B100
(continued)**

1336-MOD-KB050 Slave Enclosure Jumper Settings



Jumper W1 in the slave enclosure is also factory set to master. This jumper must be reset for slave operation — between jumper positions 1 and 2. Jumper W2 in this enclosure must be set to the drive input voltage as previously explained. The factory installed jumper wire between terminals 3 and 4 at TB1 in the slave enclosure must remain in place for B075 or B100 drive operation.

DC Power and Control Wiring



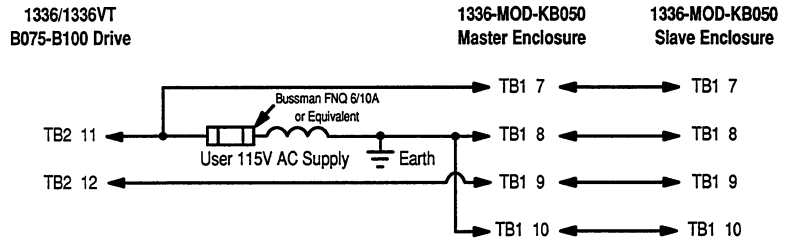
↔ DC power wiring must be run in conduit separate from control wiring. DC power wiring between the terminal block and the drive must be single pair, #6 gauge minimum (16 mm²). DC power wiring between each enclosure and the terminal block must be single pair, #10 gauge minimum (6 mm²).

↔ Control wiring must be run in conduit separate from power wiring. Interconnection control wiring between the brake enclosures must be twisted pair, #18 gauge minimum (1 mm²).

Installation Data
 Heavy Duty Dynamic Braking

**Drive Ratings B075-B100
 (continued)**

AC Power Wiring



A separate user supplied 115V AC power supply is required for the brake enclosure fans. Refer to wire group #3 in the wire group number table of your 1336 or 1336VT Hardware User Manual for wire selection and installation details.

Drive Ratings B125-B150

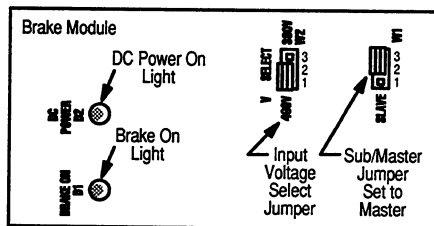
To provide the maximum amount of braking torque use
(3) Cat. No. 1336-MOD-KB050 Option Kits
(1) User Supplied Terminal Block
A-B 1492-PDM3141 or equivalent.

The (3) KB050 Dynamic Brake Kits required for drive rating B150 may also be used for drives rated B125 to provide increased braking torque. This is the maximum amount of braking torque that may be used for drives rated B125 or B150. Always refer to publication 1336-2.2 to determine what your dynamic braking application requires.

Installation

The user supplied terminal block must be located within 10 feet (3.0 m) of the drive. Each brake enclosure must be located within 5 feet (1.5 m) of the terminal block and have a minimum of 12 inches (304.8 mm) of air space around it for heat dissipation. Each brake kit has a single brake module mounted in the brake enclosure. Each brake kit has a sub/master jumper W1 located on the brake module that is factory set to master. There can be only one master brake module to control dynamic braking. The other brake modules must be reset to serve as slave modules — modules that will be controlled by the master brake module.

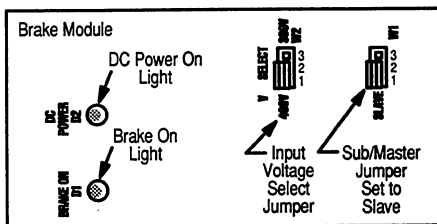
1336-MOD-KB050 Master Enclosure Jumper Settings



Jumper W1 in the master enclosure is factory set to master — between jumper positions 2 and 3 — and must remain set to master for B125 or B150 drive operation. Jumper W2 must be set to correspond to the nominal input line voltage of the drive. Setting the jumper between positions 1 and 2 will select an input voltage of 415/460 volts. Setting the jumper between positions 2 and 3 will select an input voltage of 380 volts. Terminals 3 and 4 at TBI in the master enclosure are factory jumpered. This jumper wire must be removed for B125 or B150 drive operation.

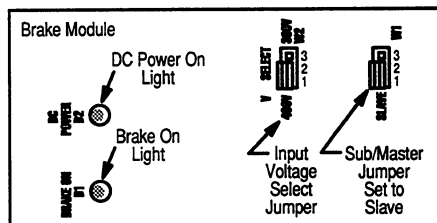
**Drive Ratings B125-B150
 (continued)**

1336-MOD-KB050 Slave Enclosure #1 Jumper Settings



Jumper W1 in the first slave enclosure is factory set to master. This jumper must be reset for slave operation — between jumper positions 1 and 2. Jumper W2 in this enclosure must be set to the drive input voltage as previously explained. The factory installed jumper wire between terminals 3 and 4 at TBI in this slave enclosure must also be removed for B125 or B150 drive operation.

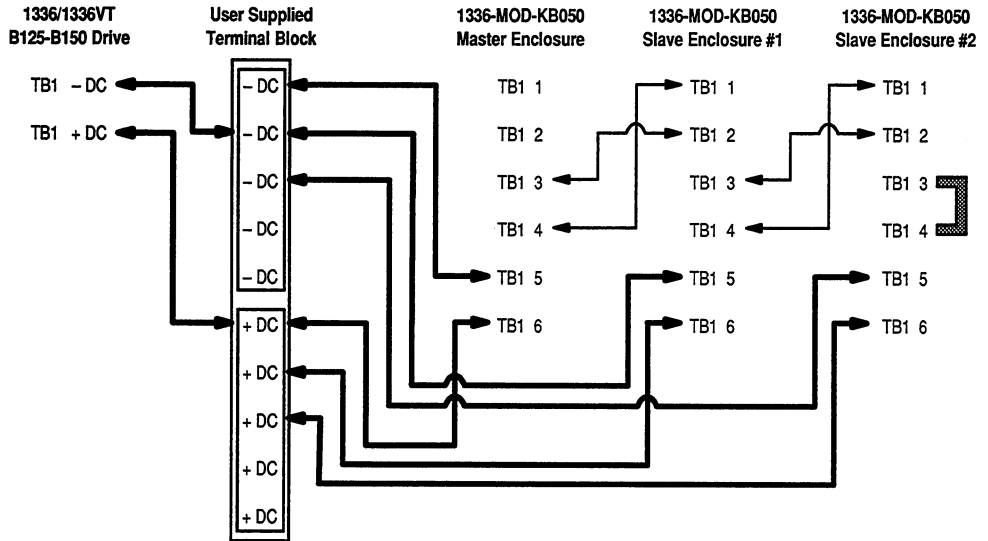
1336-MOD-KB050 Slave Enclosure #2 Jumper Settings



Jumper W1 in the second slave enclosure is factory set to master. This jumper must be reset for slave operation — between jumper positions 1 and 2. Jumper W2 in this enclosure must be set to the drive input voltage as previously explained. The factory installed jumper wire between terminals 3 and 4 at TBI in this slave enclosure must remain in place for B125 or B150 drive operation.

**Drive Ratings B125-B150
(continued)**

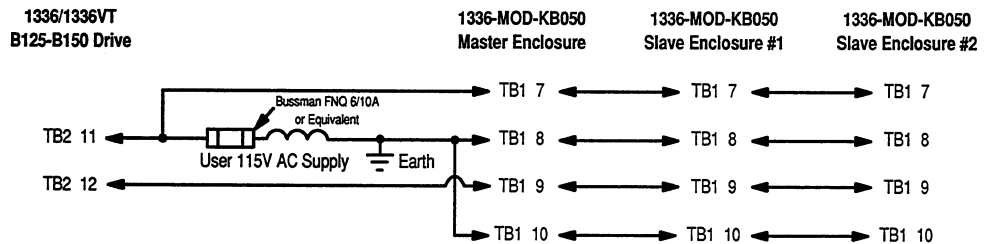
DC Power and Control Wiring



DC power wiring must be run in conduit separate from control wiring. DC power wiring between the terminal block and the drive must be single pair, #3 gauge minimum (25 mm²). DC power wiring between each enclosure and the terminal block must be single pair, #10 gauge minimum (6 mm²).

Control wiring must be run in conduit separate from power wiring. Interconnection control wiring between the brake enclosures must be twisted pair, #18 gauge minimum (1 mm²).

AC Power Wiring



A separate user supplied 115V AC power supply is required for the brake enclosure fans. Refer to wire group #3 in the wire group number table of your 1336 or 1336VT Hardware User Manual for wire selection and installation details.

Drive Rating B200

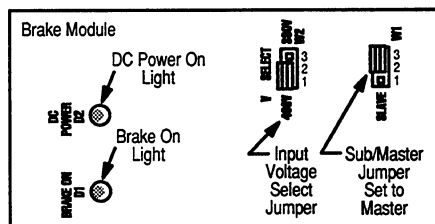
To provide the maximum amount of braking torque use
(4) Cat. No. 1336-MOD-KB050 Option Kits
(1) User Supplied Terminal Block
A-B 1492-PDM3141 or equivalent.

This is the maximum amount of braking torque that may be used for drives rated B200. Always refer to publication 1336-2.2 to determine what your dynamic braking application requires.

Installation

The user supplied terminal block must be located within 10 feet (3.0 m) of the drive. Each brake enclosure must be located within 5 feet (1.5 m) of the terminal block and have a minimum of 12 inches (304.8 mm) of air space around it for heat dissipation. Each brake kit has a single brake module mounted in the brake enclosure. Each brake kit has a sub/master jumper W1 located on the brake module that is factory set to master. There can be only one master brake module to control dynamic braking. The other brake modules must be reset to serve as slave modules — modules that will be controlled by the master brake module.

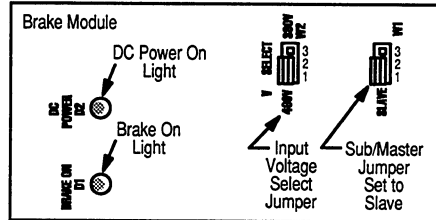
1336-MOD-KB050 Master Enclosure Jumper Settings



Jumper W1 in the master enclosure is factory set to master — between jumper positions 2 and 3 — and must remain set to master for B200 drive operation. Jumper W2 must be set to correspond to the nominal input line voltage of the drive. Setting the jumper between positions 1 and 2 will select an input voltage of 415/460 volts. Setting the jumper between positions 2 and 3 will select an input voltage of 380 volts. Terminals 3 and 4 at TB1 in the master enclosure are factory jumpered. This jumper wire must be removed for B200 drive operation.

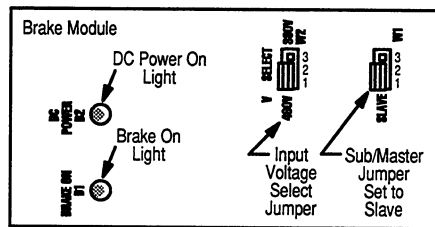
**Drive Rating B200
(continued)**

1336-MOD-KB050 Slave Enclosure #1 Jumper Settings



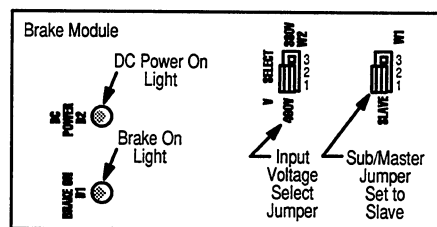
Jumper W1 in the first slave enclosure is factory set to master. This jumper must be reset for slave operation — between jumper positions 1 and 2. Jumper W2 in this enclosure must be set to the drive input voltage as previously explained. The factory installed jumper wire between terminals 3 and 4 at TBI in this slave enclosure must also be removed for B200 drive operation.

1336-MOD-KB050 Slave Enclosure #2 Jumper Settings



Jumper W1 in the second slave enclosure is factory set to master. This jumper must be reset for slave operation — between jumper positions 1 and 2. Jumper W2 in this enclosure must be set to the drive input voltage as previously explained. The factory installed jumper wire between terminals 3 and 4 at TBI in this slave enclosure must also be removed for B200 drive operation.

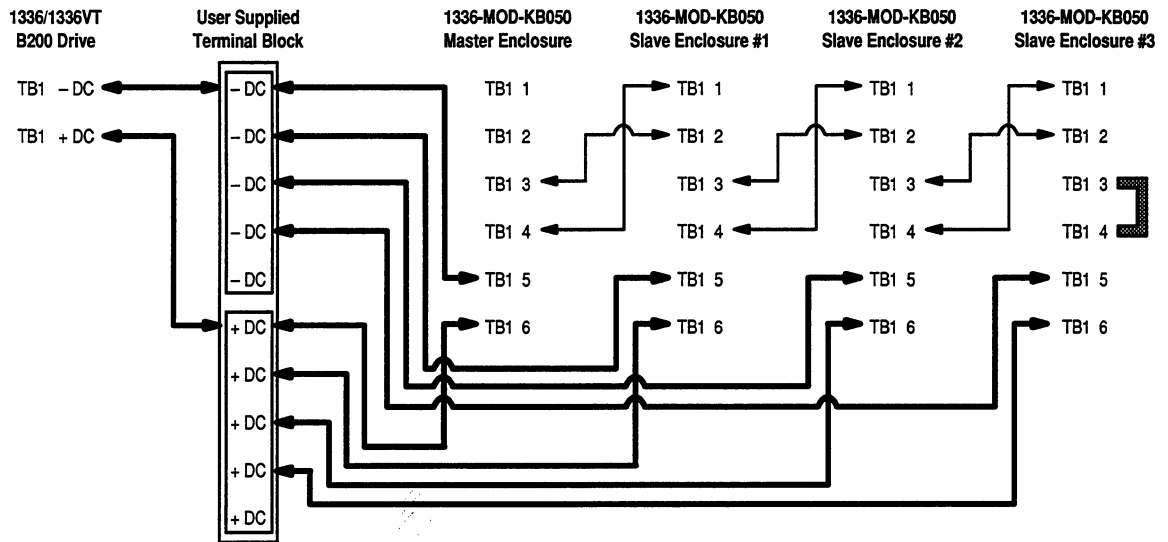
1336-MOD-KB050 Slave Enclosure #3 Jumper Settings



Jumper W1 in the third slave enclosure is factory set to master. This jumper must be reset for slave operation — between jumper positions 1 and 2. Jumper W2 in this enclosure must be set to the drive input voltage as previously explained. The factory installed jumper wire between terminals 3 and 4 at TBI in this slave enclosure must remain in place for B200 drive operation.

**Drive Rating B200
(continued)**

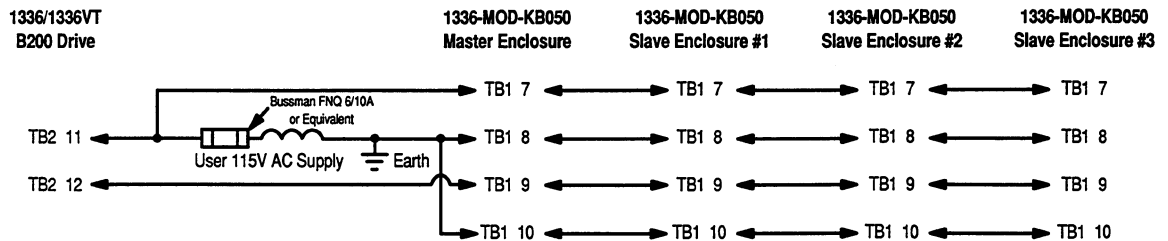
DC Power and Control Wiring



DC power wiring must be run in conduit separate from control wiring. DC power wiring between the terminal block and the drive must be single pair, #1 gauge minimum (50 mm²). DC power wiring between each enclosure and the terminal block must be single pair, #10 gauge minimum (6 mm²).

Control wiring must be run in conduit separate from power wiring. Interconnection control wiring between the brake enclosures must be twisted pair, #18 gauge minimum (1 mm²).

AC Power Wiring



A separate user supplied 115V AC power supply is required for the brake enclosure fans. Refer to wire group #3 in the wire group number table of your 1336 or 1336VT Hardware User Manual for wire selection and installation details.

Drive Rating B250

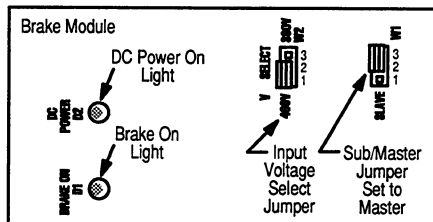
To provide the maximum amount of braking torque use
(5) Cat. No. 1336-MOD-KB050 Option Kits
(1) User Supplied Terminal Block
A-B 1492-PDM3141 or equivalent.

This is the maximum amount of braking torque that may be used for drives rated B250. Always refer to publication 1336-2.2 to determine what your dynamic braking application requires.

Installation

The user supplied terminal block must be located within 10 feet (3.0 m) of the drive. Each brake enclosure must be located within 5 feet (1.5 m) of the terminal block and have a minimum of 12 inches (304.8 mm) of air space around it for heat dissipation. Each brake kit has a single brake module mounted in the brake enclosure. Each brake kit has a sub/master jumper W1 located on the brake module that is factory set to master. There can be only one master brake module to control dynamic braking. The other brake modules must be reset to serve as slave modules — modules that will be controlled by the master brake module.

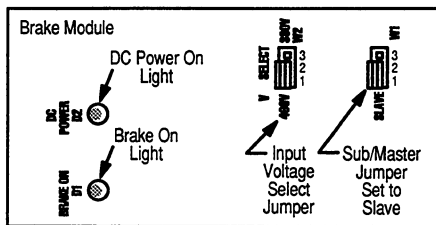
1336-MOD-KB050 Master Enclosure Jumper Settings



Jumper W1 in the master enclosure is factory set to master — between jumper positions 2 and 3 — and must remain set to master for B250 drive operation. Jumper W2 must be set to correspond to the nominal input line voltage of the drive. Setting the jumper between positions 1 and 2 will select an input voltage of 415/460 volts. Setting the jumper between positions 2 and 3 will select an input voltage of 380 volts. Terminals 3 and 4 at TBl in the master enclosure are factory jumpered. This jumper wire must be removed for B250 drive operation.

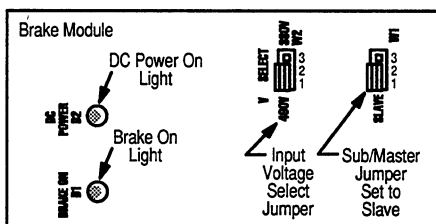
**Drive Rating B250
(continued)**

1336-MOD-KB050 Slave Enclosure #1 Jumper Settings



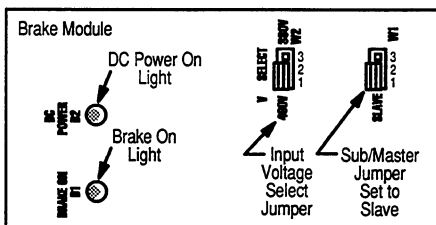
Jumper W1 in the first slave enclosure is factory set to master. This jumper must be reset for slave operation — between jumper positions 1 and 2. Jumper W2 in this enclosure must be set to the drive input voltage as previously explained. The factory installed jumper wire between terminals 3 and 4 at TBI in this slave enclosure must also be removed for B250 drive operation.

1336-MOD-KB050 Slave Enclosure #2 Jumper Settings



Jumper W1 in the second slave enclosure is factory set to master. This jumper must be reset for slave operation — between jumper positions 1 and 2. Jumper W2 in this enclosure must be set to the drive input voltage as previously explained. The factory installed jumper wire between terminals 3 and 4 at TBI in this slave enclosure must also be removed for B250 drive operation.

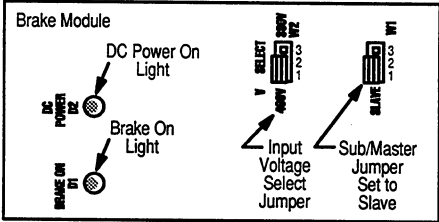
1336-MOD-KB050 Slave Enclosure #3 Jumper Settings



Jumper W1 in the third slave enclosure is factory set to master. This jumper must be reset for slave operation — between jumper positions 1 and 2. Jumper W2 in this enclosure must be set to the drive input voltage as previously explained. The factory installed jumper wire between terminals 3 and 4 at TBI in this slave enclosure must also be removed for B250 drive operation.

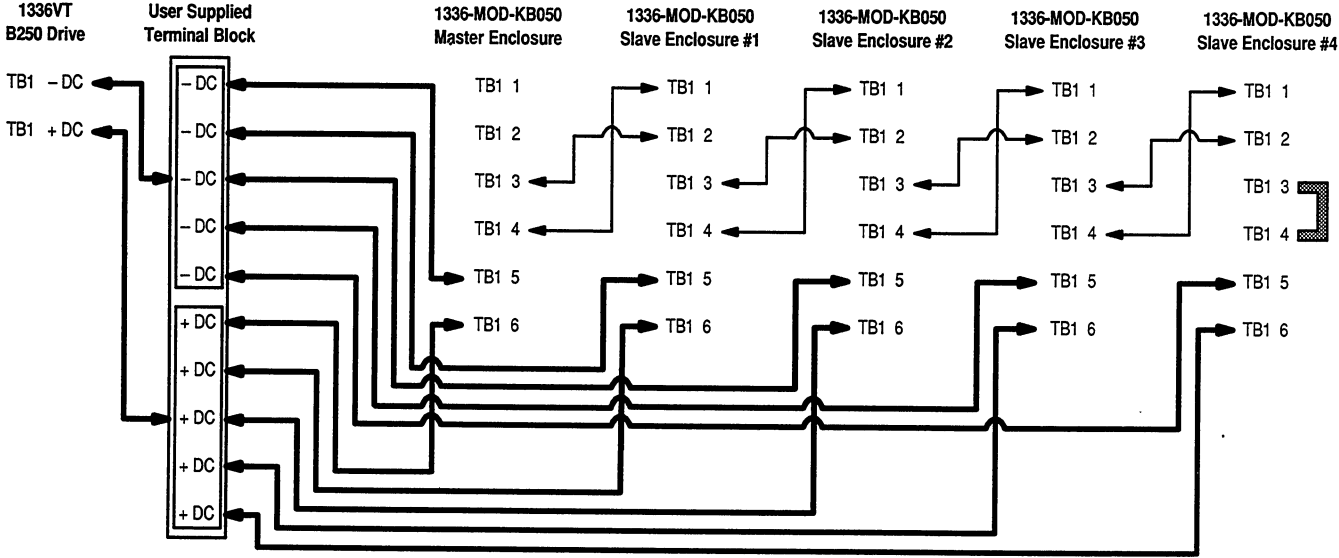
**Drive Rating B250
(continued)**

1336-MOD-KB050 Slave Enclosure #4 Jumper Settings



Jumper W1 in the fourth slave enclosure is factory set to master. This jumper must be reset for slave operation — between jumper positions 1 and 2. Jumper W2 in this enclosure must be set to the drive input voltage as previously explained. The factory installed jumper wire between terminals 3 and 4 at TB1 in this slave enclosure must remain in place for B250 drive operation.

DC Power and Control Wiring

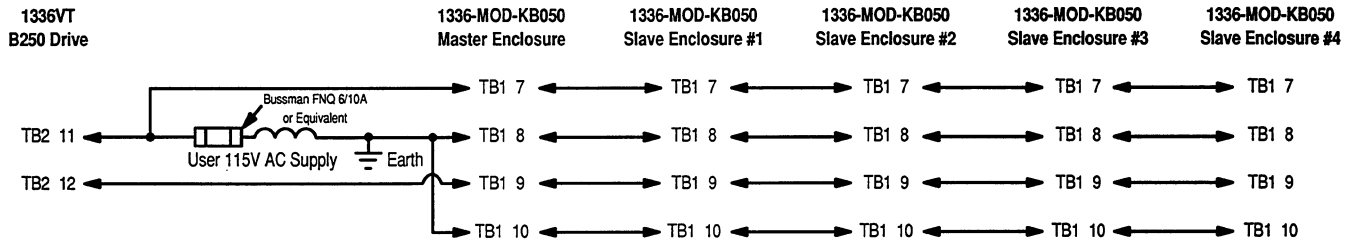


←→ DC power wiring must be run in conduit separate from control wiring. DC power wiring between the terminal block and the drive must be single pair, #00 gauge minimum (70 mm²). DC power wiring between each enclosure and the terminal block must be single pair, #10 gauge minimum (6 mm²).

←→ Control wiring must be run in conduit separate from power wiring. Interconnection control wiring between the brake enclosures must be twisted pair, #18 gauge minimum (1 mm²).

Drive Rating B250 (continued)

AC Power Wiring



A separate user supplied 115V AC power supply is required for the brake enclosure fans. Refer to wire group #3 in the wire group number table of your 1336VT Hardware User Manual for wire selection and installation details.



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