

Multipulse Bridge Assembly Parts Kits

Contents

These instructions cover front end component replacements on 1336 PLUS II drives and 1336 IMPACT H frame drives with Multipulse bridge assemblies.

Description	Page
Snubber Board Replacement	1.1
Diode Replacement	1.3
Fan Replacement	1.6
Thermal Switch Replacement	1.8

To reference spare parts see pg. 1-10

To reference replacement parts see pg 1-12

Snubber Board Replacement Kit

Where This Kit Is Used

Snubber Board Replacement Kit (Part Numbers 304470 (AC), 304469, 304468 (DC)) - You can use this kit to replace the snubber boards that are located on the side of the AC Diode bridge heatsink assembly

Table 1.1. Snubber Board Part Numbers.

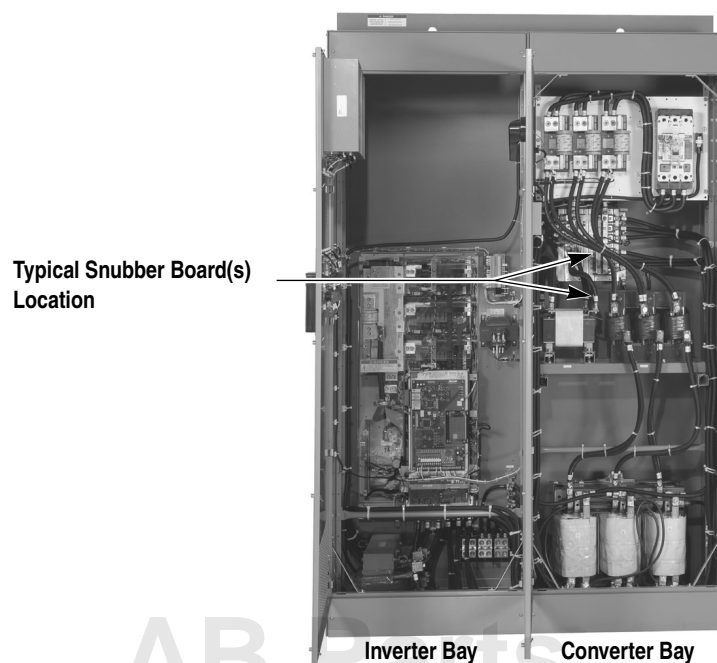
Replacement Kit Number	Vendor No.
1336 - SN-SP7B	20849
1336 - SN-SP8B	21032
1336 -SN-SP9B	13960

What This Kit Contains

This kit contains snubber board (s) and these instructions. Note: Number of snubber boards varies according to kit number.

Locating the Snubber Board(s)

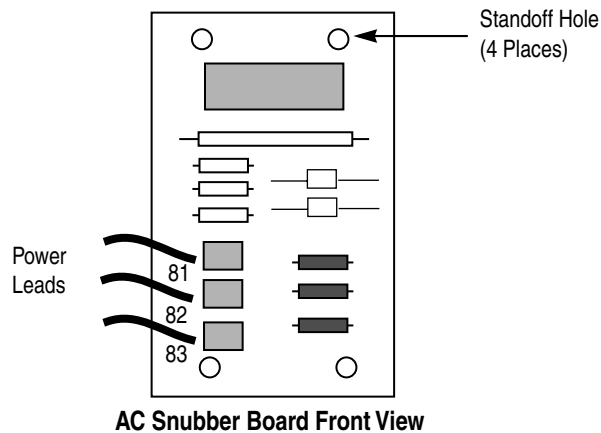
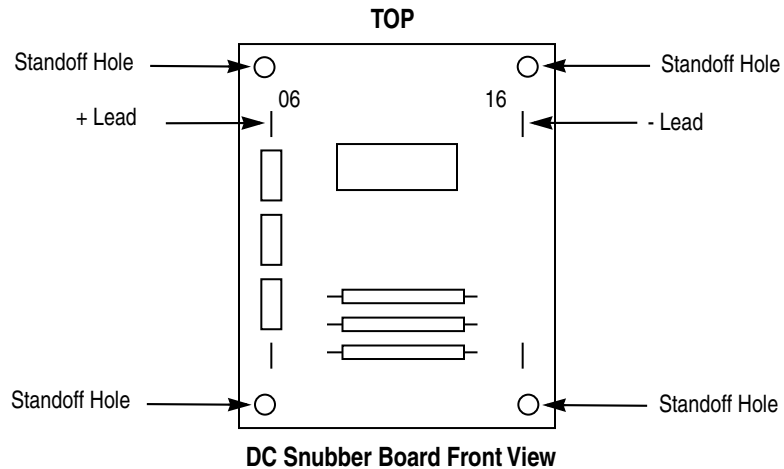
The snubber boards are located on the side of the bridge heatsink in the converter bay of your drive. The location of the converter bay will vary from system to system.



Replacing the Snubber Board(s)



ATTENTION: Disconnect and lock out power from the system before disassembling the bridge. Failure to disconnect power may result in death or serious injury. Verify bus voltage by measuring the voltage between +DC and –DC on terminal block TB1 located at the bottom of the 1336 Drive in the inverter bay. Do not attempt to service the drive until the bus voltage has discharged to zero volts.



1. Remove and tag the leads at the + (06) and – (16) stab-on connections on the DC snubber board. Remove the leads at stab-on connectors 81, 82 and 83 on AC snubber boards.
2. Snap the old board up off the four plastic standoffs and remove.
3. Orient the new board with the stab-on connectors 06 and 16 at the top (DC boards) or stab-on connectors 81, 82 and 83 in the lower left (AC boards) and snap into place on the plastic standoffs.
4. Reconnect the leads.

Converter Diode Replacement Kit

Where This Kit Is Used

You can use this kit to replace any of the converter diodes that are located in the converter bay of your 1336 PLUS II Multipulse or H-Frame 1336 IMPACT drive.

Diodes covered by these instructions are listed in the following table:

Table 1.2. Converter Diode Part Numbers

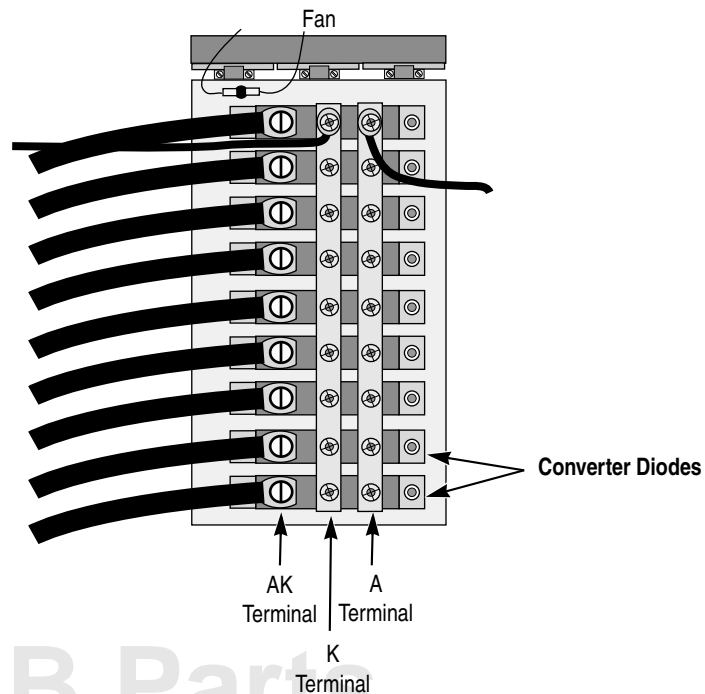
Replacement Kit No.	Vendor Component Part No.
1336-BD-SP1A	DD89N16K
1336-BD-SP2A	DD104N16K
1336-BD-SP3A	DD151N16K
1336-BD-SP4A	DD260N16K
1336-BD-SP5A	DD350N16K
1336-BD-SP6A	DD600N18K
1336-BD-SP7A	DZ1070N18K
1336-BD-SP8A	DD2228N16T
1336-BD-SP9A	ND89N16K
1336-BD-SP10A	ND171N16K
1336-BD-SP11A	ND260N16K
1336-BD-SP12A	DZ600N16K

What This Kit Contains

This kit contains a replacement converter diode and these instructions. This kit does Not contain the thermal compound Required to mount a new diode.

Locating the Converter Diodes

The converter diodes are located on the Multipulse bridge heatsink assembly in the converter bay of your drive. A typical heatsink assembly is shown in the following illustration. Converter diode locations may vary on some models.



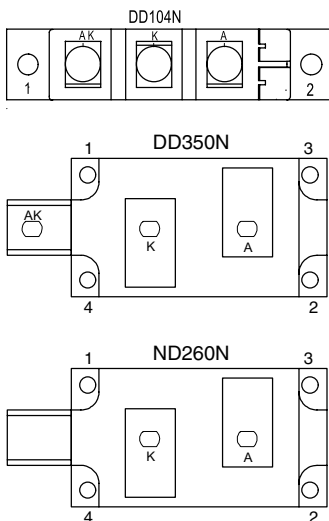
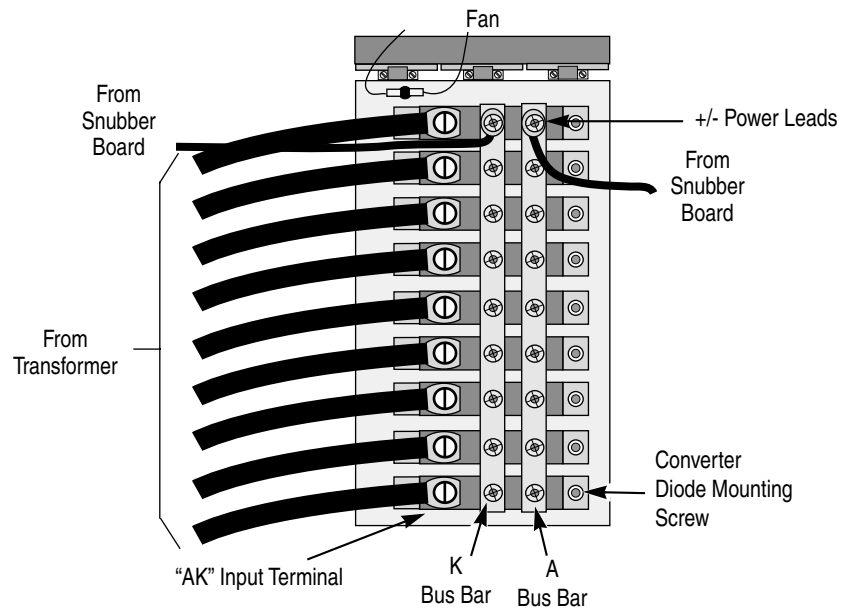
Replacing the Converter Diode(s)

To replace the converter diode(s), follow these steps:



ATTENTION: Disconnect and lock out power from the system before disassembling the bridge. Failure to disconnect power may result in death or serious injury. Verify bus voltage by measuring the voltage between +DC and -DC on terminal block TB1 located at the bottom of the 1336 Drive in the Inverter Bay. Do not attempt to service the drive until the bus voltage has discharged to zero volts.

1. Remove the power leads to + and -bus bars at the connection points at the top of the bus bars.
2. Remove the + / - bus bars that are over the converter diode by removing all the screws at the “A” and “K” mounting points on each diode.



3. Remove the “AK” input terminal from the converter diode you will be replacing. Tag leads if you are replacing more than one diode.
4. Remove the mounting screws from the converter diode. The diode will have two or four mounting screws depending on the model. For example: the DD104N shown in the accompanying illustration has two mounting screws, while the DD350N has four.
5. Remove the converter diode.
 - A. Remove all old heat transfer compound from the heatsink mounting surface using a tool such as a rubber spatula that will not mar the heatsink surface. Remove any remaining residue with a soft cloth and a cleaning fluid such as Essex Cleaning Fluid (Brownell OS-3) by Dow Corning Co.
 - B. Use a non-marring cleaning pad such as a Scotchbrite by 3M™ to remove any oxidation from the heatsink mounting surface and the face of the diode. DO NOT use steel wool or sandpaper!
 - C. Follow oxidation removal with a final cleaning with cleaning fluid.

Important: Thermal Compound must be applied immediately to both surfaces to prevent oxidation from reoccurring.

6. Apply a thin, even coat of Thermal Compound (not supplied) to the new diode and the mounting surface. Dow Corning 340 is the recommended Thermal Compound.
7. Position the new converter diode being careful to match the holes for the screws.
8. Tighten the screws (2 or 4 depending on model) in the sequence shown in the illustration, to the Mounting Screw torques in Table 1.3.

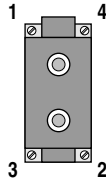


Table 1.3. Diode Torque Requirements.

Vendor P/N	TORQUE REQUIREMENT	
	Mounting Screw Torque	Terminal Connection Torque
DD89N16K	35 in. lb., 4 N-m (+/- 15%)	35 in. lb., 4 N-m (+ 5%/-10%)
DD104N16K	35 in. lb., 4 N-m (+/- 15%)	35 in. lb., 4 N-m (+ 5%/-10%)
DD151N16K	53 in. lb., 6 N-m (+/- 15%)	53 in. lb., 6 N-m (+5%/- 10%)
DD260N16K	53 in. lb., 6 N-m (+/- 15%)	106 in. lb., 12 N-m (+5%/- 10%)
DD350N16K	53 in. lb., 6 N-m (+/- 15%)	106 in. lb., 12 N-m (+5%/- 10%)
DD600N18K	53 in. lb., 6 N-m (+/- 15%)	106 in. lb., 12 N-m (+5%/- 10%)
DZ1070N18K	53 in. lb., 6 N-m (+/- 15%)	159 in. lb., 18 N-m (+5%/- 10%)
DD2228N16T	159 in. lb., 18 N-m (+/- 15)	159 in. lb., 18 N-m (+5%/- 10%)
ND89N16K	35 in. lb., 4 N-m (+/- 15%)	35 in. lb., 4 N-m (+/- 15%)
ND17N16K	35 in. lb., 4 N-m (+/- 15%)	35 in. lb., 4 N-m (+/- 15%)
ND260N16K	53 in. lb., 6 N-m (+/- 15%)	106 in. lb., 12 N-m (+/- 15%)
DZ600N16K	53 in. lb., 6 N-m (+/- 15%)	106 in. lb., 12 N-m (+/- 15%)

9. Bolt down the + and - bus bars, tightening the screws to the Terminal Connection torque values shown in the previous table.
10. Reattach the power leads at the top of each bus bar and torque the mounting screws to the value shown under Terminal Connection in the previous table.
11. Attach the “AK” terminal to the new diode and torque to the specified Terminal Connection value shown in the Table 1.3.

Converter Fan Replacement Kit

Where This Kit Is Used

Converter Fan Replacement (Catalog Number 1336-FAN-SP9A) -You can use this kit to replace any of the fans that are located on the bridge heatsink in the converter bay of your 1336 PLUS II Multipulse or 1336 IMPACT H-Frame drive. The number of fans varies by model.

Table 1.4. Fan Part Numbers

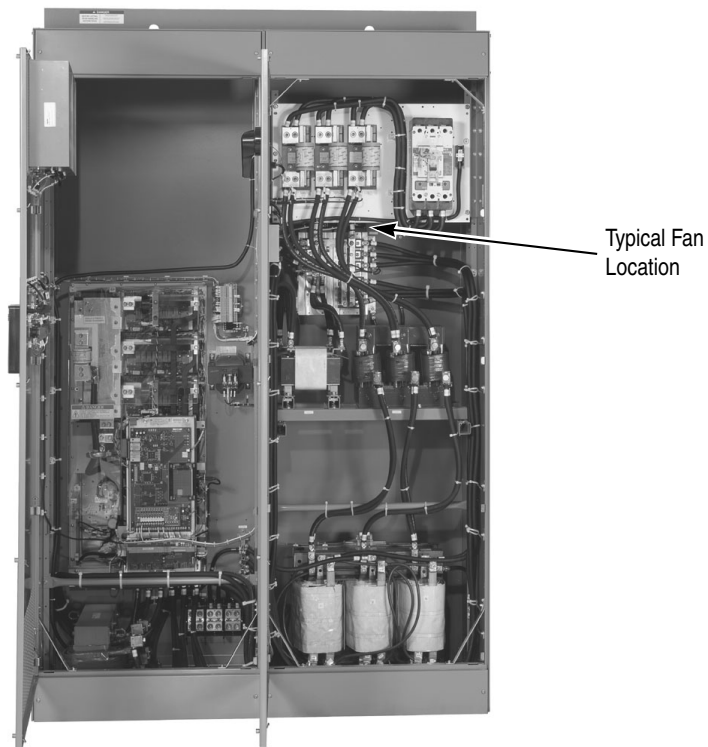
Replacement Kit #	Vendor #
1336 - FAN - SP9A	21087

What This Kit Contains

This kit contains a replacement fan and these instructions.

Locating the Fan(s)

The fans are located on the multi-pulse bridge heatsink in the converter bay of your drive. Fans are oriented to draw air up through the heatsink assembly.



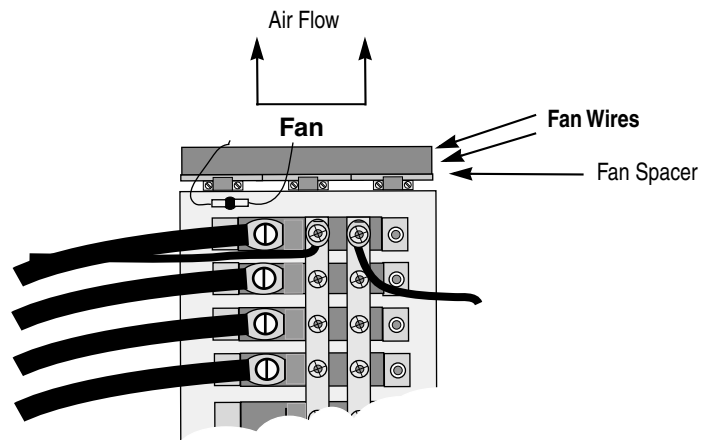
Replacing the Fan(s)

To replace the fan(s), follow these steps:



ATTENTION: Disconnect and lock out power from the system before disassembling the drive. Failure to disconnect power may result in death or serious injury. Verify bus voltage by measuring the voltage between +DC and -DC on terminal block TB1 which is located at the bottom of the 1336 Drive in the Inverter Bay. Do not attempt to service the drive until the bus voltage has discharged to zero volts.

1. Remove the red 115V power supply and white neutral wires from the stab-on connectors on the fan.



2. Using a thin, standard screwdriver, remove the screws and lockwashers that secure the fan.
3. Remove the fan and fan spacer.
4. Put the new fan in place, making sure that you align the holes in the bridge with the holes in the four corners of the fan and fan spacer.

Important: Make sure that the arrows on the fan are pointing towards the top of the cabinet.

5. Start the screws and lockwashers in the four corners.
6. Tighten the screws to 1.36 N-m (12 lbs.-in.).
7. Attach the red power supply and white neutral wires to the stab-on connectors on the fan.

Converter Thermal Switch Replacement Kit

Where This Kit Is Used

Converter Thermal Switch Replacement (Catalog Number 1336-TR-SP8A) - You can use this kit to replace the thermal switch(es) that are located on the multipulse bridge assembly in the converter bay of your 1336 PLUS II Multipulse or H-Frame IMPACT drive.

Table 1.5. Thermal Switch Part Numbers

Replacement Kit #	Vendor #
1336 - TR- SP8A	16283

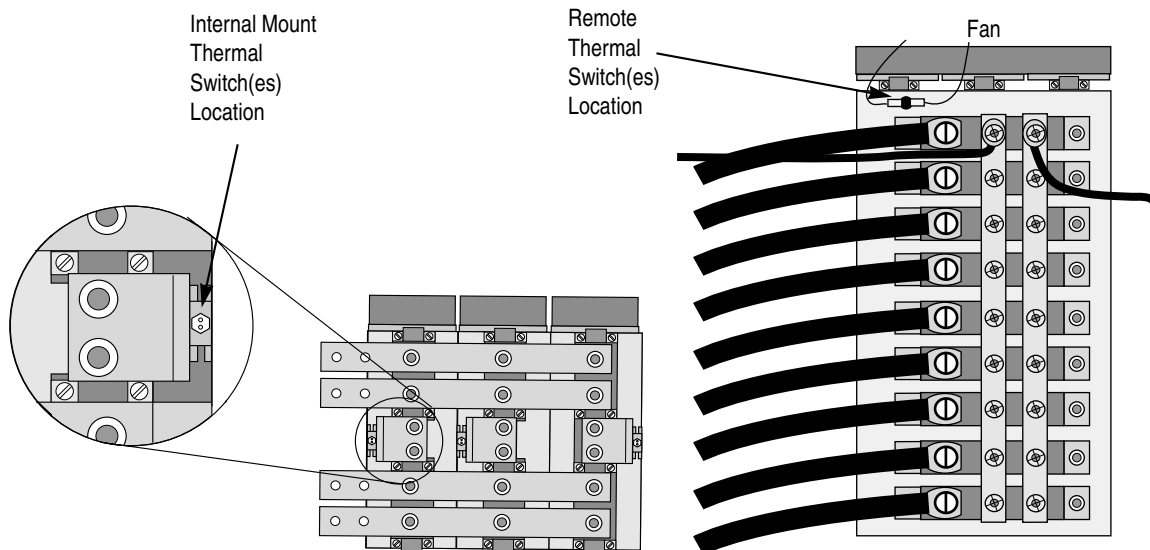
What This Kit Contains

This kit contains a replacement thermal switch and these instructions.

Locating the Thermal Switches

The thermal switches are mounted on the bridge heatsink located in the converter bay of your drive.

Important: On some drive models the thermal switch may be located remotely at the top of the heatsink above the bus bars as shown in the following illustration. In cases where the thermal switch is mounted remotely it will not be necessary to remove the “AK” input terminals or bus bars for access to the switch.



Replacing the Thermal Switch(es)

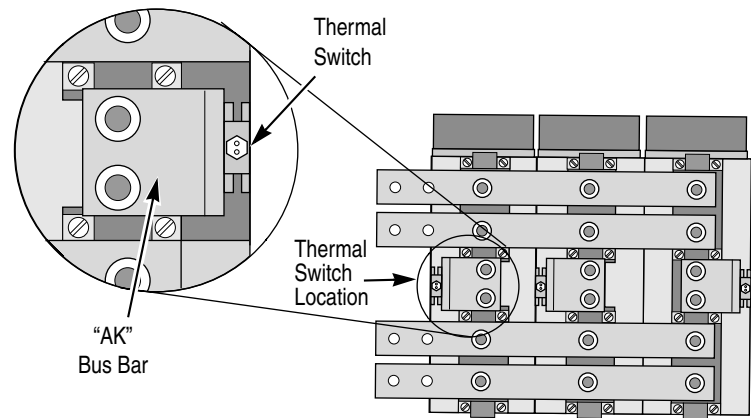
To replace the thermal switch(es), follow these steps:



ATTENTION: Disconnect and lock out power from the system before disassembling the drive. Failure to disconnect power may result in death or serious injury. Verify bus voltage by measuring the voltage between +DC and –DC on terminal block TB1 which is located at the bottom of the 1336 Drive located in the Inverter Bay of the cabinet. Do not attempt to service the drive until the bus voltage has discharged to zero volts.

Important: If your thermal switch is NOT located under a bus bar, it will not be necessary to perform steps 1, 2, 7 or 9.

1. Remove the flex bus or wire connected to the “AK” input terminal bus bar or diode that is located over the thermal switch you need to replace.
2. If your unit is equipped with a bus bar, remove it.
3. Remove the red power wires from the thermal switch.



600 HP and higher Thermal Bridge shown

4. Remove the thermal switch.
5. Thread in the new thermal switch by hand until it is snug.
6. Tighten the screw on the thermal switch to 1.81 N–m (16 lbs.–in.).
7. Bolt the “AK” input terminal bus bar or wire terminal to the diode and 3017471.8 for kit reference numbers.

Spare Parts

To determine spare parts for your Bridge Assembly, follow these steps:

- A. Determine Drive Size (HP) using Table 1.6 for CT or Table 1.7 for VT and then the type of multi-pulse transformer used in the drive package.
- B. Find drive size and move to the right until you are under the column which describes the transformer. That number is the bridge assembly number (Table 1.8).

Example: Bridge 304246 = *1336-BD-SP5A diode kit#*
1336-SN-SP9B snubber board kit #
1336-FAN-SP9A fan kit
1336-TR-SP8A thermo switch kit

Table 1.6 CT Bridge Assemblies

1336 Constant Torque DRIVE SIZE (HP) AB PART NUMBERS	Used With 12P ISO. XFMR BRIDGE #	Used With 12P Auto XFMR BRIDGE #	Used with 18P ISO.XFMR BRIDGE #	Used with 18P Auto XFMR BRIDGE #
BX040C	301746	304976	301749	301743
B050C	301746	304976	301750	301743
BX060C	301746	304976	301750	301743
B060C	301746	304976	301750	301743
B075C	301746	304976	304247	301743
B100C	304250	304976	304247	301744
B125C	301747	304976	301751	301744
BX150C	301747	304976	301751	301744
B150C	301747	304976	304248	301744
B200C	301747	304652	304249	301745
B250C	304245	304652	301752	301745
BP250C	304245	304652	301752	301745
BP300C	304245	304652	301752	301745
BP350C	304246	304652	301753	301745
BP400C	304248	304652	301753	304348
BP450C	304248	304977	301235	304348
B300C	304245	304652	301752	301745
B350C	304246	304652	301753	301745
B400C	301748	304652	301753	304348
B450C	301748	304977	301753	304348
B500C	301233	304977	301235	304348
B600C	301233	304977	301236	304348
B700C	301234	304978	301236	301231
B800C	301234	304978	301236	301231

Table1.7 VT Bridge Assemblies

1336 Variable Torque	Used With 12P ISO. XFMR	Used With 12P Auto XFMR	Used with 18P ISO.XFMR	Used with 18P Auto XFMR
DRIVE SIZE (HP) AB PART NUMBERS	BRIDGE #	BRIDGE #	BRIDGE #	BRIDGE #
BX040V	301746	304976	301749	301743
B040V	301746	304976	301750	301743
BX060V	301746	304976	301750	301743
B060V	301746	304976	304247	301743
B075V	301746	304976	304247	301744
B100V	304250	304976	304247	301744
B125V	301747	304976	301751	301744
B150V	301747	304976	304249	301744
B200V	304245	304652	304249	301745
B250V	304245	304652	301752	301745
BP250V	304245	304652	301752	301745
BP300V	304246	304652	301753	301745
BP350V	301748	304652	301753	301745
BP400V	301748	304977	301235	304348
BX250V	304245	304652	301752	301745
B300V	304246	304652	301753	301745
B350V	301748	304652	301753	304348
B400V	301748	304977	301235	304348
B450V	301233	304977	301235	304348
B500V	301233	304977	301236	304348
B700V	301234	304978	301236	301231
B800V	301234	304978	301236	301231

AB Parts

To order replacement kits:

- A. Find the bridge part number on the actual order related schematics or the Bridge Assembly data nameplate.
- B. Reference that number to this page for replacement kit numbers.

Table1.8 Bridge Parts List

BRIDGE #	Diode	Snubber	Fan	Thermal Switch
301229	1336-BD-SP5A	1336-SN-SP8B	1336-FAN-SP9A	1336-TR-SP8A
301230	1336-BD-SP6A	1336-SN-SP8B	1336-FAN-SP9A	1336-TR-SP8A
301231	1336-BD-SP5A	1336-SN-SP8B	1336-FAN-SP9A	1336-TR-SP8A
301232	1336-BD-SP5A	1336-SN-SP8B	1336-FAN-SP9A	1336-TR-SP8A
301233	1336-BD-SP6A	1336-SN-SP9B	1336-FAN-SP9A	1336-TR-SP8A
301234	1336-BD-SP7A	1336-SN-SP9B	1336-FAN-SP9A	1336-TR-SP8A
301235	1336-BD-SP6A	1336-SN-SP9B	1336-FAN-SP9A	1336-TR-SP8A
301236	1336-BD-SP7A	1336-SN-SP9B	1336-FAN-SP9A	1336-TR-SP8A
301738	1336-BD-SP1A	1336-SN-SP7B	N/A	1336-TR-SP8A
301739	1336-BD-SP3A	1336-SN-SP7B	N/A	1336-TR-SP8A
301740	1336-BD-SP2A	1336-SN-SP8B	1336-FAN-SP9A	1336-TR-SP8A
301741	1336-BD-SP3A	1336-SN-SP8B	1336-FAN-SP9A	1336-TR-SP8A
301742	1336-BD-SP4A	1336-SN-SP8B	1336-FAN-SP9A	1336-TR-SP8A
301743	1336-BD-SP1A	1336-SN-SP7B	N/A	1336-TR-SP8A
301744	1336-BD-SP1A	1336-SN-SP8B	1336-FAN-SP9A	1336-TR-SP8A
301745	1336-BD-SP3A	1336-SN-SP8B	1336-FAN-SP9A	1336-TR-SP8A
301746	1336-BD-SP2A	1336-SN-SP9B	1336-FAN-SP9A	1336-TR-SP8A
301747	1336-BD-SP4A	1336-SN-SP9B	1336-FAN-SP9A	1336-TR-SP8A
301748	1336-BD-SP6A	1336-SN-SP9B	1336-FAN-SP9A	1336-TR-SP8A
301749	1336-BD-SP3A	1336-SN-SP9B	N/A	1336-TR-SP8A
301750	1336-BD-SP2A	1336-SN-SP9B	1336-FAN-SP9A	1336-TR-SP8A
301751	1336-BD-SP4A	1336-SN-SP9B	1336-FAN-SP9A	1336-TR-SP8A
301752	1336-BD-SP5A	1336-SN-SP9B	1336-FAN-SP9A	1336-TR-SP8A
301753	1336-BD-SP6A	1336-SN-SP9B	1336-FAN-SP9A	1336-TR-SP8A
303680	1336-BD-SP8A	1336-SN-SP9B	1336-FAN-SP9A	1336-TR-SP8A
304243	1336-BD-SP5A	1336-SN-SP8B	1336-FAN-SP9A	1336-TR-SP8A
304244	1336-BD-SP6A	1336-SN-SP8B	1336-FAN-SP9A	1336-TR-SP8A
304245	1336-BD-SP5A	1336-SN-SP9B	1336-FAN-SP9A	1336-TR-SP8A
304246	1336-BD-SP5A	1336-SN-SP9B	1336-FAN-SP9A	1336-TR-SP8A
304247	1336-BD-SP3A	1336-SN-SP9B	1336-FAN-SP9A	1336-TR-SP8A
304248	1336-BD-SP5A	1336-SN-SP9B	1336-FAN-SP9A	1336-TR-SP8A
304249	1336-BD-SP5A	1336-SN-SP9B	1336-FAN-SP9A	1336-TR-SP8A
304250	1336-BD-SP3A	1336-SN-SP9B	1336-FAN-SP9A	1336-TR-SP8A
304348	1336-BD-SP5A	1336-SN-SP8B	1336-FAN-SP9A	1336-TR-SP8A
304742	1336-BD-SP5A	1336-SN-SP8B	1336-FAN-SP9A	1336-TR-SP8A
304976	1336-BD-SP9A	1336-SN-SP7B	1336-FAN-SP9A	1336-TR-SP8A
304652	1336-BD-SP10A	1336-SN-SP8B	1336-FAN-SP9A	1336-TR-SP8A
304977	1336-BD-SP11A	1336-SN-SP8B	1336-FAN-SP9A	1336-TR-SP8A
304978	1336-BD-SP12A	1336-SN-SP8B	1336-FAN-SP9A	1336-TR-SP8A

Note: All kits are qty (1) pcs.

Notes:

AB Parts

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AB Parts

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