



# Spectra Series™ Power Panelboards

## Bolt-On Circuit Breaker Kits

### Application

These instructions apply to bolt-on circuit breaker kits with catalog numbers AMCB6QD and AMCB4QD.

For use with circuit breaker types TQD and THQD.

For use with circuit breaker cover kits AFP2QDD and AFP3QDD.

### Installation



**WARNING:** Danger of electrical shock or injury. Turn OFF power ahead of the panelboard or switchboard before working inside the equipment or removing any component. Equipment is to be installed and maintained by properly trained and qualified personnel only.

In the following instructions, numbers in brackets in the text and figures refer to the items in Table 1.

- 1. Confirm the contents of the kit.** These kits are used to install Spectra TQD and THQD circuit breakers into Spectra APNB bolt-on-style interiors. The parts included in these kits are listed in Table 1.

Item	Description	Qty. in AMCB4QD	Qty. in AMCB6QD
1	A & C pole outer strap	2	2
2	A & C pole inner strap	2	2
3	Carriage bolt, 1/4-20 x 1 1/2"	2	3
4	Conical spring washer, 1/4"	2	3
5	Nut, 1/4-20	2	3
6	B pole strap	2	2
7	Inner mounting bracket	2	2
8	Thread-forming screw	8	8
9	Outer mounting bracket	2	2
10	Screw, 1/4-20 x 3/4"	4	6
11	Conical spring washer, 1/4"	4	6
12	Screw, #10-32 x 2 3/4"	4	4
13	Lock washer, #10	4	4
14	Antiturn clip	2	3

Table 1. Parts included in kits AMCB4QD and AMCB6QD.

- 2. Locate the side of the interior with a 2.75-inch reference distance.** The circuit breaker straps are mounted on the side of the panel interior bus at which the distance from the nearest vertical bus face to the inner face of the bus-support rail is 2.75 inches, as indicated in Figure 2.

- 3. Install the circuit breaker straps.** For three-phase applications (kit AMCB6QD), begin installing the breaker straps with the A or C phase poles, as shown in Figures 1 and 2. Slide an antiturn clip [14] over the square shank of a carriage bolt [3]. Insert the carriage bolt assembly into the appropriate square hole in the bus, so that the pin of the antiturn clip rests on the front of the bus. Place the square holes in the inner strap [2] and outer strap [1] over the bolt so that the pin of the antiturn clip fits into the small holes on the straps. Secure the assembly to the vertical bus with a conical spring washer [4] and nut [5], leaving the connection finger tight. Repeat the process for the center pole straps [6] and the other end pole straps [1, 2].

For single-phase panels, dc applications, and phase-balancing purposes (kit AMCB4QD), Table 2 lists the possible configurations. Align the appropriate strap assemblies [1, 2, 6] with the corresponding holes in the vertical bus, as shown in Figures 1 and 2. Fasten each strap assembly loosely to the vertical bus with a carriage bolt [2], conical washer [3], and nut [4], as described for the three-phase kit. When installing any of the two-pole strap configurations in Table 2, be sure to install the straps in standard phase-rotation order. When installing a two-pole and a three-pole breaker in a double-branch assembly, arrange the straps in the typical three-pole configuration, as shown in Figure 1.

A Phase	B Phase	C Phase
X	X	
X*		X*
	X	X

\* Use for single-phase panels and dc applications.

Table 2. Possible pole configurations with kit AMCB4QD.

- 4. Install the circuit breaker mounting brackets and cover supports.** Attach the inner breaker mounting brackets [7] to the panel side rails with thread-forming screws [8], as shown in Figure 1. Tighten the screws to 35 in-lb. Slide the uppermost slot on the cover supports (supplied with the breaker cover kit), with the mounting tabs oriented inward, onto the outer mounting brackets [9] until they snap into place. Cover supports can be easily removed by inserting a screwdriver blade into the slot on the underside of the mounting bracket assembly and gently prying downward while pushing the support off. Install the completed outer mounting bracket assemblies on the panel side rails with thread-forming screws [8], as shown in Figure 1. Tighten the screws to 35 in-lb.

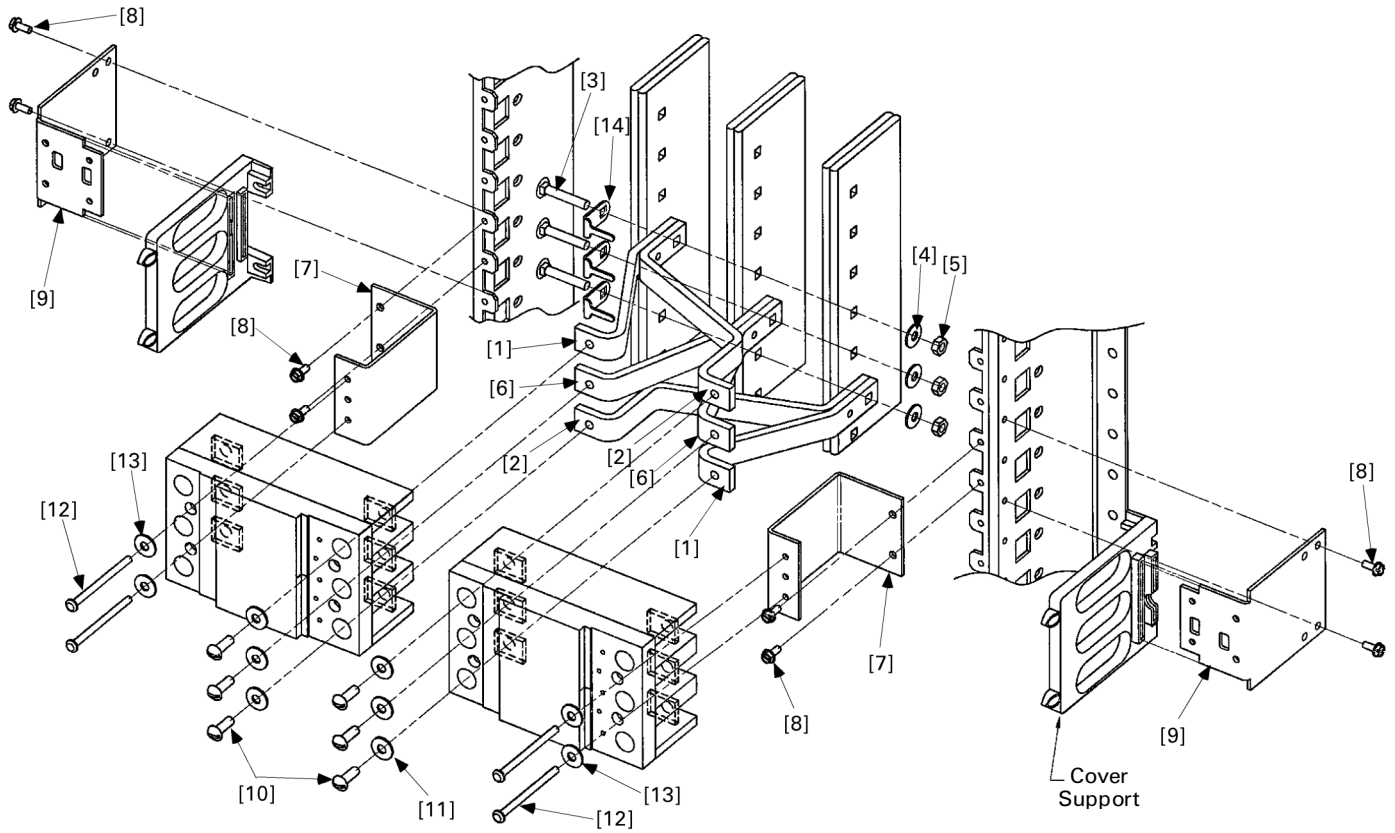


Figure 1. Mounting TQD and THQD circuit breakers into Spectra APNB bolt-on interiors.

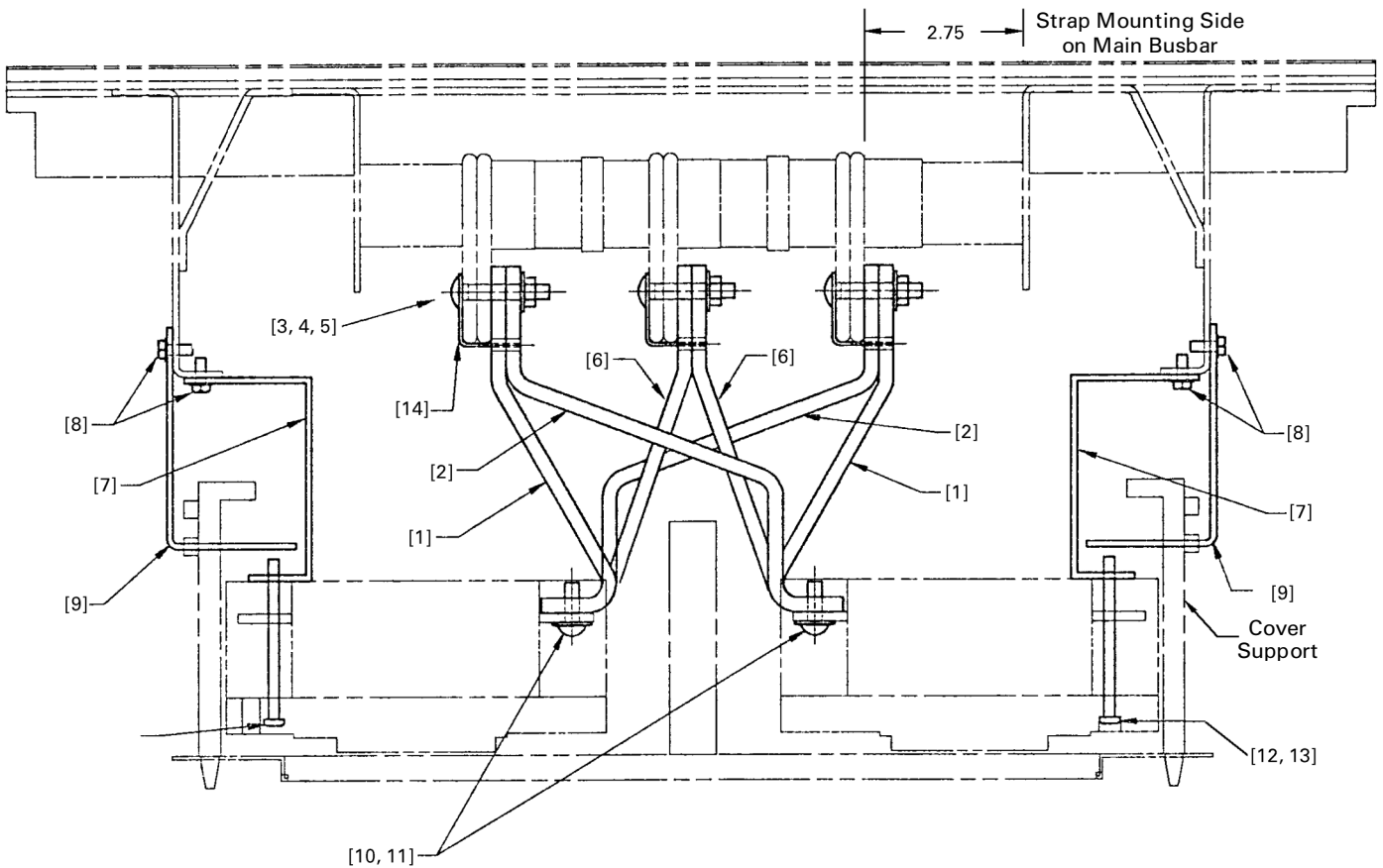
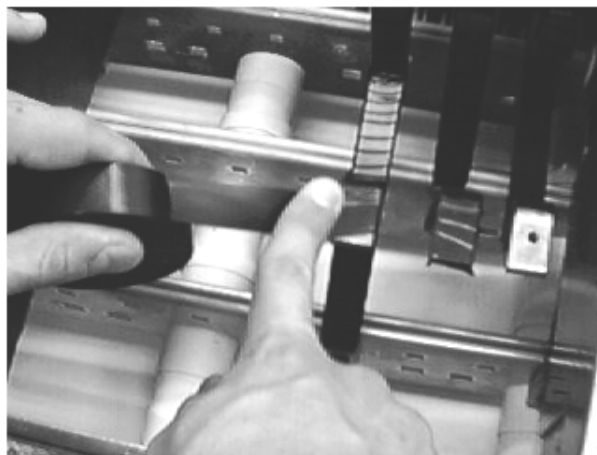


Figure 2. Mounting TQD and THQD circuit breakers into Spectra APNB bolt-on interiors, assembly end view.

**5. Install the circuit breakers.** Position the circuit breakers so that the line- or ON-side terminals rest on the straps and the opposite sides are supported by the mounting brackets. Align the holes in each breaker housing with the corresponding holes in the mounting brackets. Secure the breakers to the brackets with screws [12] and lockwashers [13] and tighten to 35 in-lb. Attach the line-side breaker terminals to the threaded holes in the straps with screws [10] and conical spring washers [11]. Tighten the screws to 50 in-lb. The straps may require minor adjustments for proper hole alignment.

To mount TQD and THQD breakers in a four-pole, 2X double-branch assembly, secure each breaker to the center hole in its breaker mounting bracket and connect two of the three strap assemblies as listed in Table 2.

**6. Insulate unused strap surfaces.** Apply multiple wrappings of insulation to unused strap surfaces, as shown in Figure 3. A UL-recognized 105° C thermoplastic tape (OANZ2, such as Permacel P-30-105 or 3M 66R) is required. Overlap greater than one-half of each preceding turn, as shown, to achieve a minimum tape thickness of 0.013 inch.



*Figure 3. Insulating unused strap contact surfaces.*

These instructions do not cover all details or variations in equipment nor do they provide for every possible contingency that may be met in connection with installation, operation, or maintenance. Should further information be desired or should particular problems arise that are not covered sufficiently for the purchaser's purposes, the matter should be referred to the GE Company.



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