

INSTALLATION INSTRUCTIONS

Retrofit of Spectra G-frame with ABB Tmax XT5 breaker Dual Mount (Bolt-On kits)

WARNING

Danger of electrical shock or injury. Turn OFF power ahead of the panel board 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.

General












These instructions are applicable to retrofit of Spectra G-frame with ABB Tmax XT5 breaker.

Table 1 lists the parts included in the bolt-on circuit breaker kits for double branch configurations (400A max).

Installation

Numbers in brackets in the following instructions and figures refer to the item numbers in table below.

Retrofit Kit

Item	Part	Description	Qty.
1		1/4 - 20 x 1.50" carriage bolt	6
2		1/4 - Belleville Washer	6
3		1/4 - 20 Nut	6
4		Breaker mounting bracket	2
5		Thread-forming screw #10-32	10
6		Mounting Stud	4
7		#6 x 32, 5/16" Length, Pan Head, Phillips screw	4
8		Supplied with breaker	6
9		Supplied with breaker	6
10		Left link and Tap assembly	1
11		Middle link and Tap assembly	1









Item	Part	Description	Qty.
12		Right link and tap assembly	1
13		Phase Barrier	1
14		Filler Plate 1	2
15		Filler Plate Middle	1
16		Thread Cutting Screw #4-20 x 0.375	2
17		Blankout Plate	1
18		Screw/Washer, steel 10-32X5/16	4

Table 1. Retrofit kit

Required Tools

Below listed tools are required for installation

Item	Part	Description
1		Torque wrench

STEP 1

Prepare the breaker, refer to breaker instruction document for more information. Install the appropriate lugs as in load side as shown in figure 1.

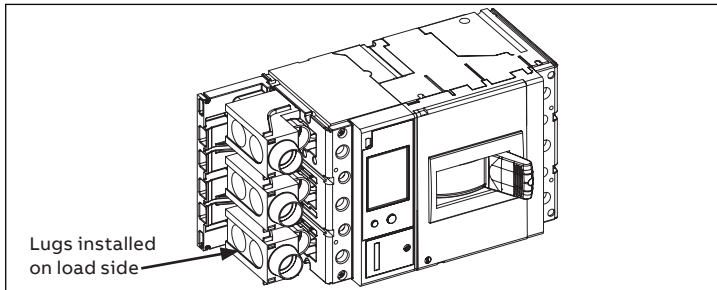


Figure 1. Breaker preparation

Step 3

Install the link assembly - Right link assembly [12] to adjacent pole from 2.75 inches ref. as shown in figure 3. Fasten the complete link assembly loosely to the vertical bus with carriage bolt [1], Belleville washer [2] and nut [3]. Refer figure 3.

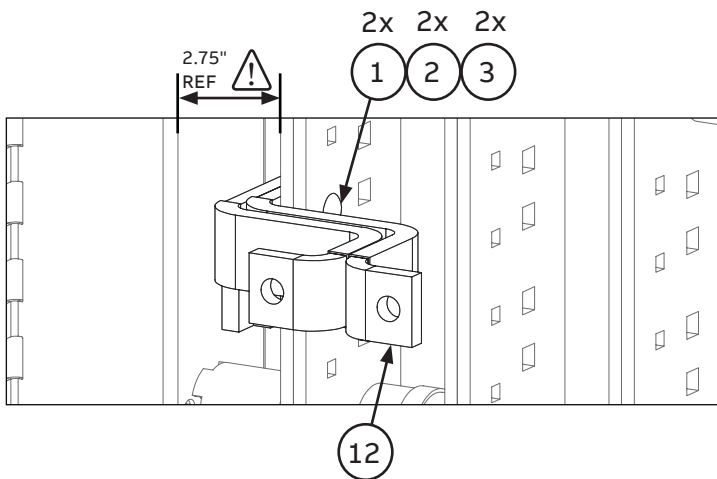


Figure 3. Installation of right link assembly

Step 5

Install the link assembly - Left link assembly [10] to outermost pole as shown in figure 5. Fasten the complete link assembly loosely to the vertical bus with carriage bolt [1], Belleville washer [2] and nut [3]. Refer figure 5.

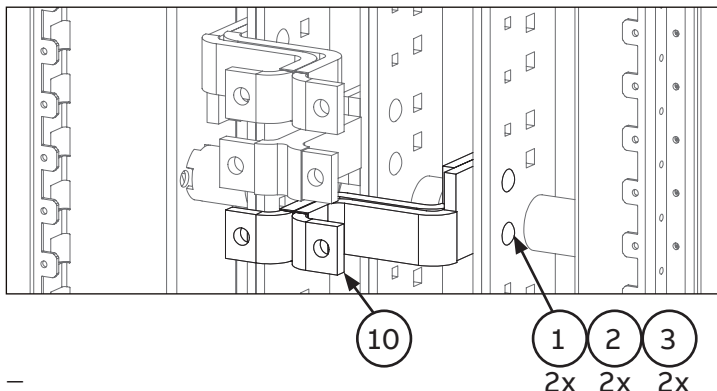


Figure 5. Installation of left link assembly

STEP 2

Find the side of the panel interior at which the dimension from the face of nearest vertical bus to the inner face of the bus support rail is 2.75 inches, as illustrated in figure 2 .

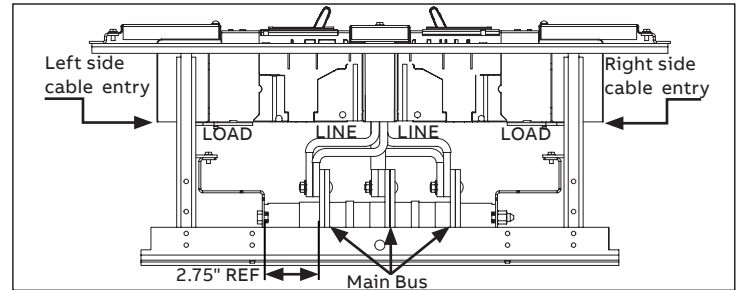


Figure 2. Double branch, ABB XT5; Assembly end view

Step 4

Install the link assembly - Middle link assembly [11] to middle pole as shown in figure 4. Fasten the complete link assembly loosely to the vertical bus with carriage bolt [1], Belleville washer [2] and nut [3]. Refer figure 4.

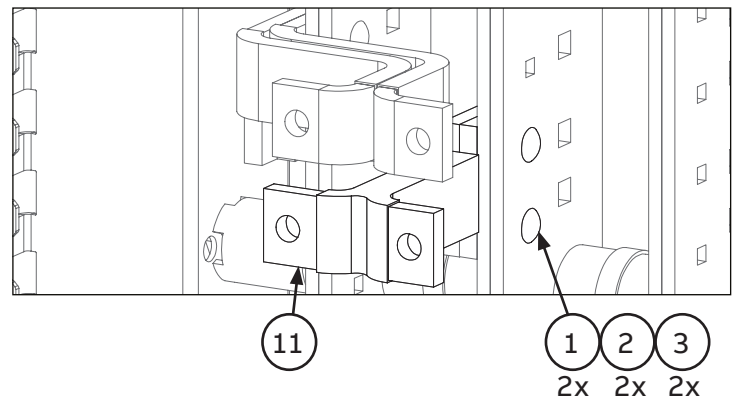


Figure 4. Installation of middle link assembly

STEP 6

Install the breaker mounting bracket [4] on the bus support rail with the thread forming screw [5], torque the screw to 30 lb-in. Refer figure 6.

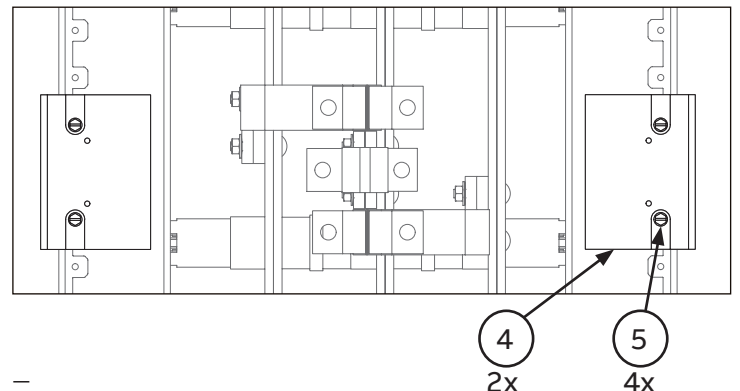


Figure 6. Installation of breaker mounting bracket

STEP 7

Install the pre-assembled breaker. Attach the breaker assembly to mounting brackets [4] with mounting stud [6], torque the mounting stud [6] to 18 lb-in. Refer figure 7a. Attach to link assembly with Hex terminal screw [8] and conical washer [9], torque the screw [8] to specification in document 1SDH002011A1002. Refer figure 7b.

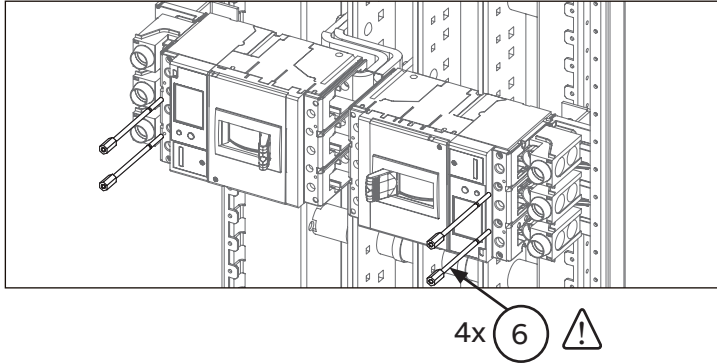


Figure 7a. Installation of breaker

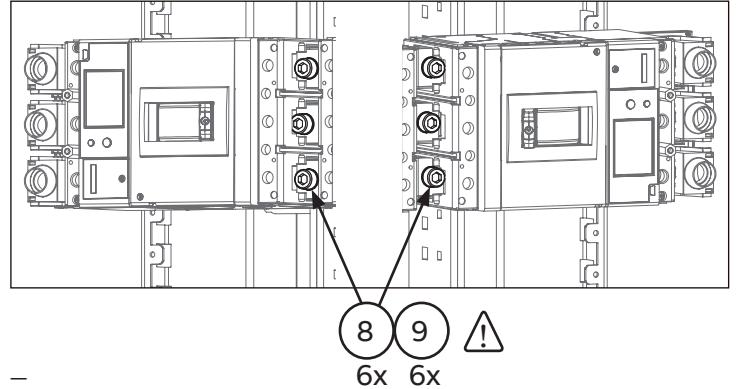
STEP 7 Continued

Figure 7b. Installation of breaker

STEP 8

Remove the plastic wall (knock out) in terminal cover and install the terminal cover on load side (slide down in as shown in figure 8).

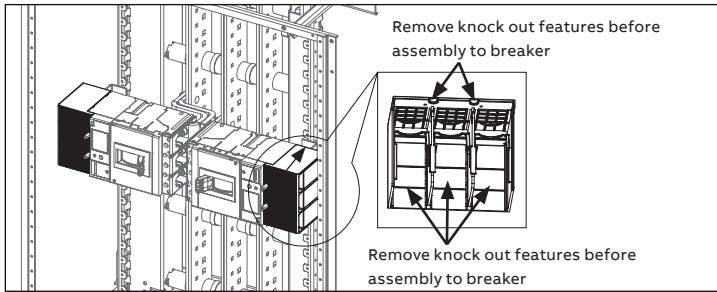


Figure 8. Installation of terminal cover

STEP 10

Tighten all the three bolted strap connections (carriage bolt assembly) at the vertical bus to 65 lb-in. It may be necessary to remove adjacent circuit breaker modules to allow access to the bolted connections at the vertical bus.

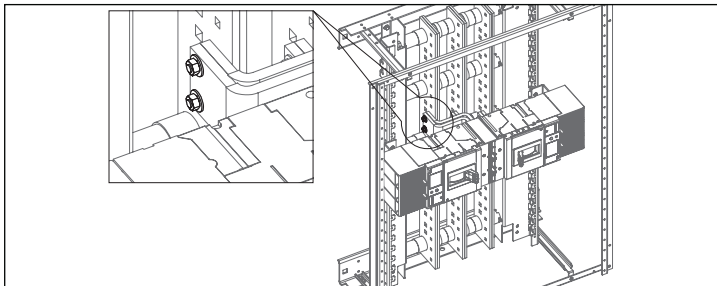


Figure 10. Tighten the bolted strap connection

STEP 9

Note: Use M3 x 8 if the required screw is not available.

Install the phase barrier [13] on the breaker with Pan head, Phillips screw [7], torque the screw [7] to 9 lb-in. Refer figure 9.

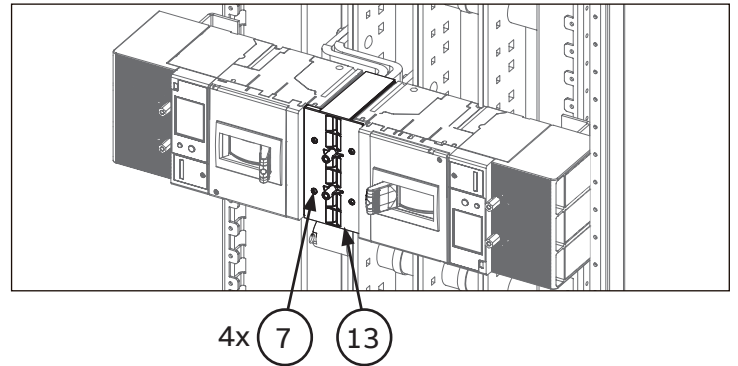


Figure 9. Installation of phase barrier

STEP 11

Prepare the filler plates [14, 15] if single breaker installation is used. Attach the blankout out plate [17] to the filler plate with thread forming screw [5], torque the screw [5] to 30 lb-in. Refer figure 11.

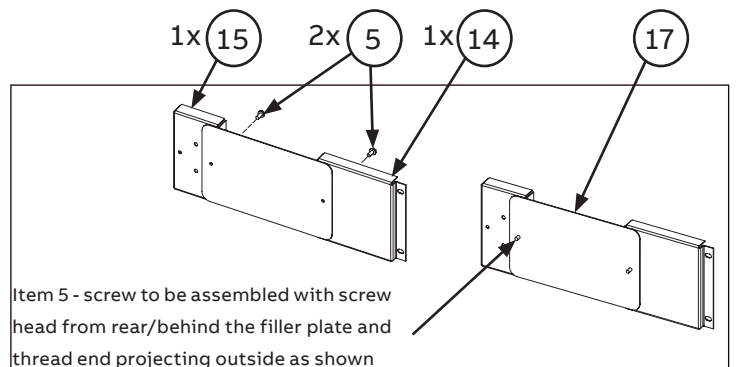


Figure 11. Preparation of filler plate

STEP 12: Tape unused contacts

Apply multiple wrappings of insulation to unused strap contact surfaces, as illustrated in figure 12. A UL-recognized 105 ° C thermoplastic tape (OANZ2, Permacel P-30-105, or 3M66R) is required. Overlap greater than one-half of each preceding turn, as shown to achieve a minimum tape thickness of 0.028 inch. This insulation thickness requires two complete layers of overlapping turns.

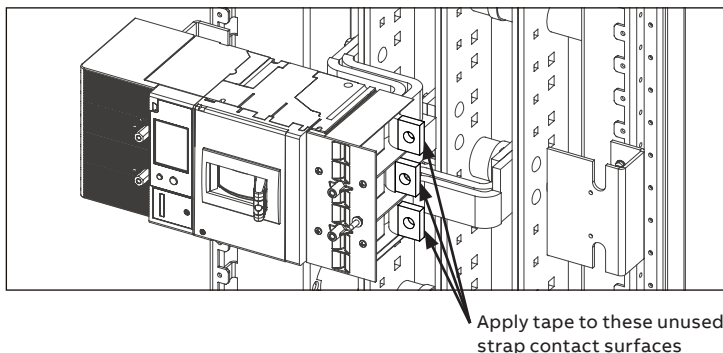


Figure 12. Applying insulating tape to unused contact surfaces

STEP 14: Optional - XT5 Kirk lock mounting kit assembly

Pre-assemble Kirk lock mounting kit assembly as shown in figure 14a.

Note: Kirk-lock is not included in the kit. Re-use Kirk lock from panel.

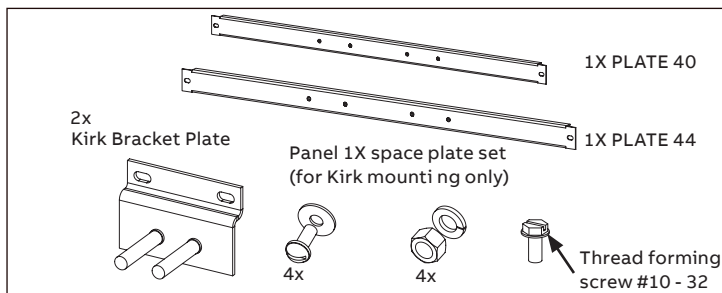


Figure 14a. XT5 kirk lock mounting kit assembly

STEP 13

Install the preassembled filler plates [14, 15] with thread forming screw [5], torque the screws [5] to 30 lb-in. Refer figure 13. Mount the thread cutting screw [16] and screw [18] on filler plates. Torque the screw [16] to 6.5 lb-in. Refer figure 13.

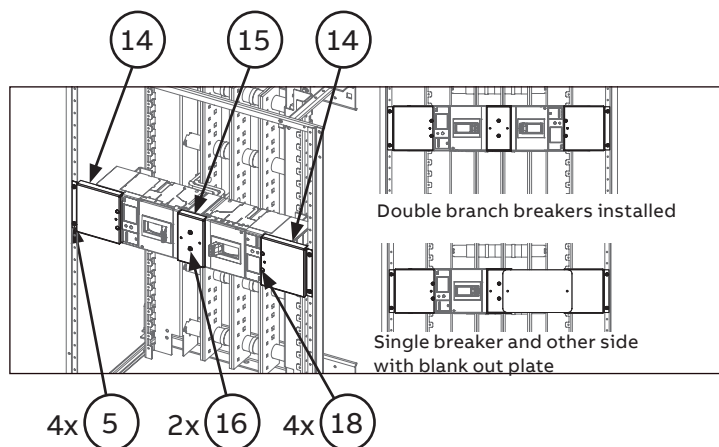


Figure 13. Installation of filler plate

STEP 14: Continued - XT5 Kirk Lock Mounting Kit and Installation

Choose the appropriate panel width 1x space plate from the kirk lock kit and fit 1x space plate on the panel with thread forming screw (2x) as shown in figure 14b.

On the 1x space plate install the kirk lock assy with 2x screws fastened or 1x space plate. Verify the lock function after complete installation.

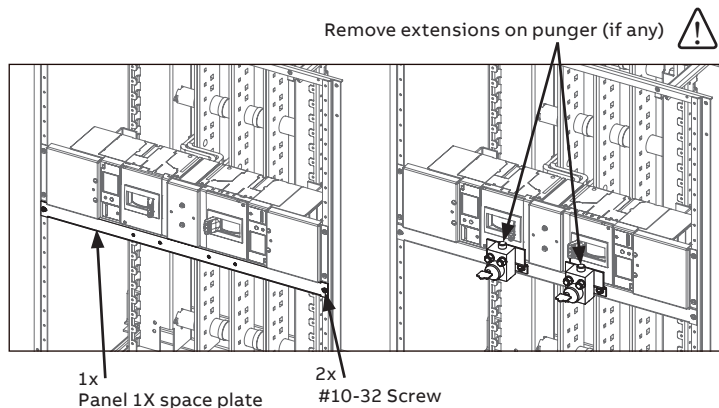


Figure 14b. XT5 kirk lock installation on panel

Disclaimer: 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 ABB Company.

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