

INSTALLATION INSTRUCTIONS

Retrofit of Spectra G-frame with ABB Tmax XT5 breaker Single 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 single branch configurations.

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	1
5		Thread-forming screw #10-32	6
6		Breaker Terminal Cover	1
7		Mounting Stud	4
8		M10 X 30 - screw & washer	3
9		Busbar Link Assembly Right	1
10		Busbar Link Assembly Middle	1

Item	Part	Description	Qty.
11		Busbar Link Assembly Left	1
12		Filler Plate 1	1
13		Filler Plate 2	1
14		Nut	2
15		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 (right and left side cable entry)

Prepare the breaker, refer to breaker instruction document for more information. Install the appropriate lugs as inload side and mounting stud [7] with nut [14] as shown in figure 1. Install Phase barriers supplied with breaker on the line side.

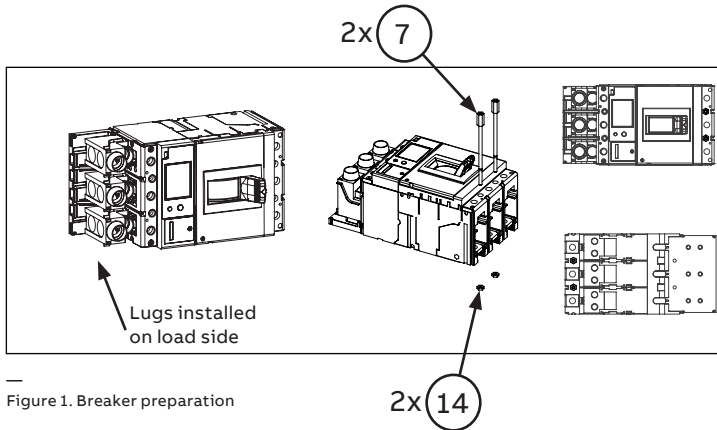


Figure 1. Breaker preparation

STEP 2 (right and left side cable entry)

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 2a for right side cable entry and figure 2b for left side cable entry.

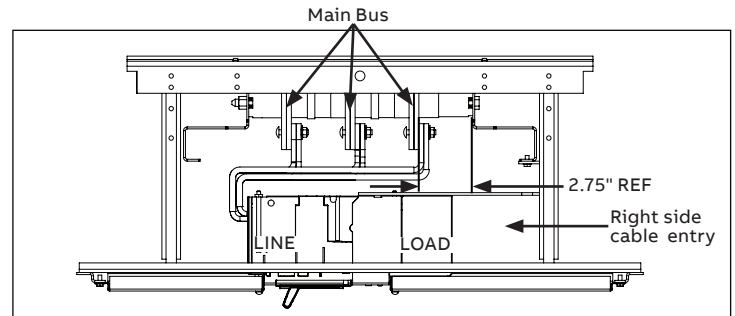


Figure 2a. Single Branch, ABB XT5; Right side cable entry, Assembly end view

STEP 3 (right side cable entry)

Install the link assembly left [11] to adjacent bus from 2.75 inches ref. as shown in figure 3a. Fasten the link assembly loosely to the vertical bus with carriage bolt [1], Belleville washer [2] and Nut [3].

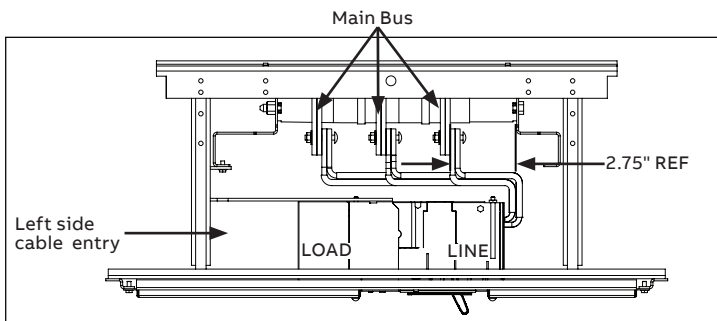


Figure 2b. Single Branch, ABB XT5; Left side cable entry, Assembly end view

STEP 3 (left side cable entry)

Install the link assembly right [9] to adjacent bus from 2.75 inches ref. as shown in figure 3b. Fasten the link assembly loosely to the vertical bus with carriage bolt [1], Belleville washer [2] and Nut [3].

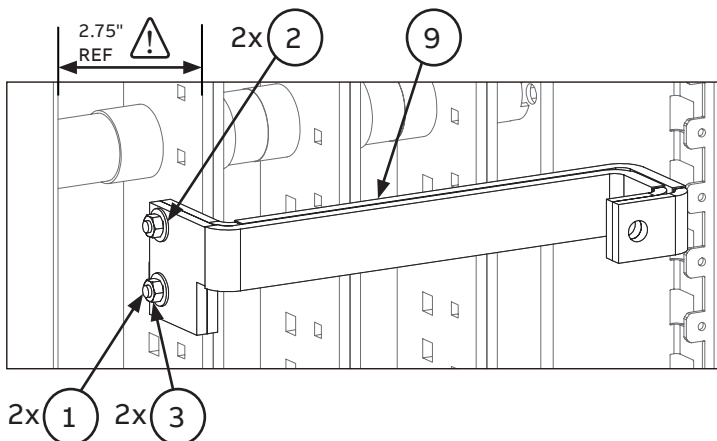


Figure 3b. Installation of link assy. right; left side cable entry

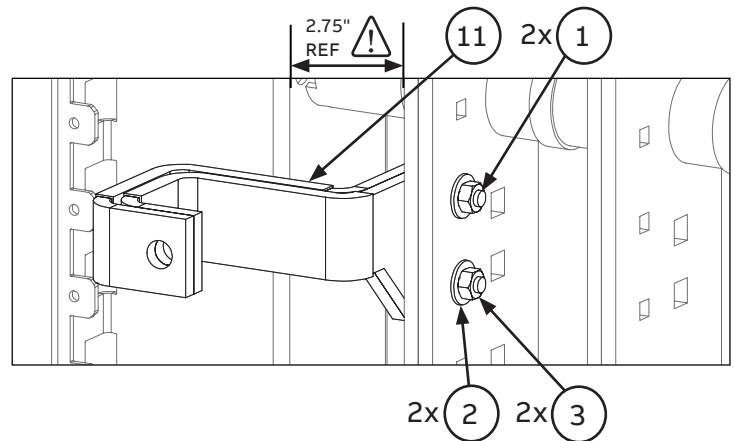


Figure 3a. Installation of link assy. left; right side cable entry

STEP 4 (right side cable entry)

Install the link assembly middle [10] and link assembly right [9] in respective bus as shown in figure 4a. Fasten the link assembly loosely to the vertical bus with carriage bolt [1], Belleville washer [2] and Nut [3].

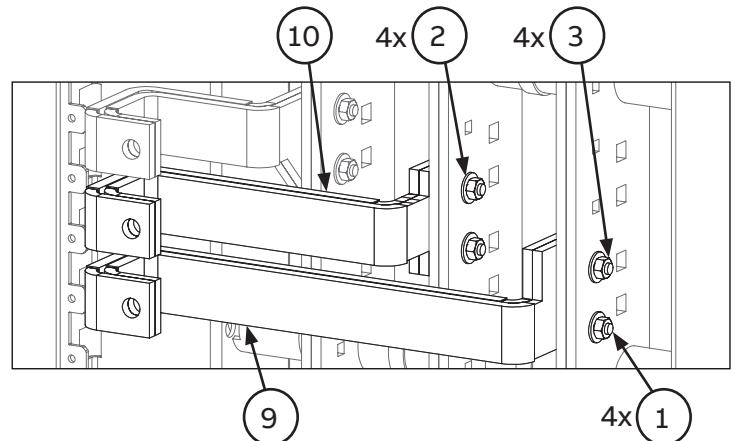


Figure 4a. Installation of link assy. (middle & right); right side cable entry

STEP 4 (left side cable entry)

Install the link assembly middle [10] and link assembly left [11] in respective bus as shown in figure 4b. Fasten the link assembly loosely to the vertical bus with carriage bolt [1], Belleville washer [2] and Nut [3].

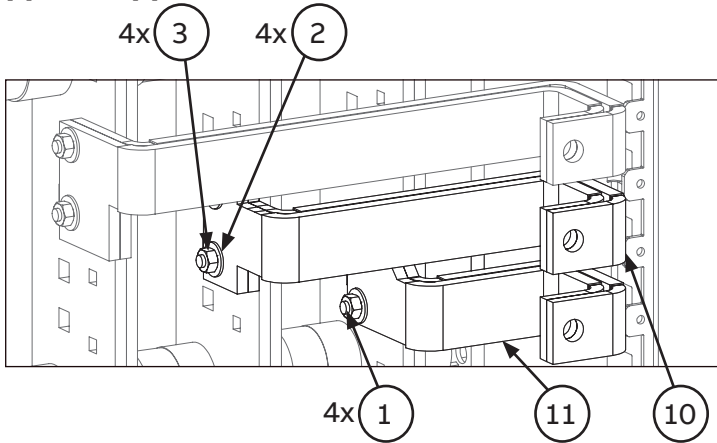


Figure 4b. Installation of link assy. (middle & left); left side cable entry

STEP 6

Align breaker with copper straps and mounting bracket with the frame holes. Refer figure 6. Position the hardware in the respective locations.

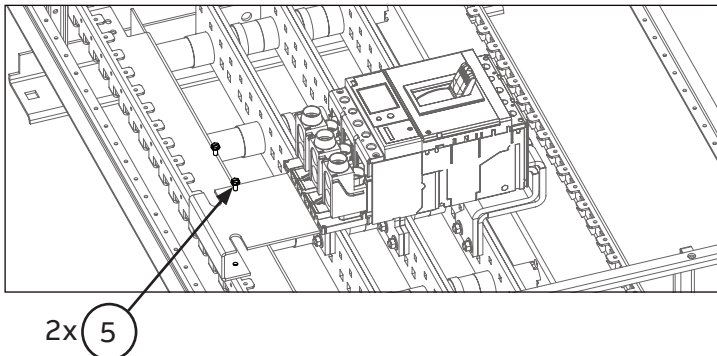


Figure 6. Alignment of breaker and mounting bracket assembly on the frame

STEP 8 (right and left side cable entry)

Remove the plastic wall (knock out) in terminal cover (6) and install the XT5 terminal cover on load side (slide down in as shown in figure 8).

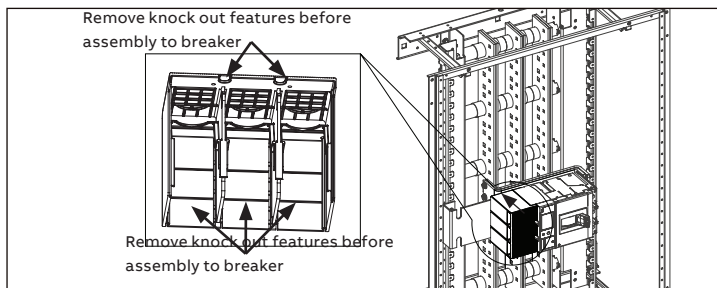


Figure 8. Installation of terminal cover

STEP 5

Install the breaker and bracket with mounting stud [7], torque the mounting stud [7] to 17 lb-in. Refer figure 5.

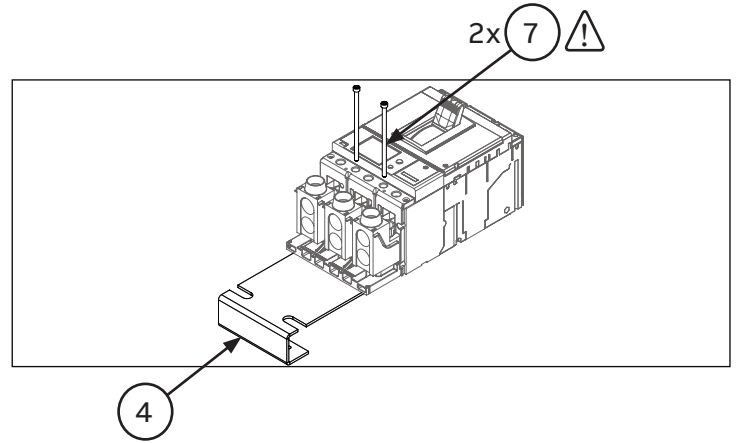


Figure 5. Breaker and mounting bracket assembly

STEP 7

Install the breaker and bracket assembly on the bus support rail (towards load side of breaker) with thread forming screw [5], torque to 30 lb-in. Torque the Hex terminal screw [8] to specification in document 1SDH002011A1002. Refer figure 7. Screw supplied with breaker.

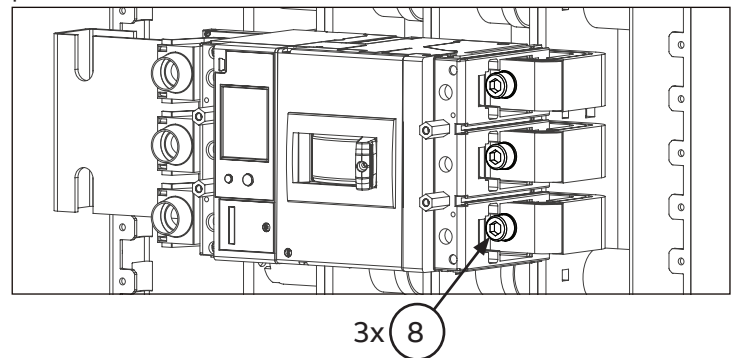


Figure 7. Installation of breaker

Note: Do not tighten the screws until the mounting bracket is aligned. Tighten & Torque the hardware once aligned.

STEP 9 (left and right side cable entry)

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.

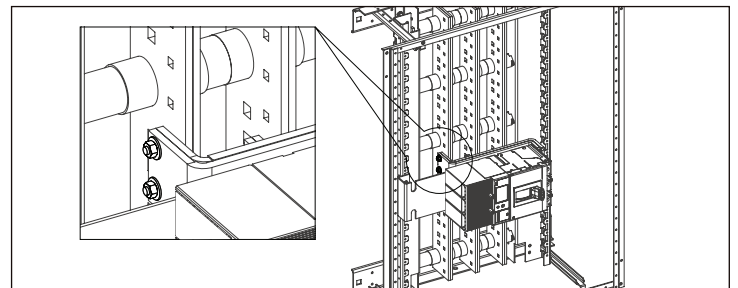


Figure 9. Tighten the strap

STEP 10

Install the filler plates[12,13] to panel with thread forming screw[5] and screw[15]. Align all the screws before completely tightening. Torque the screw to 30 lb-in. Refer figure 10.

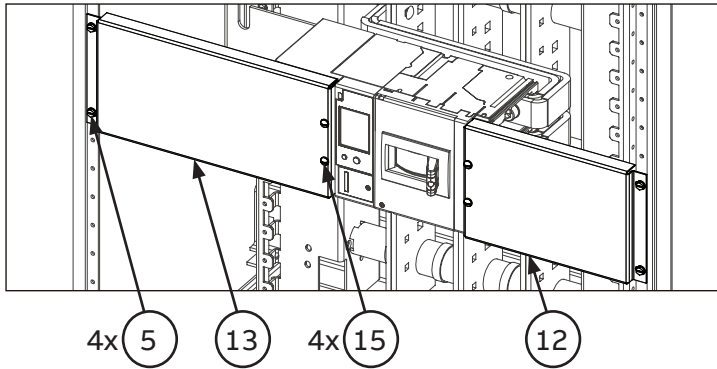


Figure 10. Installation of filler plate

STEP 11 Continued

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 11b.

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

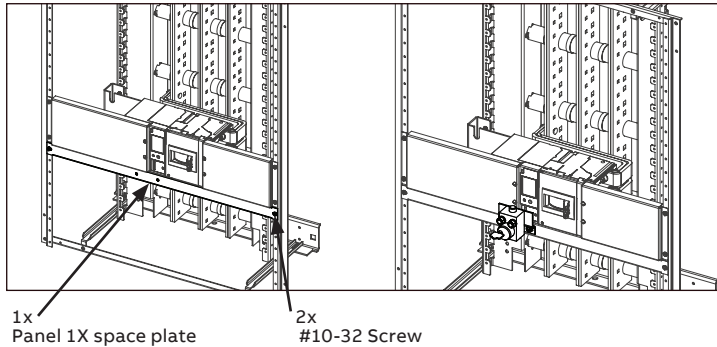


Figure 11b: XT5 Kirk lock installation on panel

STEP11: Optional - Kirk lock mounting kit assembly

Pre-assemble Kirk lock mounting kit assembly as shown in figure 11a.

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

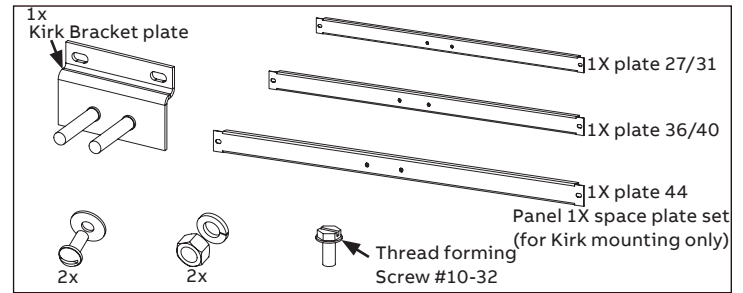


Figure 11a: XT5 Kirk lock mounting kit assembly

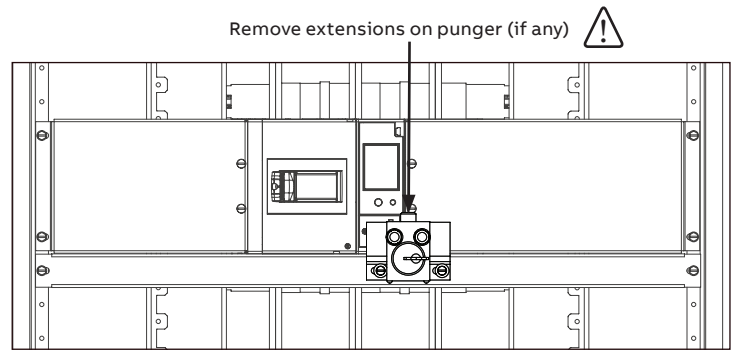
STEP 11 Continued

Figure 11c: Right side cable entry, XT5 Kirk lock set mounted on panel

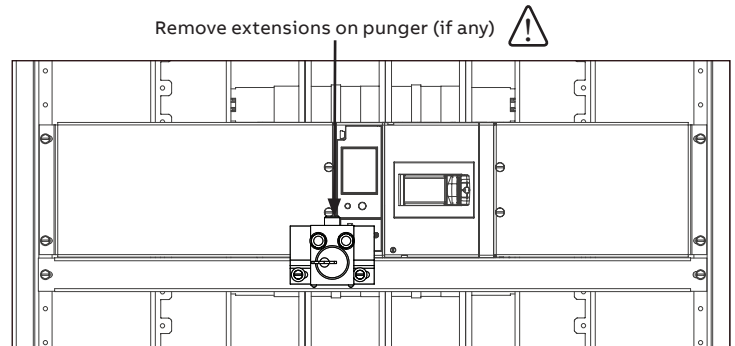


Figure 11d. Left side cable entry, XT5 Kirk lock set mounted on panel

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.