

IBDN Structured Cabling System

BIX IDC Wall Mount System

Installation and Maintenance

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About this document

This document provides information about the BIX IDC Wall Mount System installation in a building environment and provides components & tool information used with the system.

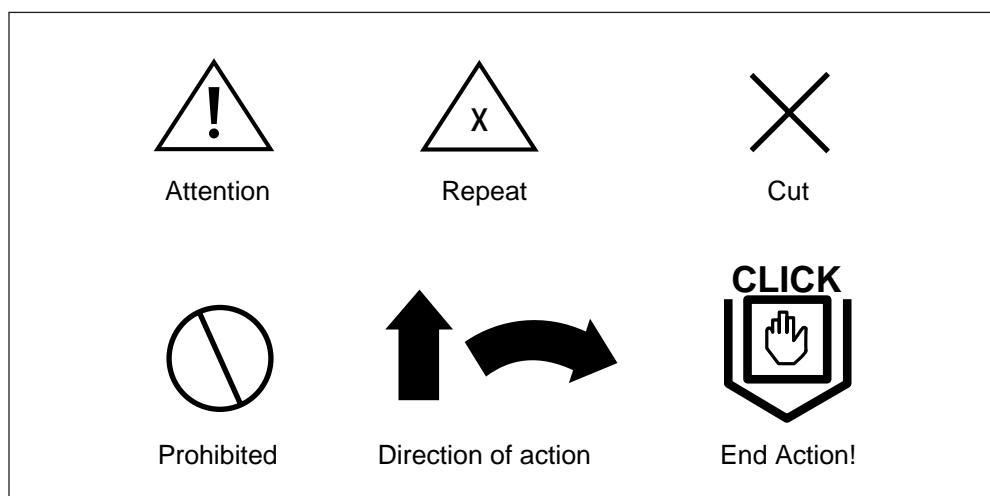
Appendix A will provide ordering information.
Appendix B will give general wire termination information.

This document assumes that you are familiar with horizontal and backbone cable physical routing in a building environment.

Before starting the installation, make sure that you have the required tools, materials and installation documents, outlined on the cover sheet of each chapter.

Briefly review each pictorial procedure to familiarize yourself with the icons and graphic symbols used.

Legend



Application of BIX IDC system

The BIX Wall Mount System is a modular cross-connect system for terminating and cross-connecting telecommunication equipment.

The BIX system is designed for in-building use in telecommunications closet, equipment room, entrance facilities and other cross-connect or interconnect points in commercial, industrial, institutional, and residential buildings. It should be installed in locations where it is not subjected to extreme vibration, temperature, humidity, dust or corrosive fumes.

The BIX system provides the ideal termination and cross-connection facilities for in-building structured cabling environment. It is designed to provide an efficient and cost effective installation for voice and data systems.

The basic components of the BIX Wall Mount System are distribution connectors equipped with double-ended insulation displacement connection clips, wall mounting hardware, installation tools and testing tools.

The BIX Wall Mount System provides the proven benefits of:

- Modular layout
- High termination density
- Fast installation
- Single connection tool
- Connection reliability
- Category 5 compliance

The insulation displacement connection clips in the BIX connectors will terminate 0.64, 0.5 and 0.4 mm (22, 24 and 26 AWG) plastic insulated solid copper conductors without stripping. Over 200 insertions of any combination of wire gauge are possible without jeopardizing the reliability of the connector.

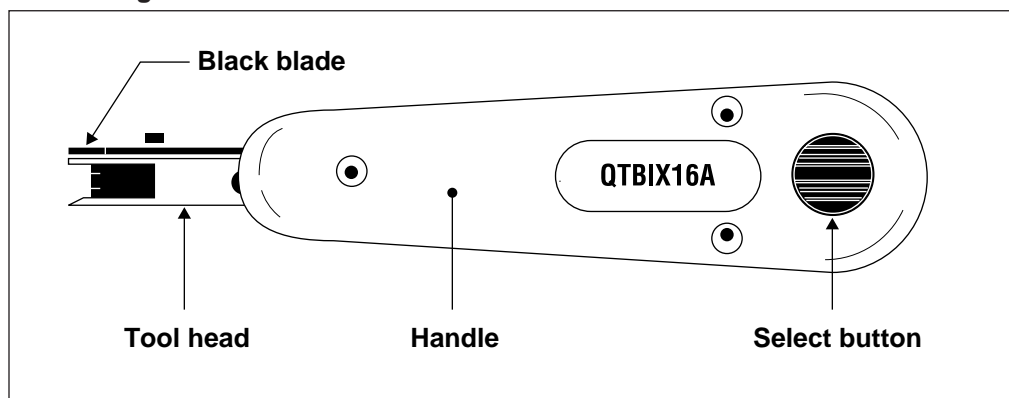
The BIX products are UL listed and CSA certified.

Using the QTBIx16A connecting tool

General

The QTBIx16A connecting tool is used to terminate wires in the BIX connectors. Care should be taken at all times to avoid damaging the tool.

Figure 3-1
Connecting tool – QTBIx16A



Select button

The select button in the handle of the tool can be set to either the CUT or NO-CUT position. In the CUT position, the tool inserts the wire into the connector and cuts off the excess wire. In the NO-CUT position, the wire is inserted without being cut. The NO-CUT position is used when looping wire from one location to another.

Cutting mechanism

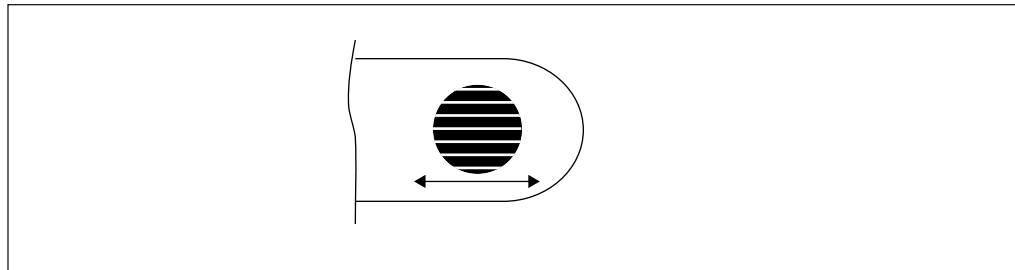
The cutting side of the tool is identified by the black blade. In the CUT position, the tool is used with the black blade pointing towards the wire ends being cut off.

Operating tool in the “CUT” position

- Set the select button to the CUT position (refer to Figure 3-2).
- Hold the tool with the black blade pointing towards the wire end to be cut off.
- Insert the tool, on the connector, at right angle and level.
- Push the connecting tool to seat the wire in the connector.
- Release forward pressure in order to activate the cutting blade.

Note: Wires will not be properly inserted and cut unless the tool is completely pushed forward and bottomed out.

Figure 3-2
Operating tool in the “CUT” position

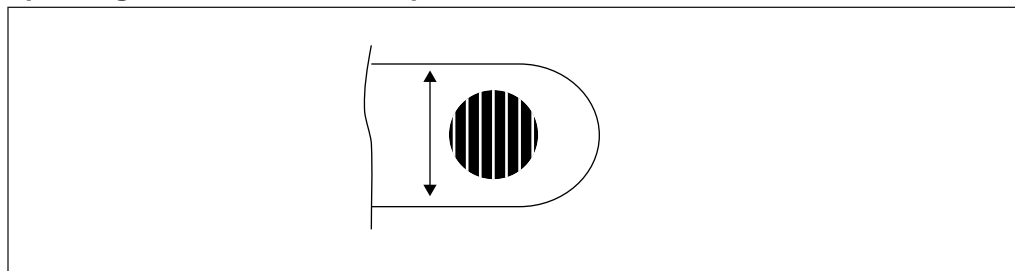


Operating tool in the “NO-CUT” position

- Set the select button to the NO-CUT position (refer to Figure 3-3).
- Insert the tool, on the connector, at right angle and level.
- Push the connecting tool to seat the wire in the connector.

Note: Wires will not be properly inserted unless the tool is completely pushed forward and bottomed out. The tool will not click in the NO-CUT position.

Figure 3-3
Operating tool in the “NO-CUT” position



Installation of mounts

Procedure 4-1 Installation of mounts

Tools

Measuring tape, pencil, screwdriver

Material

QMBIX10A or QMBIX12E Mounts

Hardware:

3/4 or 1/2 in No. 8 round-head or pan-head wood screws, 2 per mount.

References

Engineering work plan.

Refer to the engineering plan to determine: single or double channel routing.

Wall terminal expands from left to right.

Note: BIX mounts do not need to be grounded.

—continued—

Procedure 4-1
Installation of mounts (continued)

Figure 4-1
BIX IDC wall mount installation – Single channel

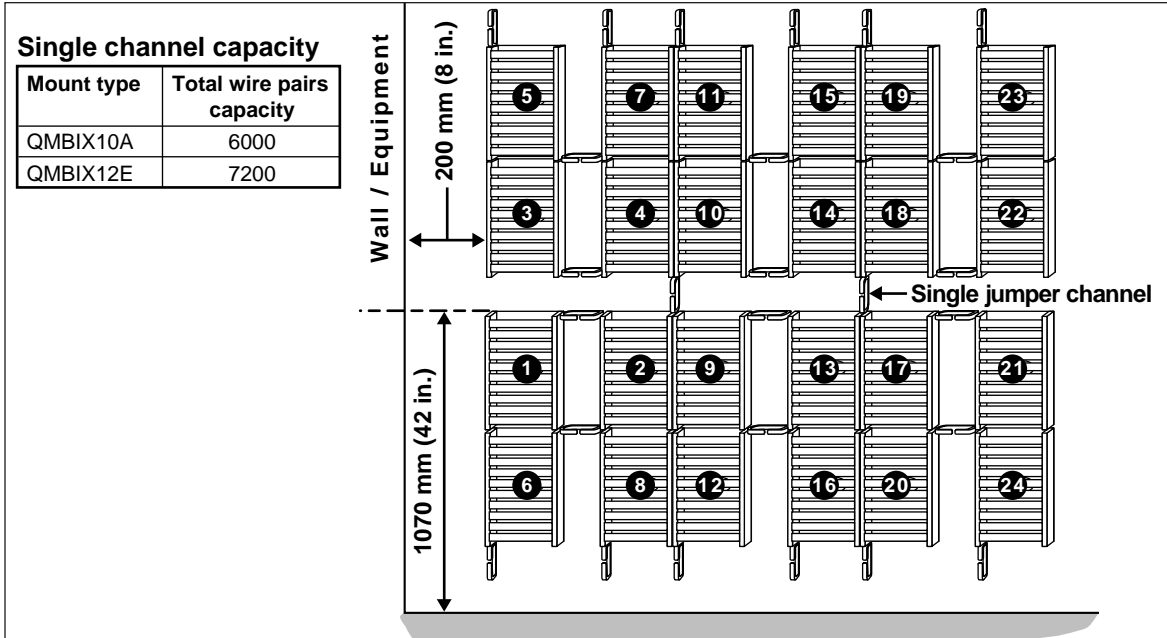
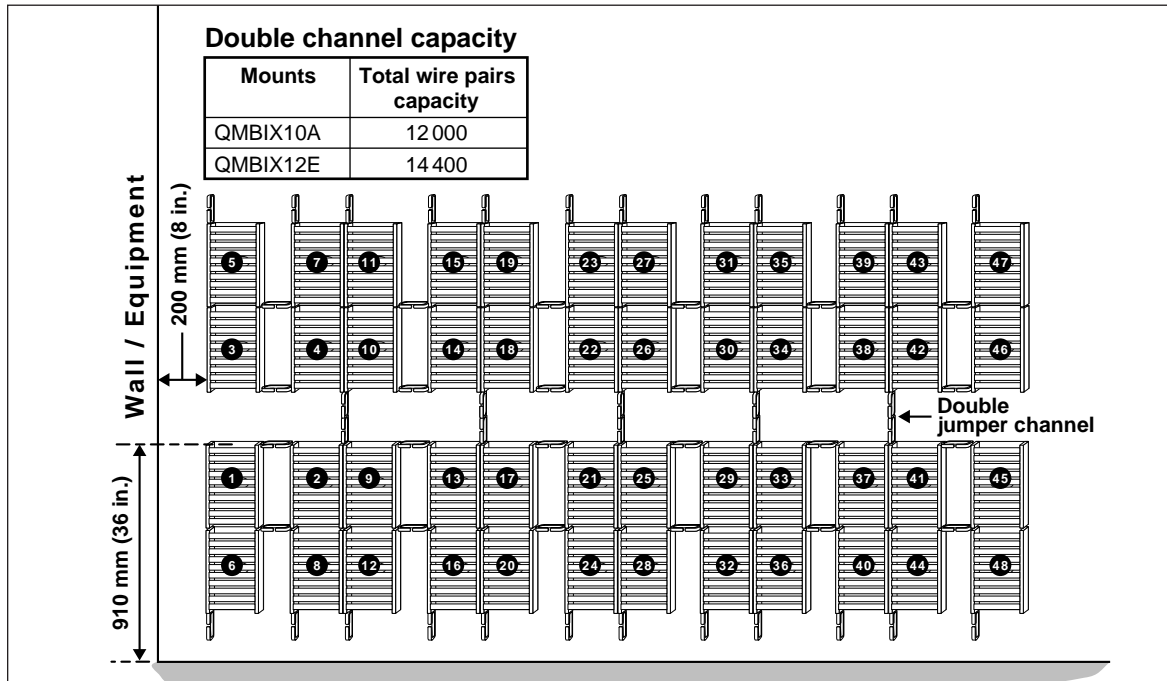
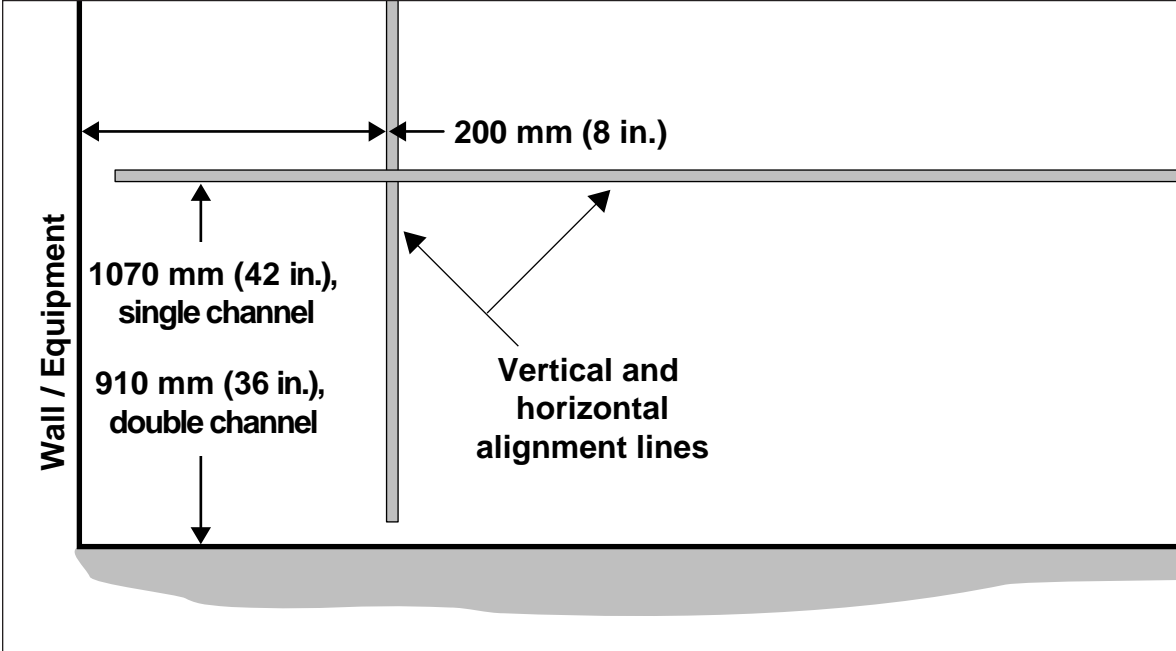
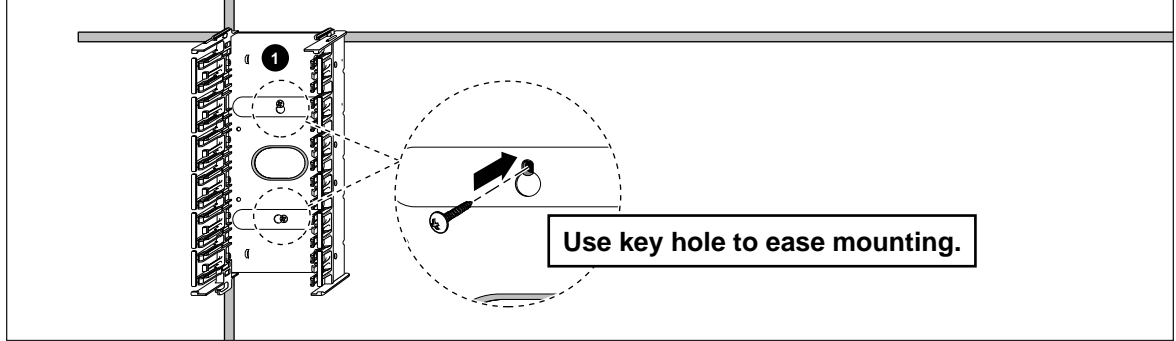


Figure 4-2
BIX IDC wall mount installation – Double channel



—continued—

Procedure 4-1
Installation of mounts (continued)

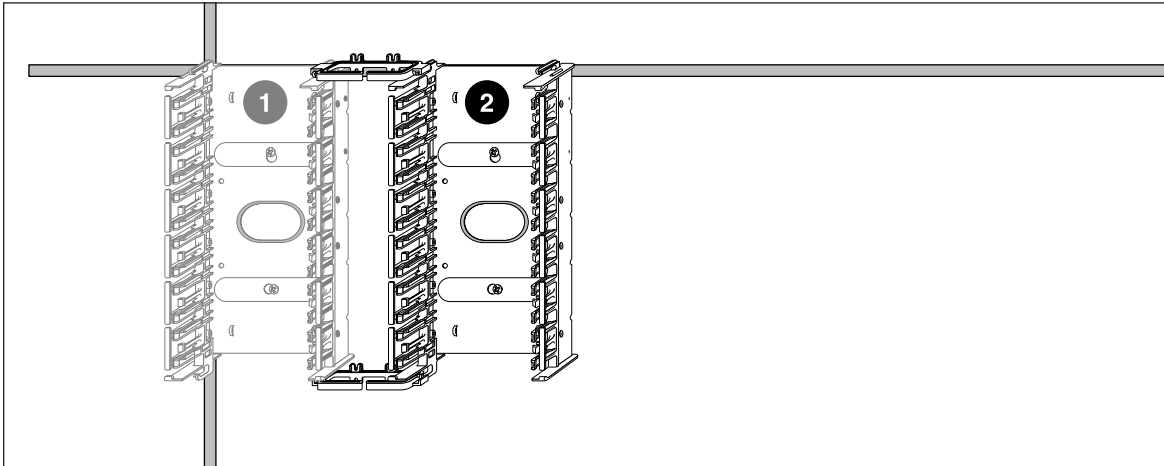
Step	Procedure
1 2	<p>1 Make a vertical line at 200 mm (8 in.) from the left hand side wall or from other equipment.</p> <p>2 Make a horizontal line: 1070 mm (42 in.) from the floor level with “single ring” wall terminal, or 910 mm (36 in.) from the floor level with “double ring” wall terminal application.</p>
 <p>The diagram illustrates the marking process on a wall. A vertical line is drawn 200 mm (8 in.) from the left wall. A horizontal line is drawn at a height of 1070 mm (42 in.) for a single channel or 910 mm (36 in.) for a double channel. The intersection of these lines is marked as the alignment point.</p>	
<p style="text-align: center;">Caution</p> <p>The correct alignment of the completed BIX installation depends on the accuracy of the vertical and horizontal placing of the first mount.</p>	
3	<p>First mount</p> <p>Align first mount with the intersection of the vertical and horizontal lines. Mark screw positions and place screws. Insert and secure the mount.</p>
 <p>The diagram shows the first BIX mount being aligned with the intersection of the vertical and horizontal lines. A callout shows a screw being inserted into a key hole to ease mounting.</p>	
<p>—continued—</p>	

4-4 Installation of mounts

Procedure 4-1 Installation of mounts (continued)

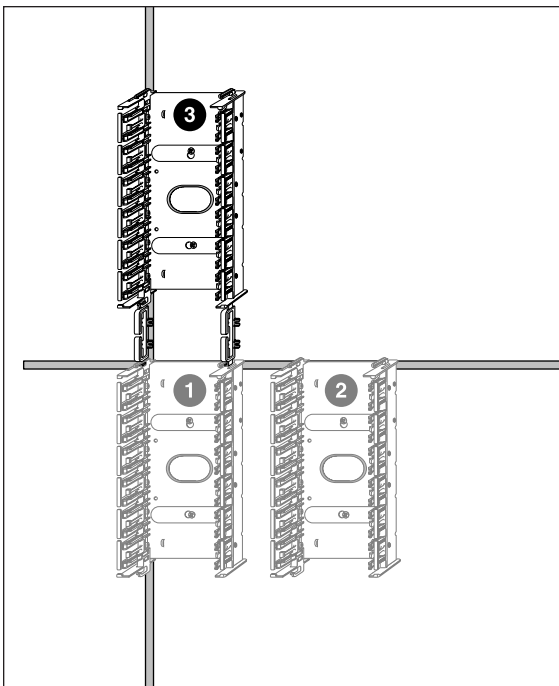
4 Second mount.

Distance second mount from the right side of the first mount using two distribution rings. Check the horizontal alignment, and secure the mount. Remove both distribution rings.



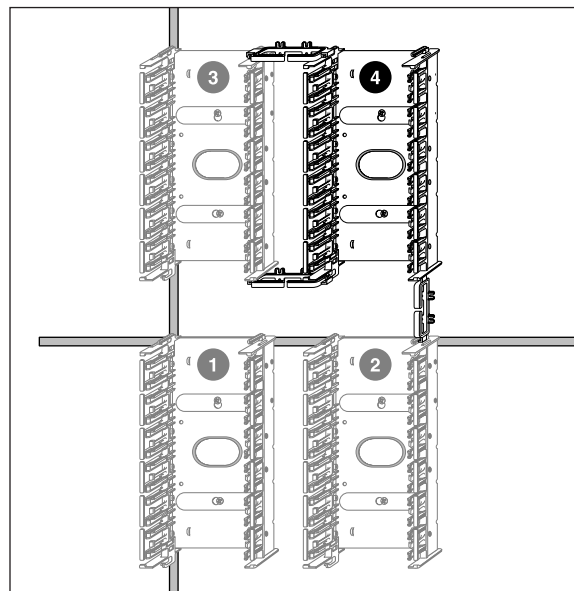
5 Third mount.

Install third mount above the first mount using two distribution rings. Check vertical alignment and secure the mount. Remove distribution rings.



6 Fourth mount.

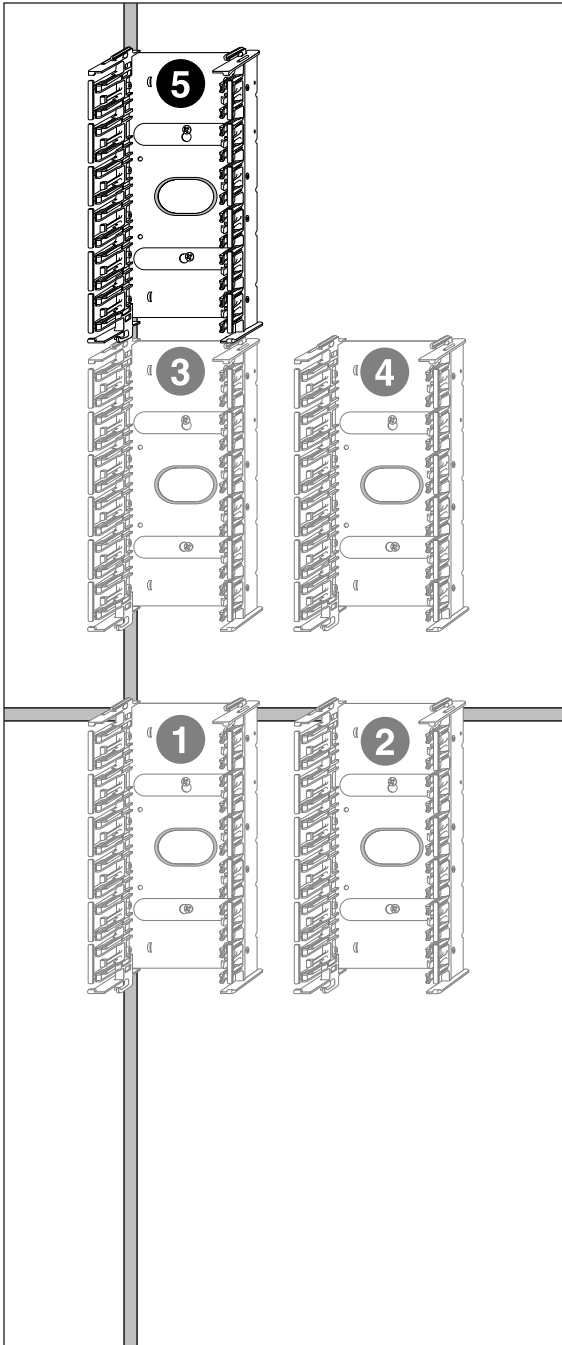
Distance fourth mount from the right side of the third mount with two distribution rings and secure above the second mount with one distribution ring. Check vertical and horizontal alignment and secure the mount. Remove distribution rings.



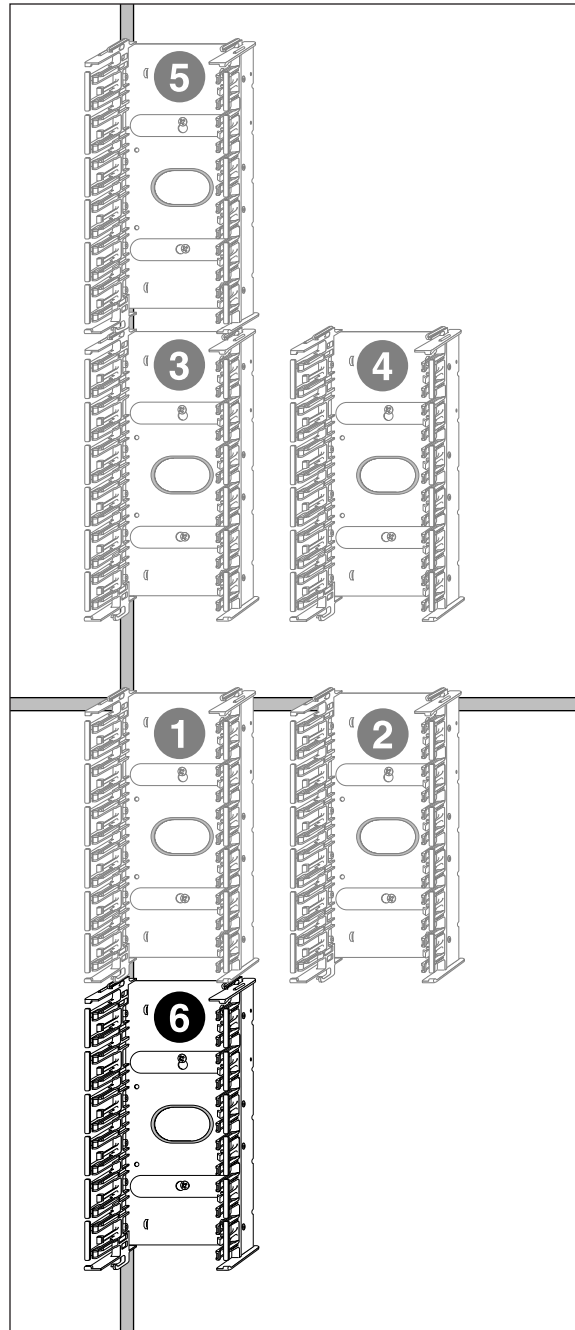
—continued—

Procedure 4-1
Installation of mounts (continued)

7 Fifth mount.
 Install the fifth mount directly above and against the third mount. Check vertical alignment and secure mount.



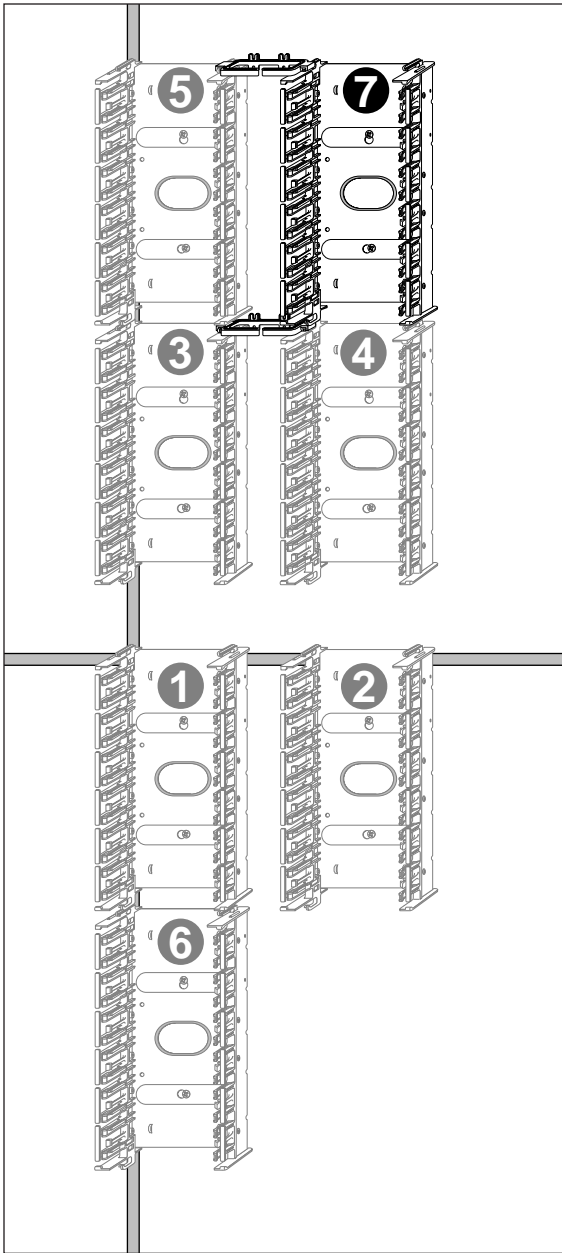
8 Sixth mount.
 Install the sixth mount directly under and against the first mount. Check vertical alignment and secure mount.



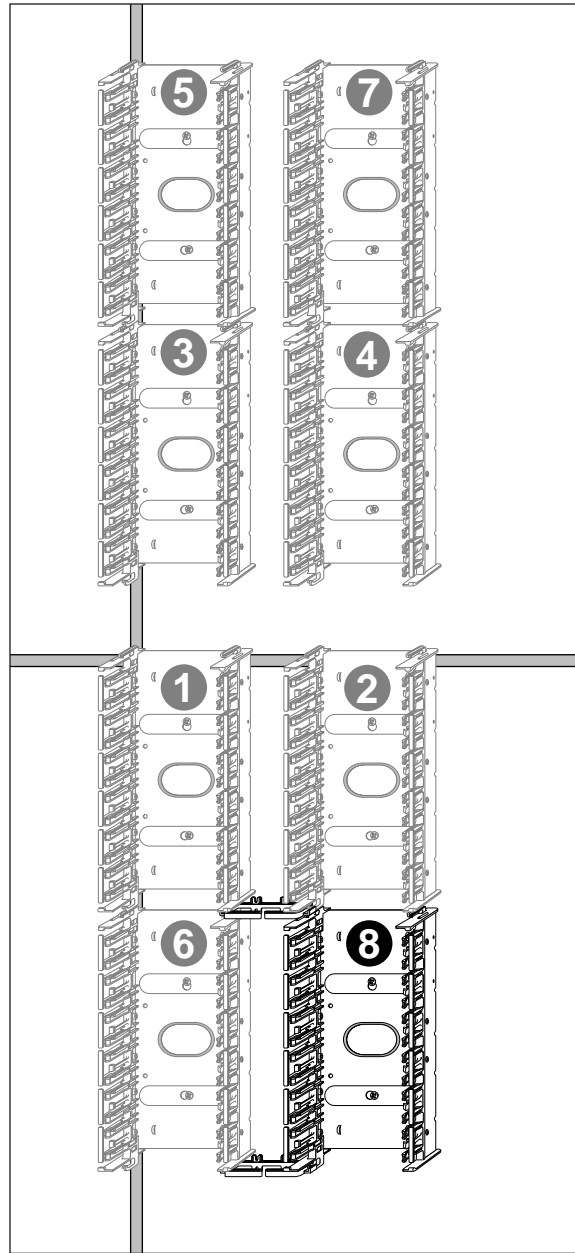
—continued—

Procedure 4-1
Installation of mounts (continued)

9 Seventh mount.
Distance seventh mount from the right side of the fifth mount with two distribution rings and install directly against the fourth mount. Secure the mount and remove rings.



10 Eighth mount.
Distance eighth mount from the right side of the sixth mount with two distribution rings and install directly below the second mount. Secure the mount and remove rings.

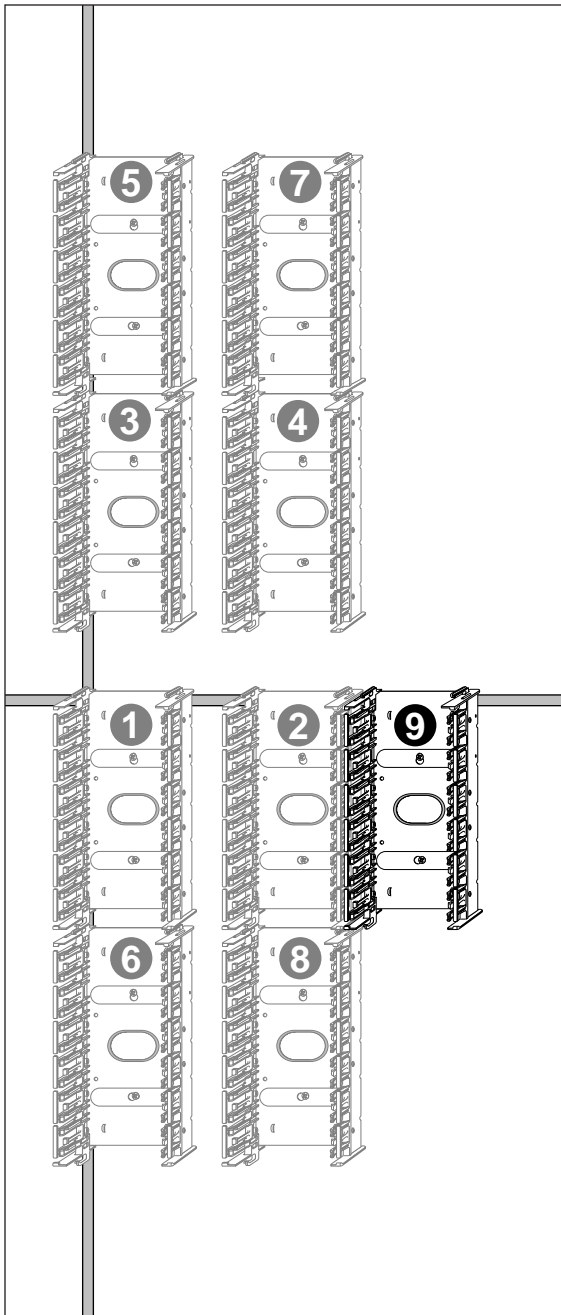


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Procedure 4-1
Installation of mounts (continued)

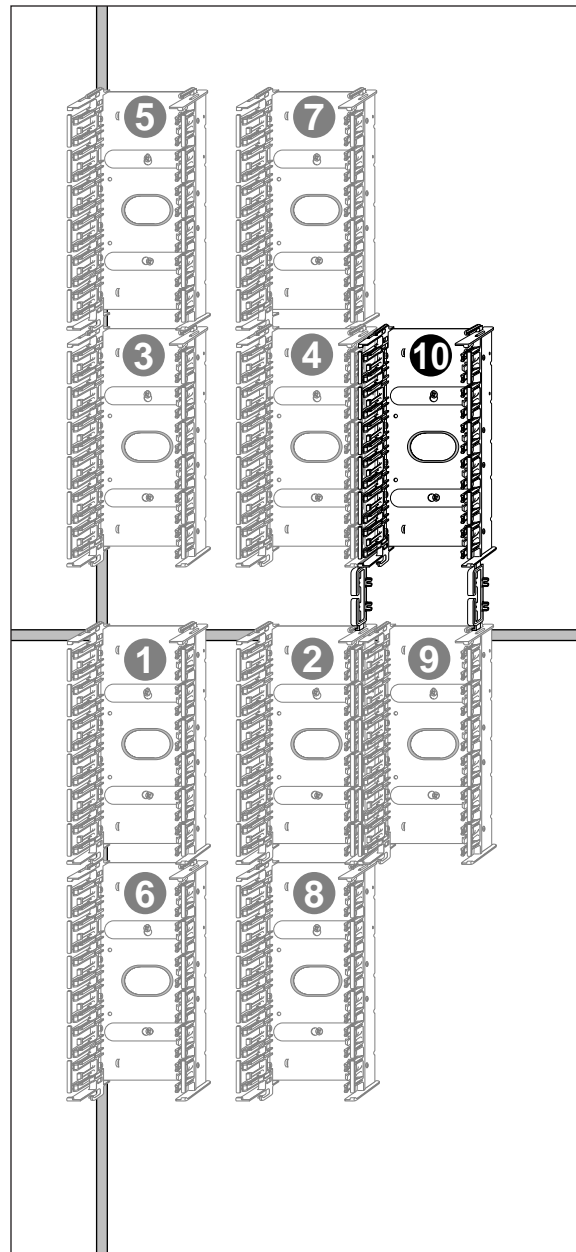
11 Ninth mount.

Install ninth mount directly on the right side of the second mount. Check horizontal alignment and secure the mount.



12 Tenth mount.

Distance tenth mount above the ninth mount with two distribution rings and install directly on the right side of the fourth mount. Secure the mount and remove rings.



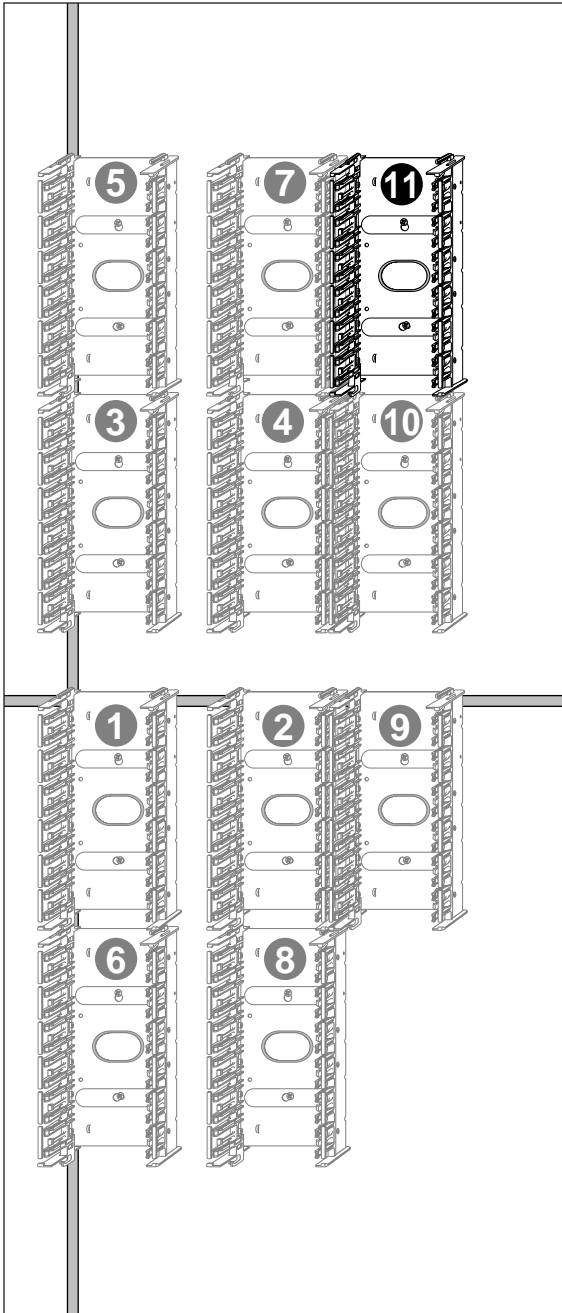
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4-8 Installation of mounts

Procedure 4-1 Installation of mounts (continued)

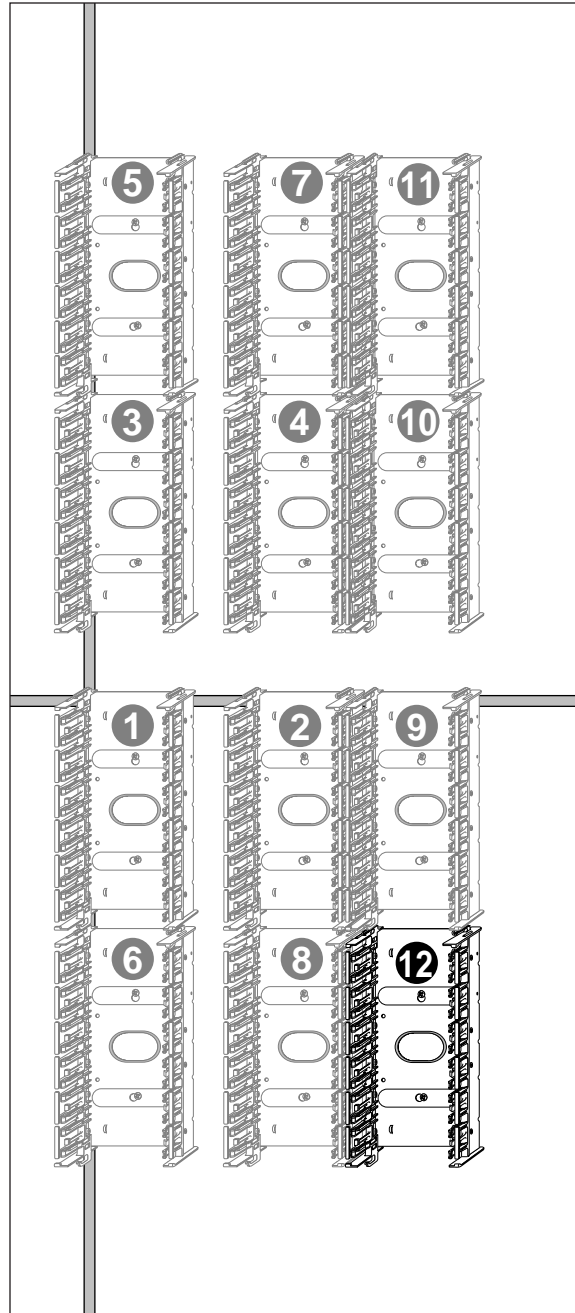
13 Eleventh mount.

Install eleventh mount directly against seventh and tenth mounts. Secure the mount.



14 Twelfth mount.

Install twelfth mount directly against eighth and ninth mounts. Secure the mount.

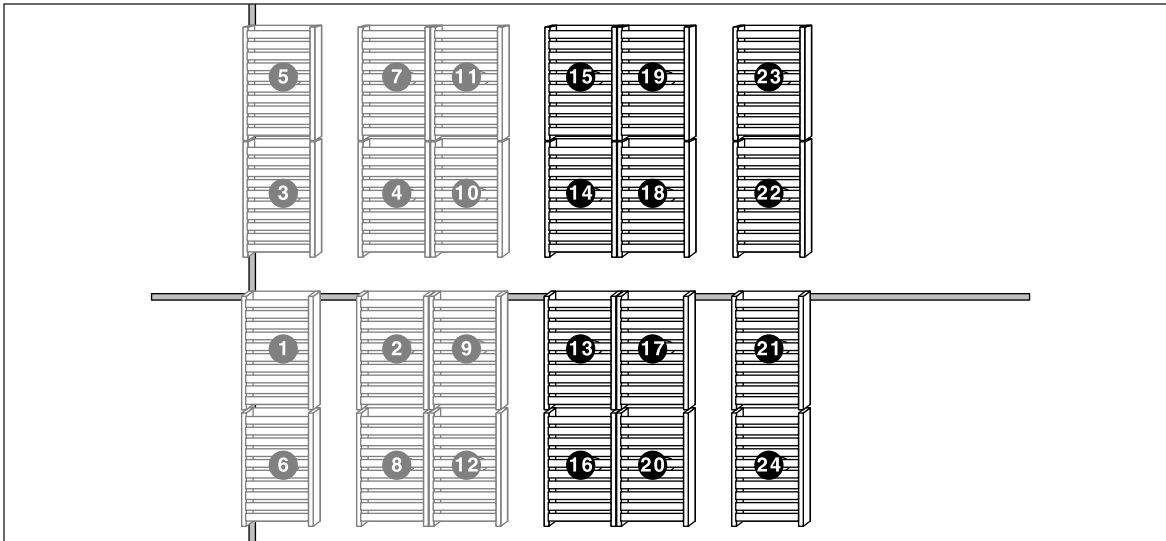


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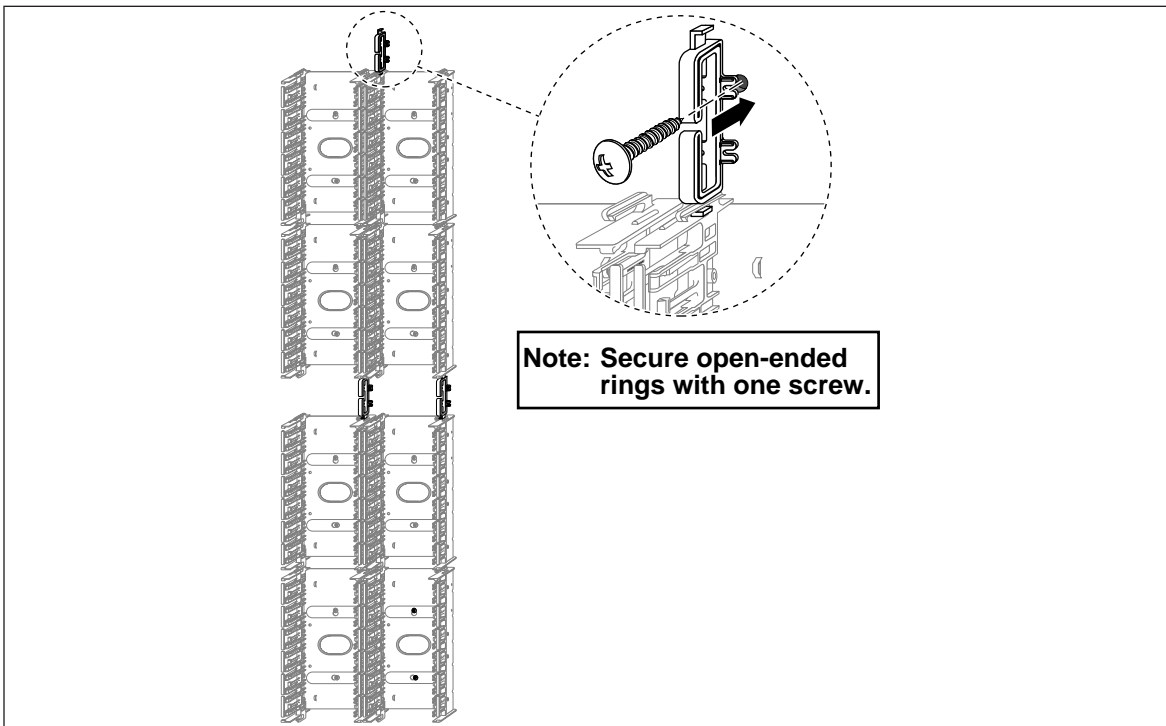
Procedure 4-1
Installation of mounts (continued)

15 Subsequent mounts.

Install the remaining mounts required for the initial installation as previously described (refer to Figures 4-1 or 4-2 for final installation diagram).



16 Install distribution rings for cross-connect wire routing for incoming and outgoing cable routing.



—end—

Cable routing, preparation and grounding

Procedure 5-1

Multi-pair backbone cable – NT-DGR Category 5 or ATMM Category 3

Tools

Skinning knife or sheath removing tool, side-cutting pliers.

Material

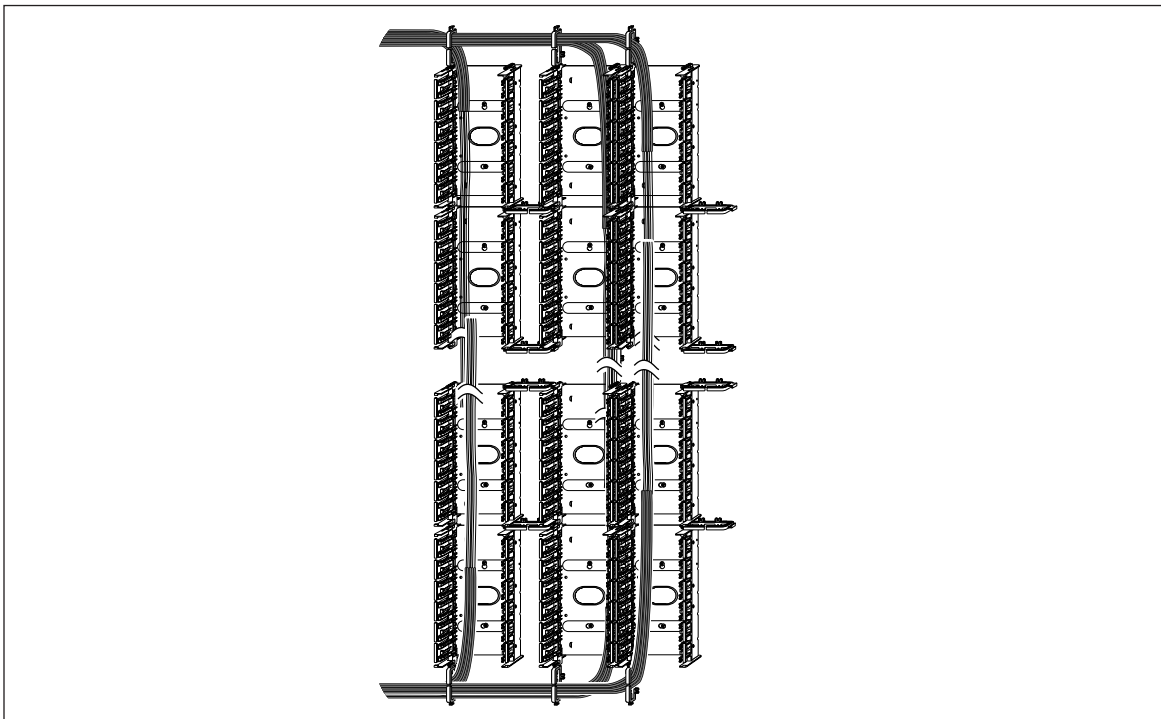
Cable ties (size as required).

References

Engineering work plan.

Figure 5-1

BIX IDC wall mount installation – Cable routing



—continued—

5-2 Cable routing, preparation and grounding

Procedure 5-1

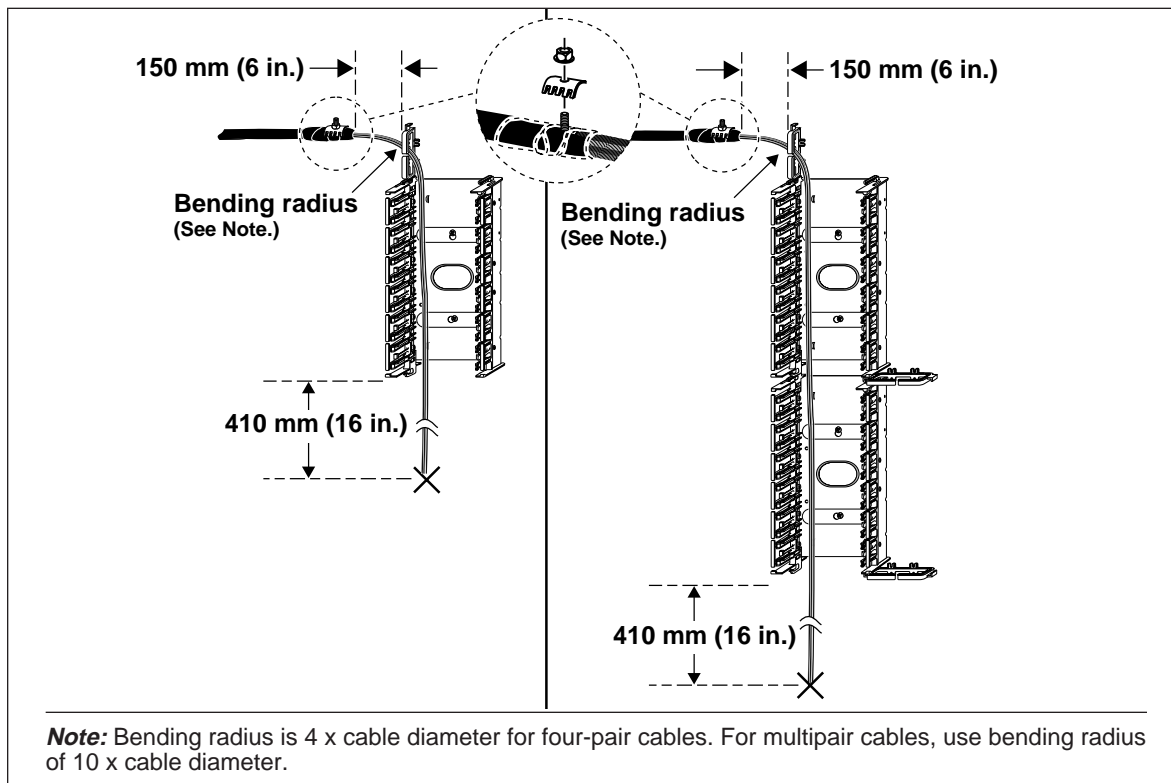
Multi-pair backbone cable – NT-DGR Category 5 or ATMM Category 3 (continued)

Step	Procedure
1	Allow a minimum cable length of 410 mm (16 in.) past the mount, where the cable will be terminated.
2	Remove the cable sheath approximately 150 mm (6 in.) from the first distribution ring location.
3	Install an approved bonding device.
4	Tape the bonding device and the stripped cable 50 mm (2 in.) past cable bond. Make sure not to overtighten tape around the cable bundle. Leave the plastic binding wrap around wire bundles until the cable enters into the appropriate mount.
5	Secure the cable bundle with a cable tie at the mount entry point, opposite of vertical channel. At all times, do not lose cable and binding group identification.

WARNING
Do not overtighten wire bundle as it may affect cable performance.

6	Ground each cable according to standard practice.
7	Dress cable bundles neatly, with cable ties.

Figure 5-2
Multi-pair backbone cable



—end—

Procedure 5-2**Distribution cable, unshielded twisted pairs (UTP), 4-pair and multipair cables**

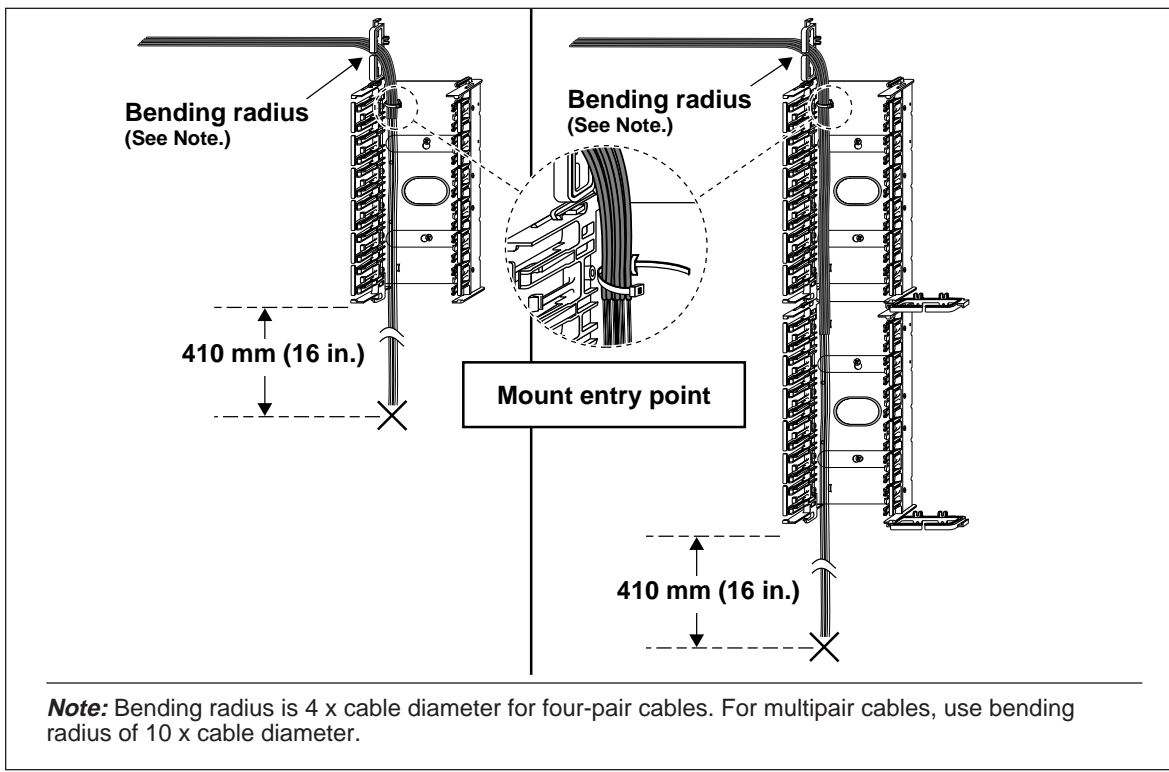
Note: A multipair UTP cable may also be used as a backbone cable.

Step	Procedure
1	Allow a minimum cable length of 410 mm (16 in.) past the mount, where the cables will be terminated.
2	Group distribution cables in bundles, to a maximum of six 4-pair cables or one 25-pair binder group, per connector. Bundle groups of cables up to each mount's maximum capacity.
3	Route cables through the appropriate distribution ring(s) and into the mounts where they will be terminated.
4	Secure cable bundle(s) with cable ties at the appropriate mount entry point. At all times, do not lose wire or binder groups identification.
5	Remove the cable sheath to the level of the connector the cable will be terminated. Use the provided rip cord for sheath removal. Identify each 4-pair distribution cable with its station number or the 25-pair with its binder group number.

WARNING

Do not overtighten wire bundle as it may affect cable performance.

Figure 5-3
Distribution cable



Cable termination

Procedure 6-1

Insertion and removal of BIX IDC connectors

Tools

QTBIX16A connecting tool, side-cutting pliers.

Material

QCBIX type of connectors, cable ties 90 mm (3.5 in.) long.

References

Engineering work plan.

Warning

Cable termination is always done from left to right.
(i.e.: The first pair is always on the left side of the connector.)

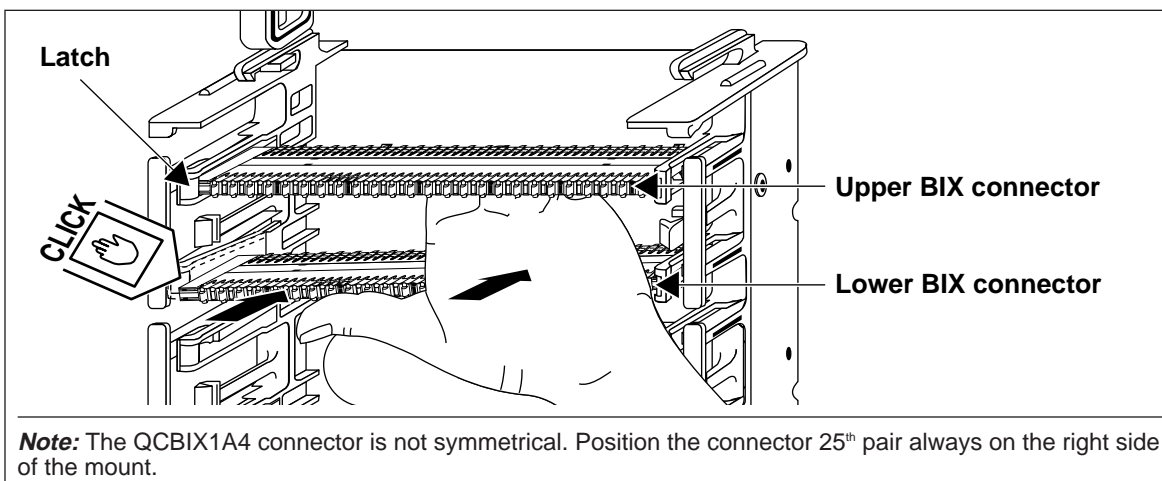
General

Insertion and removal procedure of BIX IDC connectors:

Place one end of the connector into the appropriate latch of the fanning strip and push the other end of the connector into the mount. Do not insert both ends of the connector at the same time.

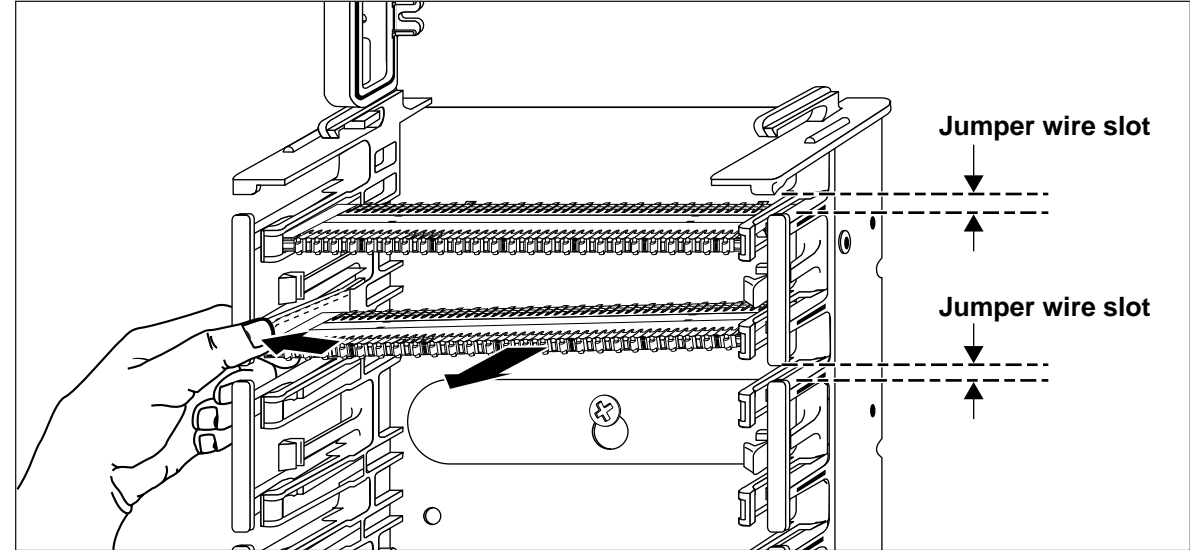
Figure 6-1

Insertion of BIX connector



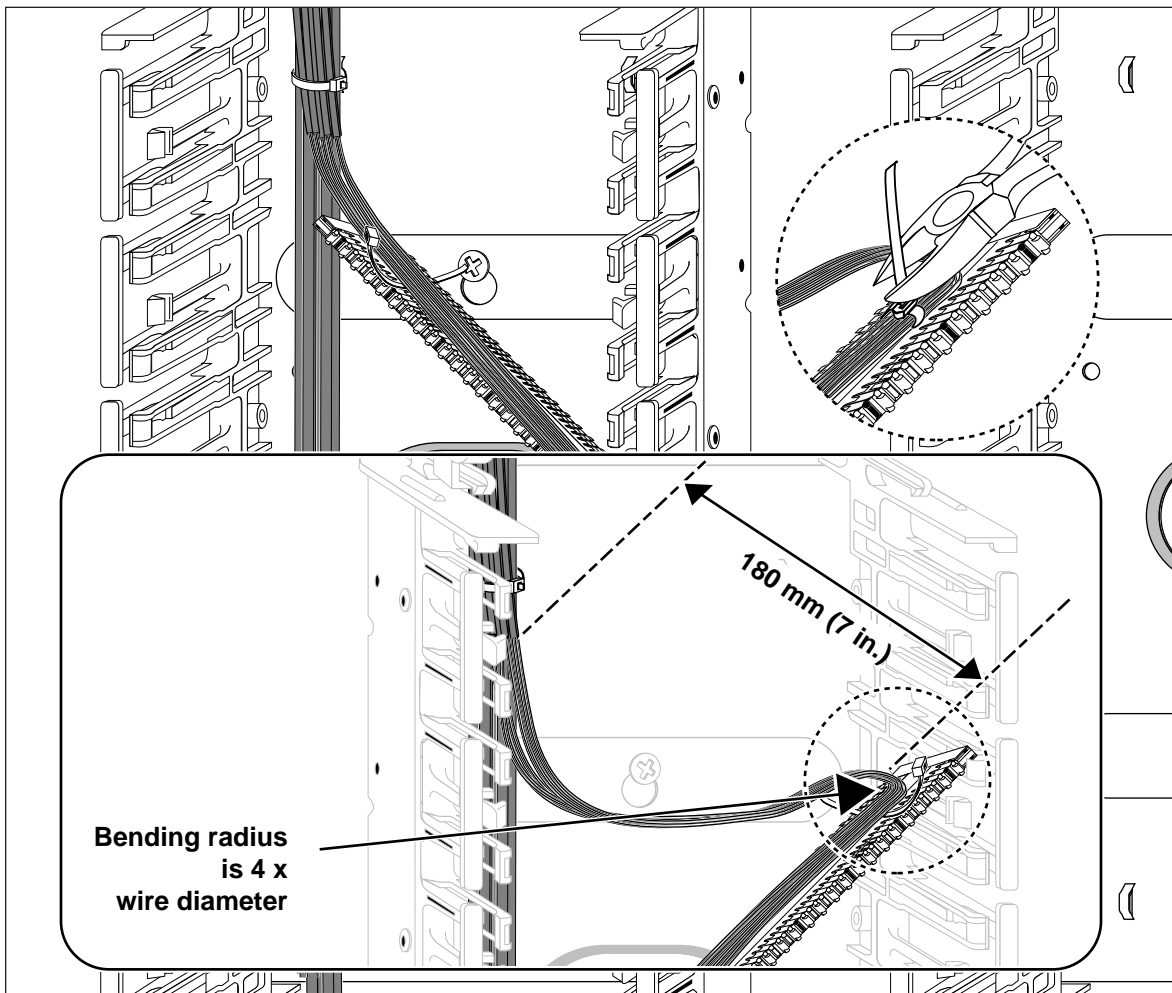
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Procedure 6-1
Insertion and removal of BIX IDC connector (continued)

Step	Procedure
	<p>Remove the BIX connector by releasing the latch at one end and pulling the connector forward.</p>
Figure 6-2	Removal of BIX connector
	
Groups or pairs of connectors in the mount:	
<p>For termination purposes only, the BIX connectors in the mount are considered in pairs, one upper connector and one lower connector (refer to Figure 6-1). The jumper wire slots in the fanning strip (refer to Figure 6-2) provide a convenient way of dividing the connectors into five groups (with 10A mount), six groups (with 12E mount) and one group (with 10C mount).</p>	
<p>Termination of any connector is always from left to right, and top to bottom. The upper BIX connector is always terminated first.</p>	
—end—	

Procedure 6-2
Upper connector wire termination

Step	Procedure
1	Insert a cable tie into the connector (refer to Step 3 in this procedure).
2	Place the wire bundle (the six 4-pair cables or one 25-pair cable) along the top of the connector and loosely fasten the cable tie.
3	Slide the connector along the wire bundle to give approximately 180 mm (7 in.) of slack from the end of the cable sheath to the cable tie. Tighten the cable tie and trim off excess.

**Warning**

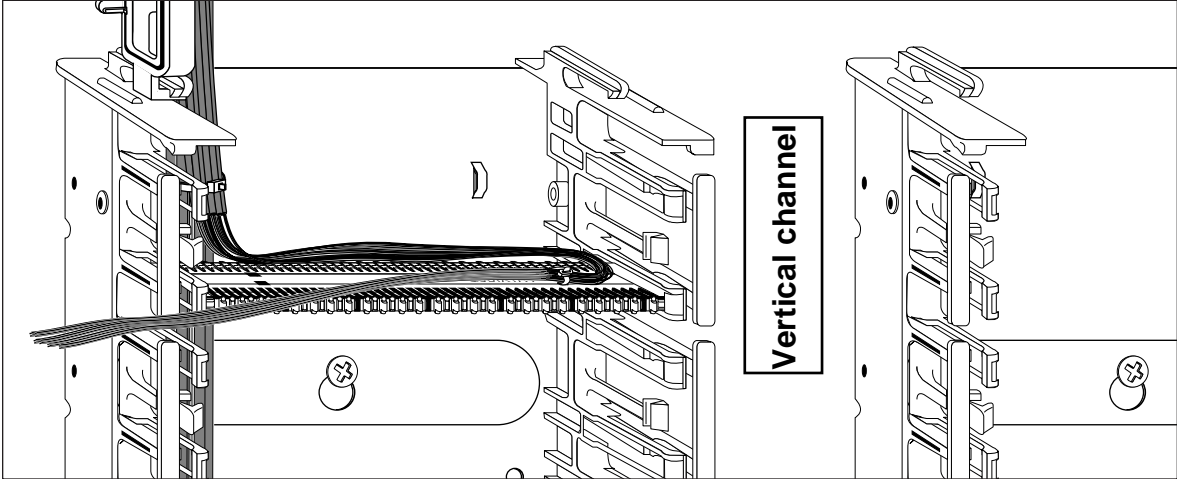
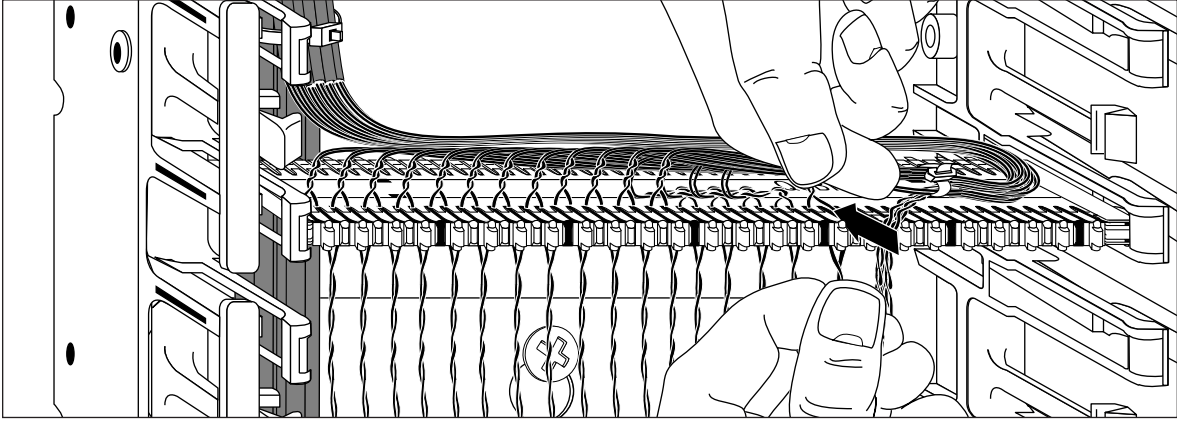
Do not overtighten wire bundle as it may affect cable performance.

—continued—

6-4 Cable termination

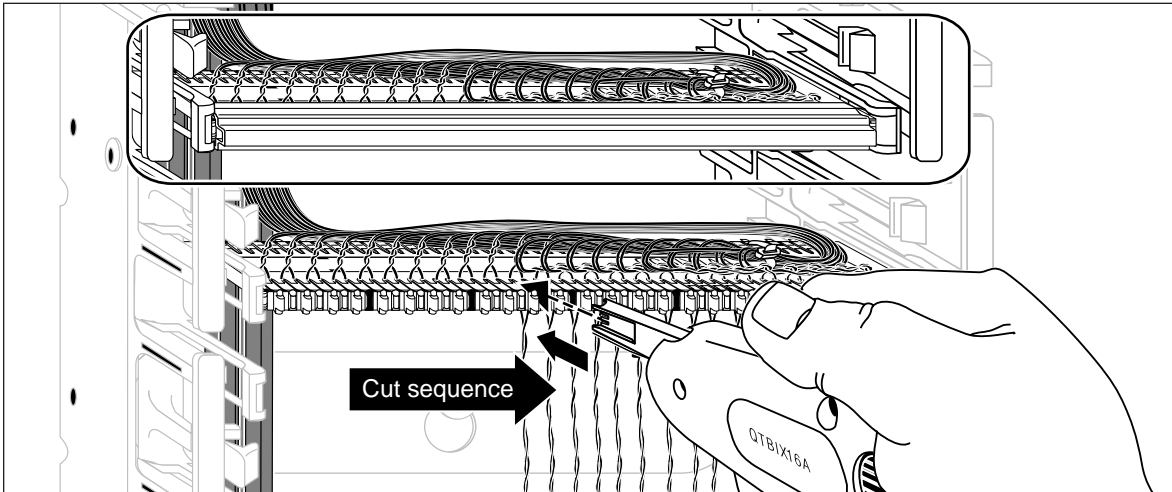
Procedure 6-2

Upper connector wire termination (continued)

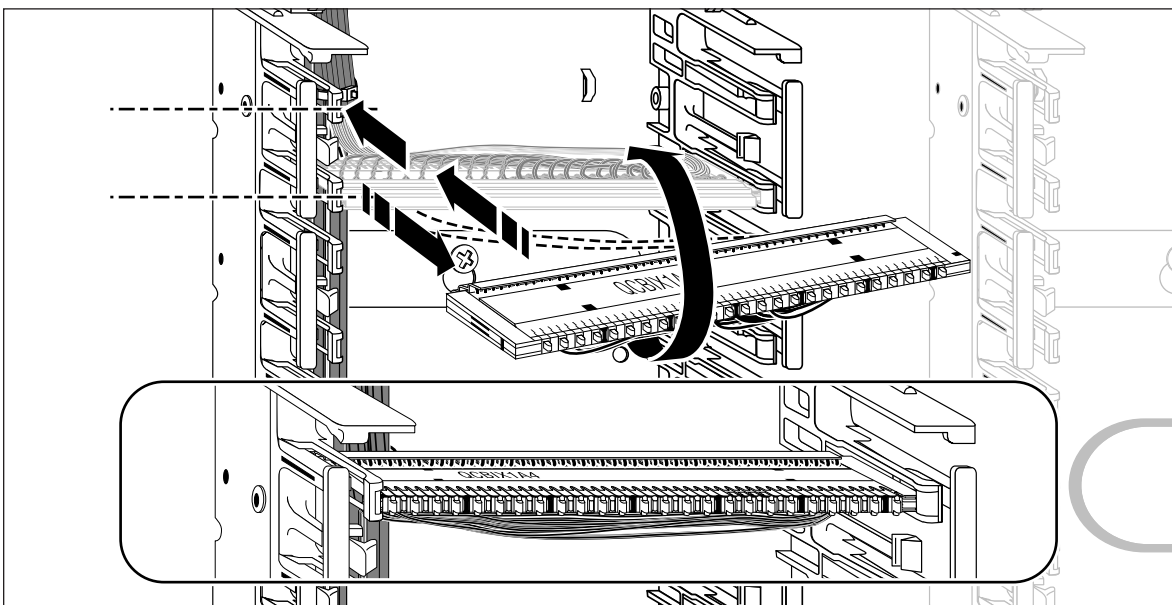
Step	Procedure
4	Insert the connector in the lower BIX connector position mount.
 A technical line drawing showing a cable bundle being inserted into a BIX connector position mount. The cable bundle is shown entering from the left and passing through a series of ports. A vertical channel is labeled "Vertical channel" in a box. The diagram shows the internal structure of the connector and the position of the cable bundle.	
<p>Note the following:</p> <ul style="list-style-type: none">• The wire bundle should be on top of the connector.• Cable tie on the BIX connector should be close to the vertical channel.• Cable descending inside the mount should be on the opposite side of the vertical channel.	
5	Pick wire pairs and insert them into the connector. No insertion sequence is required as long as the wires are inserted into the proper positions in the BIX connector (as per standard wiring color code).
<p>Note: Use the pair splitter on the front edge of the connector to separate tip and ring and reduce wire untwisting. The wire pairs should be pointing downwards.</p>	
 A technical line drawing showing a hand using a pair splitter to separate wire pairs in a BIX connector. The hand is shown holding the pair splitter and applying it to the front edge of the connector. The wire pairs are shown being separated and pointing downwards. The diagram shows the internal structure of the connector and the position of the wire pairs.	
—continued—	

Procedure 6-2
Upper connector wire termination (continued)

Step	Procedure
6	Terminate and cut off the ends of wires with the QTBI16A connecting tool. The tool select button should be in the CUT position. The cutting blade should be pointing downward.
7	Cut off cable tie in the connector and insert a wire retainer (optional for 4-pair cables).



- 8 Remove the connector from the mount. Flip the connector over so the wire bundle is on the bottom and re-insert it into the upper BIX connector position. Dress the cable slack under the connector.



—end—

Procedure 6-3
Lower connector wire termination

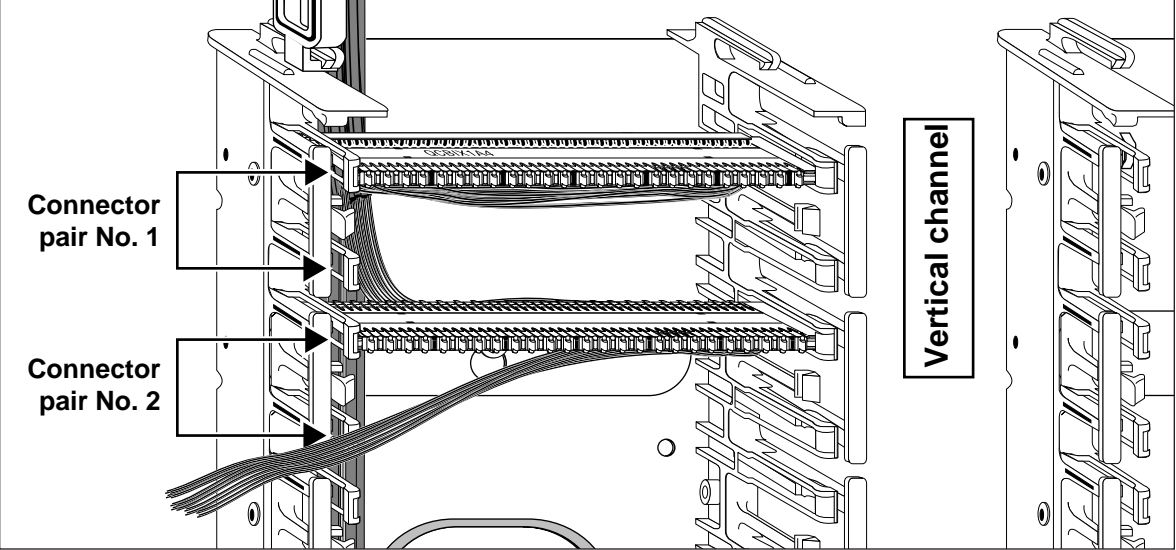
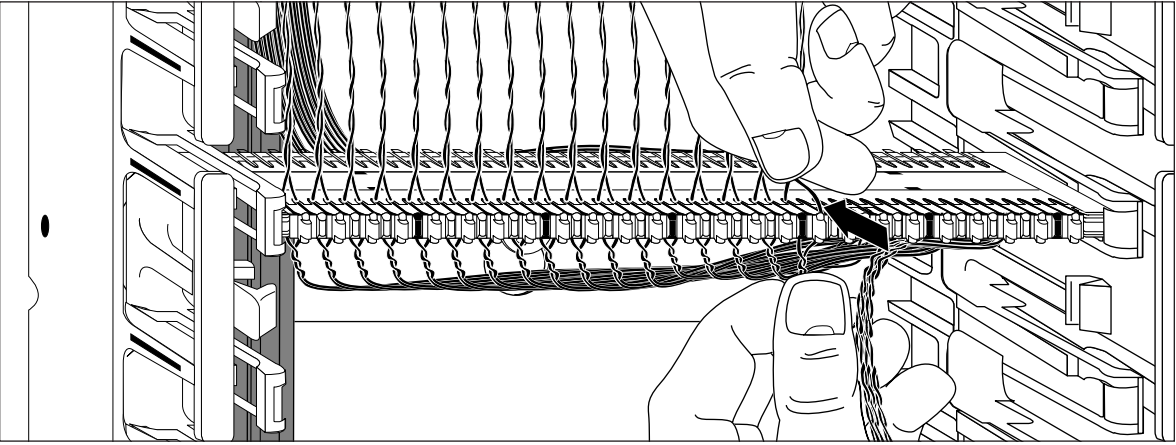
Step	Procedure
1	Insert a cable tie into the connector.
2	Place wire bundle (the six 4-pair cables or one 25-pair cable) along the bottom of the connector and loosely fasten the cable tie.
3	Slide the connector along the wire bundle to give approximately 180 mm (7 in.) of slack from the end of the cable sheath to the cable tie. Tighten the cable tie and trim off excess.

The diagram illustrates the lower connector wire termination process. It shows a cable bundle being inserted into a connector, with a cable tie used to secure it. A callout shows the cable tie being tightened. A larger callout shows the cable bundle being slid to create a 180 mm (7 in.) slack, with a note indicating the bending radius is 4 times the wire diameter.

Warning
Do not overtighten wire bundle as it may affect cable performance.

—continued—

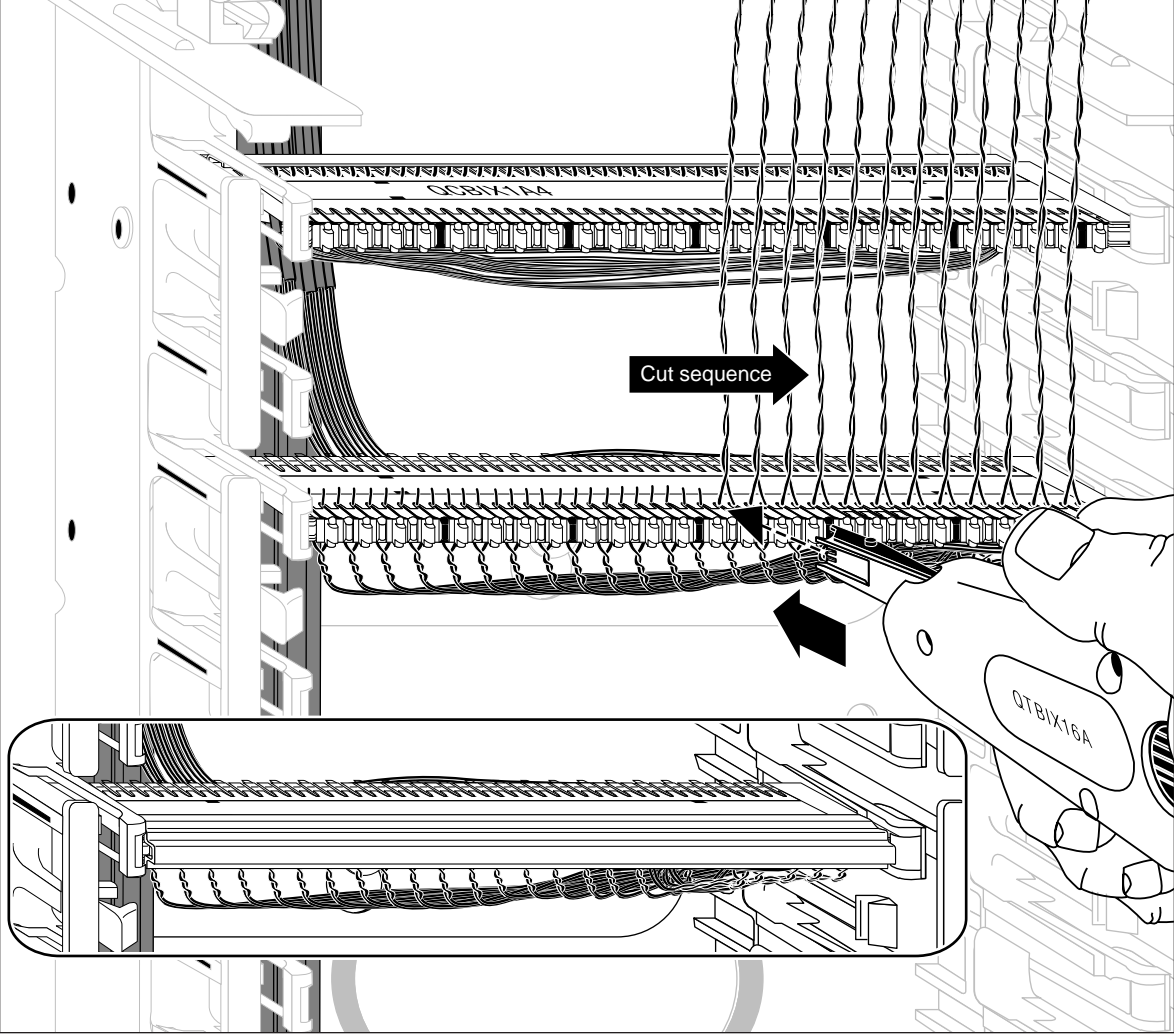
Procedure 6-3
Lower connector wire termination (continued)

Step	Procedure
4	Insert lower connector in the mount.
	
<p>Note the following:</p> <ul style="list-style-type: none"> • The wire bundle should be at the bottom of the connector. • Cable tie on the BIX connector should be close to the vertical channel. • Cable descending inside the mount should be on the opposite side of the vertical channel. 	
5	Pick wire pairs and insert them into the connector. No insert on sequence is required as long as the wires are inserted into the proper positions in the BIX connector (as per standard wiring color code).
<p>Note: Use the pair splitter on the front edge of the connector to separate tip and ring and reduce wire untwisting. The wire pairs should be pointing upwards.</p>	
	
—continued—	

Procedure 6-3

Lower connector wire termination (continued)

Step	Procedure
6	<p data-bbox="310 386 1365 478">a) Terminate and cut off the ends of wires with the QTBI16A connecting tool. The tool select button should be in the CUT position. The cutting blade should be positioned upward.</p> <p data-bbox="310 512 1365 575">b) Cut off the cable tie on the connector and insert the wire retainer (optional for 4-pair cables).</p>

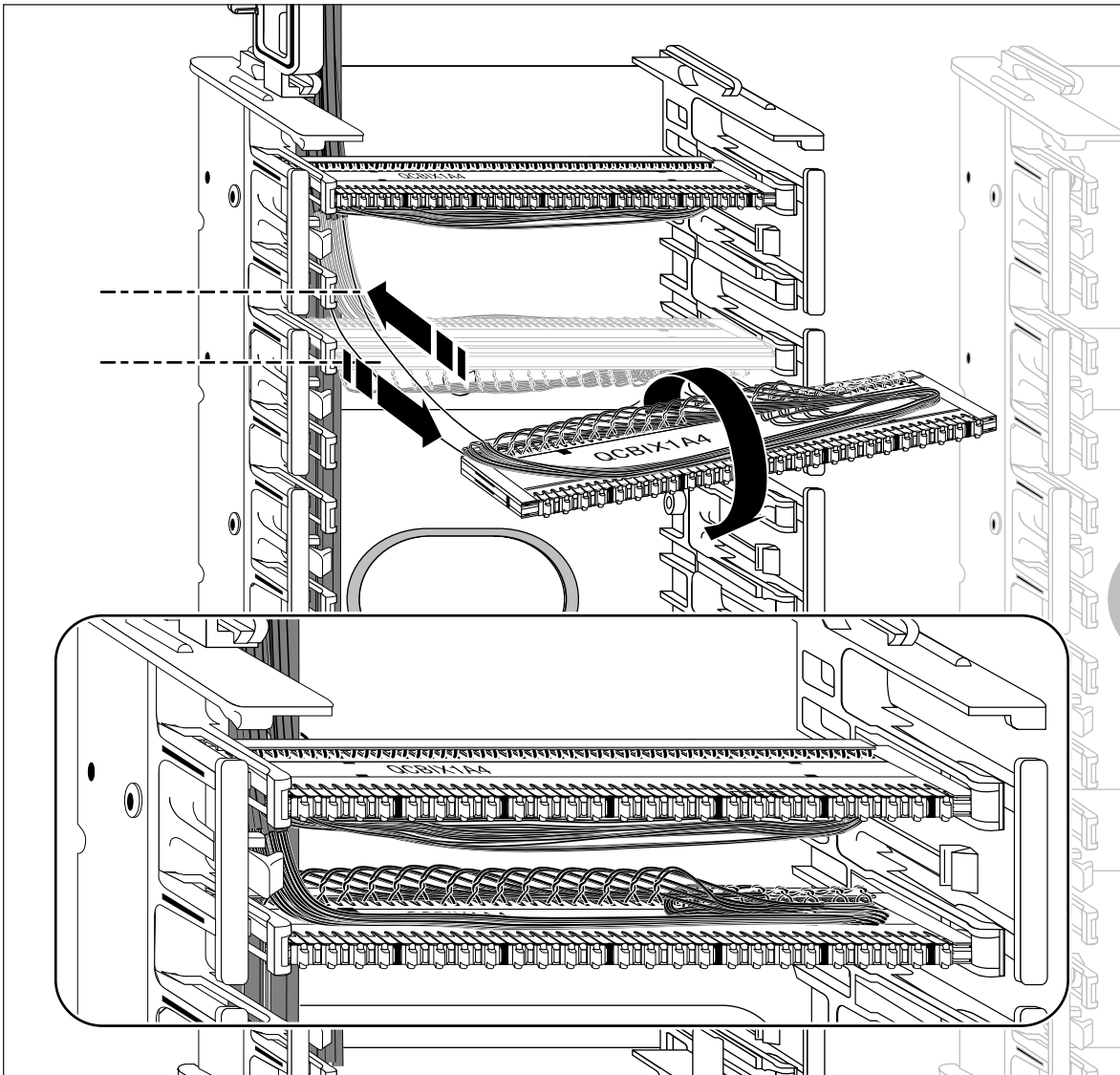


—continued—

Procedure 6-3
Lower connector wire termination (continued)

Step Procedure

- 7** Remove the connector from the mount. Flip the connector over so the wire bundle is on top and re-insert it into the mount. Dress the cable slack in the connector space between the upper and the lower connectors.



- 8** The other connector termination should follow the same procedure as above.

—end—

Installation and removal of designation strip and label

Procedure 7-1 Designation

Tools

Pen or pencil

Material

QSBIX20A designation strip, appropriate BIX labels

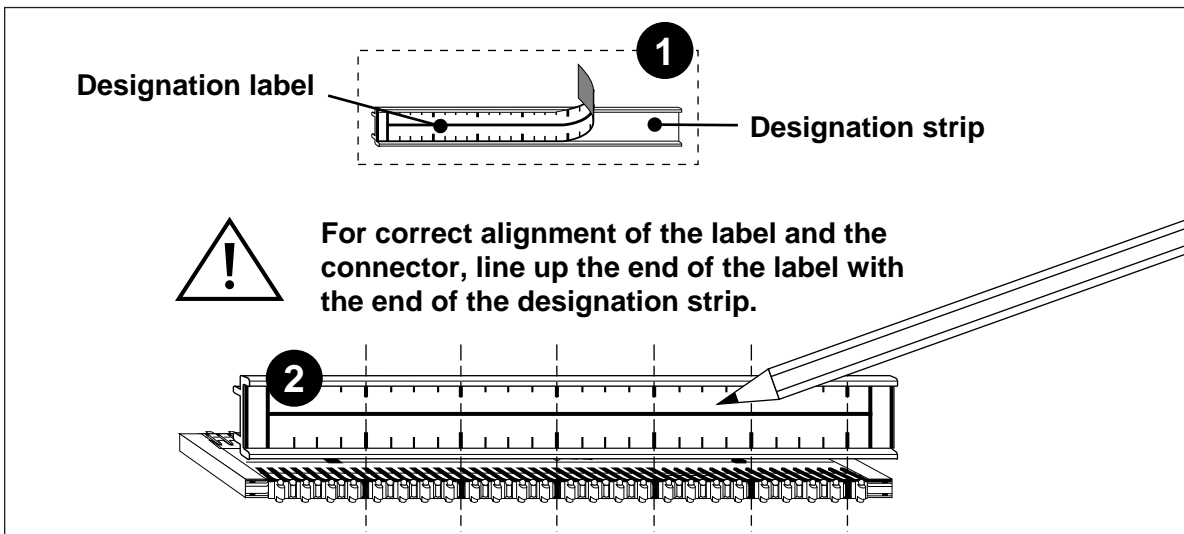
References

Engineering work plan.

Step Procedure

INSTALLATION

Figure 7-1
Installation of the designation strip



—continued—

7-2 Installation and removal of designation strip and label

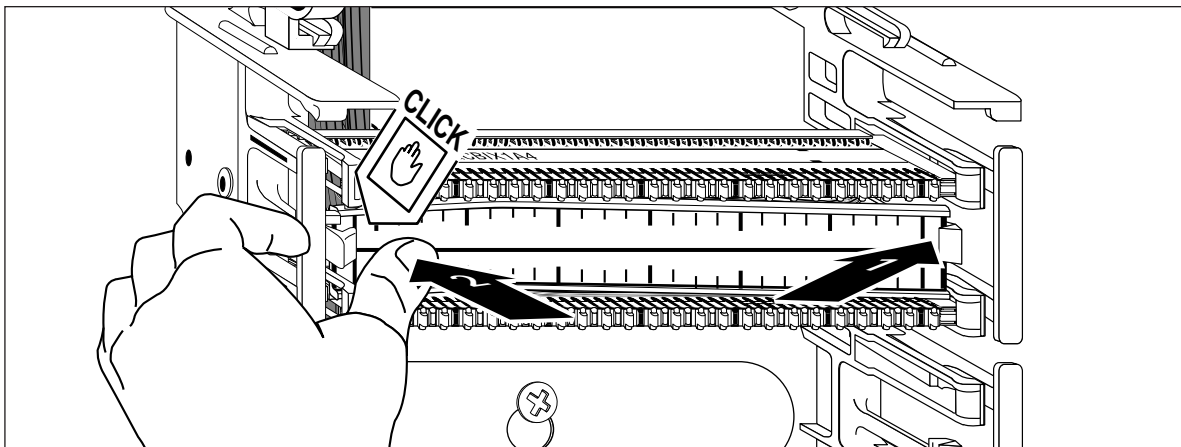
Procedure 7-1

Installation and removal of designation strip and label (continued)

- 1 Select the designation label of the correct type and color in accordance with the engineering plan.
- 2 Attach the adhesive label to the designation strip.
- 3 Mark any information on the designation label with a pen or pencil in accordance with the engineering plan.
- 4 Insert the designation strip in the mount (between the upper and the lower connectors).

Figure 7-2

Insertion of the designation strip

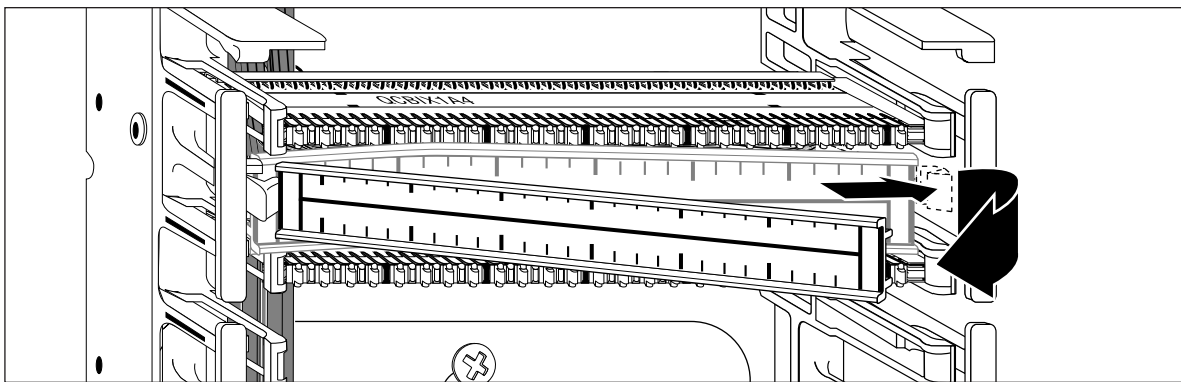


REMOVAL

- 5 To remove the designation strip, press back on one side of the plastic snap of the fanning strip. The designation strip will pop out on the opposite side.

Figure 7-3

Removal of the designation strip



—end—

Cross-connection

Procedure 8-1

Cross-connection

Tools

QTBIX16A connecting tool, long-nose pliers

Material

“B” Plus cross-connect wire, 0.5 mm (24 AWG), Category 5

References

Engineering work plan.

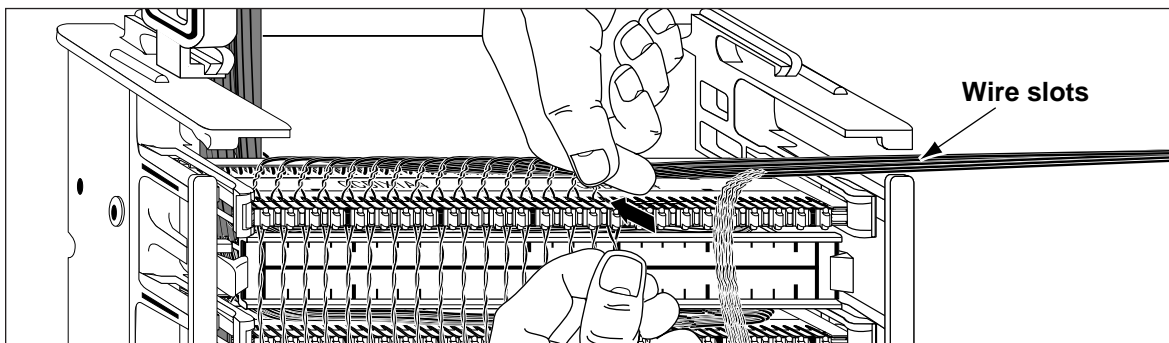
General

Install cross-connect wires according to the engineering cross-connect running list (or service order).

Do not terminate more than one wire in one terminating position of the connector.

Step Procedure

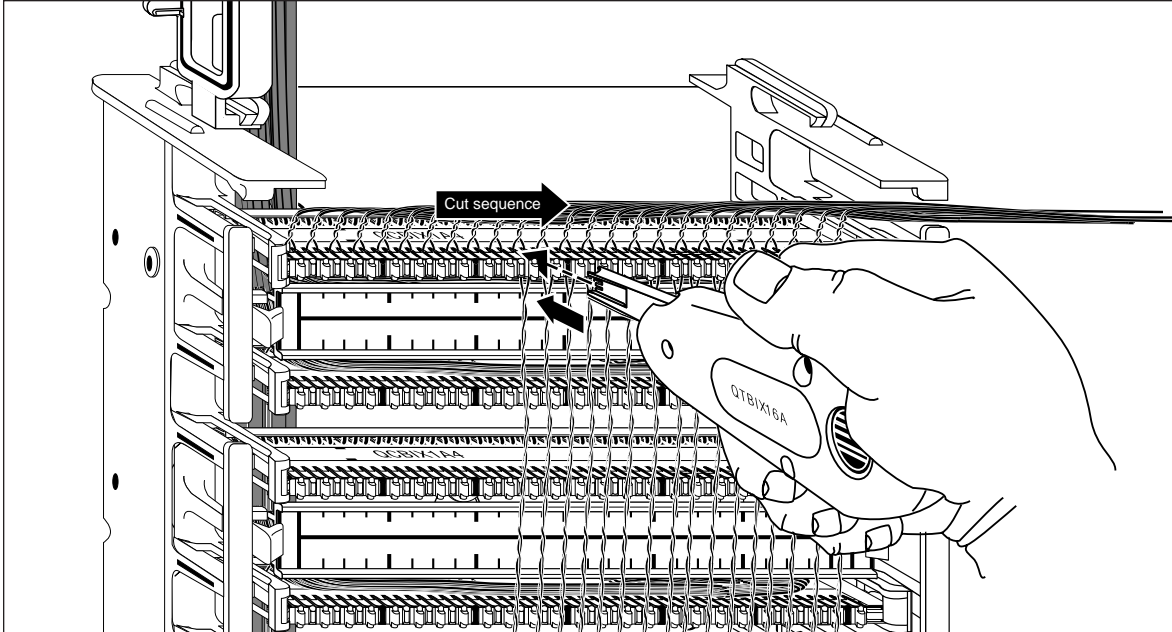
- 1 Insert the cross-connect wire in the connector following standard wiring color code at the designated location. Do not untwist the wire pairs more than half an inch. The wire end always points towards the designation strip. Use the pair splitter on the front edge of the connector to reduce wire untwisting.



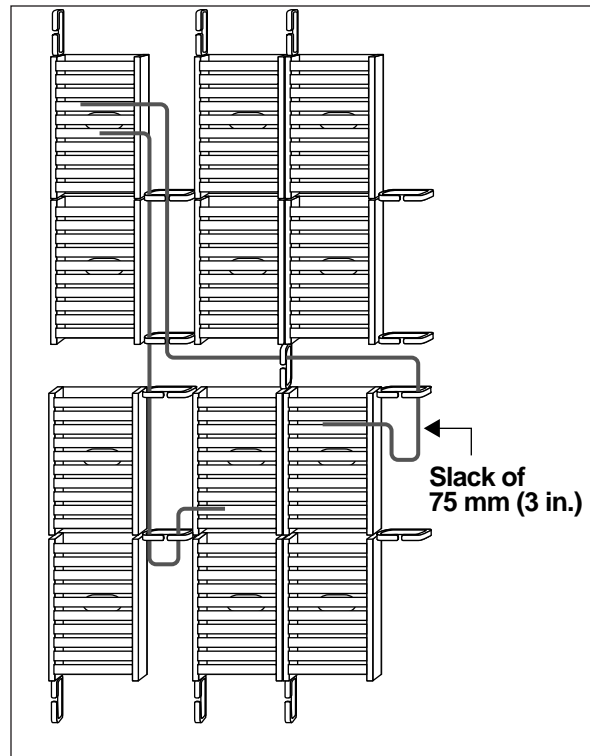
—continued—

Procedure 8-1
Cross-connection (continued)

- 2 Terminate the cross-connect wire with the QTBIK16A connecting tool.



- 3 Route the cross-connect wire parallel to connector, through the fanning strip slot. Feed through the appropriate distribution ring(s). Insert the wire in the slot of the fanning strip at the second location.
- 4 Allow 75 mm (3 in.) of looped slack wire. (The width of the hand is an approximate measurement of the slack necessary.) Insert and terminate wire pair(s) into the second specified connector at the appropriate location.
- 5 Dress the slack wire outside and parallel with the mount.



—continued—

Procedure 8-1
Cross-connection (continued)

REMOVAL OF CROSS-CONNECT WIRE	
6	Remove the cross-connect wire from the connector by pulling outward and away from the connector. Unwanted cross-connect wires must be removed from connector and discarded.
—end—	

Testing

Procedure 9-1 Testing

Tools	
<p>QTBIX17A test probe, QTBIX21A 25-pair test shoe, QTBIX22A 25-pair test connector</p>	
Material	
None required	
References	
Engineering work plan.	
General	
<p>Testing tools are used as adapters to have access points to one or more pairs in the connector. Test set(s) will be required for testing the installed system in accordance with the engineering plan.</p>	
Step	Procedure
SINGLE PAIR TESTING	
1	<p>Insert the QTBIX17A Test Probe into the BIX connector, at the designated position, with the test probe centered over the pair splitter.</p> <p>Notes:</p> <p>Use additional test probes to test more than one circuit at a time.</p> <p>On the test probe, the RED is connected on the right side and the BLACK is connected on the left side.</p>
—continued—	

9-2 Testing

Procedure 9-1 Testing (continued)

Step	Procedure
2	The test probe may be used in the lock or no-lock position. When the test probe is used in the NO-LOCK position, the test probe must be held against the connector manually to conduct the test. When the test probe is used in the LOCK position, the test probe will be locked onto the connector.
3	Remove the probe either by unlocking the test probe or by using an up-down rocking motion.
25-PAIR TESTING	
TEST CONNECTOR	
1	<p>Insert the QCBIX22A test connector into the BIX connector, align the pair splitter of the connector between the plungers of the test connector. The test connector will be locked on both sides of the mount fanning strip.</p> <p>Ensure that the spring clips at each end of the test connector are fully engaged in the fanning strip.</p> <p>With the test connector in position, the top row of exposed contacts provides access to the left conductors of the wire pairs and the bottom row provides access to the right conductors of the wire pairs.</p>
2	Remove the test connector by releasing the spring clips at each end of the test connector simultaneously.
TEST SHOE	
1	<p>Insert the QCBIX21A test shoe into the BIX connector, align the pair splitter of the connector between the plungers of the test shoe. The test shoe will be locked onto both sides of the fanning strip.</p> <p>Ensure that the spring clips at each end of the test connector are fully engaged in the fanning strip.</p>
2	To test a BIX connector with the 25-pair test shoe, connect the 25-pair Cinch-Jones™ connector, located at the other end of the cable, to the appropriate test set.
3	Remove the test shoe by releasing the spring clips at each end of the test shoe simultaneously.
—end—	

Servicing / maintenance

Procedure 10-1 Special service guard

Tools	
None	
Material	
QGBIX23A special service guard	
References	
Engineering work plan.	
Step	Procedure
1	Installation: Hold the QGBIX23A special service guard between thumb and forefinger and insert into the BIX connector, ensuring it is over a pair splitter.
2	Removal: Remove the guard by pulling it away from the connector.

Procedure 10-2 Replacing a distribution ring

Tools	
Screwdriver	
Material	
Replacement – QRBIX19A distribution ring	
References	
Engineering work plan.	
Step	Procedure
1	Un-hook and pull the distribution ring forward from mount(s). If one end of the ring is secured with a screw, remove the screw first.
2	Rotate the ring, remove the jumper wires.
3	Install a replacement ring in reverse order.

Procedure 10-3
Accessing the rear of a BIX IDC connector

Tools None	
Material None	
References Engineering work plan.	
Step	Procedure
1	Remove the designation strip
2	Release the connector from the mount on the side opposite the vertical channel.
3	Remove the connector by rotating outwards 180° horizontally. The jumper wires remain in the fanning strip. The connector may be reinserted into the mount in this position temporarily.
4	Replace the connector and the designation strip in reverse order.

Procedure 10-4
Replacing a mount

Tools Screwdriver, side-cutting pliers	
Material Replacement QMBIX type Mount, cable tie (size as required)	
References Engineering work plan.	
Step	Procedure
1	Cut and remove the cable tie that holds the cable groups at mount entry point.
2	Remove all designation strips and distribution rings. Do not lose designation location after replacement is completed.
3	Carefully remove the connectors with their associated jumper wires from the mount <ul style="list-style-type: none">• First, remove the lower five (or six) connectors and let them hang below• Second, remove the upper five (or six) connectors to empty mount The connectors can hang on their cables during mount replacement
4	Remove screws securing the mount and remove the mount.
—continued—	

Procedure 10-4
Replacing a mount (continued)

Step	Procedure
5	Install a new mount by repeating the above steps in reverse order. Use a new cable tie to secure cables at the mount entry point.
6	Dress all cables and jumper wires.
—end—	

Procedure 10-5
Replacing a cable

<p>Tools Side-cutting pliers, QTBI16A connecting tool</p> <p>Material Replacement Cable(s), cable tie (size as required)</p> <p>References Engineering work plan.</p>	
Step	Procedure
1	Remove the designation strip and carefully remove the jumper wires from the fanning strip.
2	Remove the connectors associated to the cable that is to be replaced.
3	Access the rear of the connector, as described in “Accessing the rear of a BIX IDC connector” procedure 10-3, steps 1 to 4. Cut cable tie. Do not remove jumper wires associated with this connector.
4	Remove the pairs of the cable that is to be replaced only. When the wires are incorrectly removed from the connector, small pieces of insulation may remain in the connector. Carefully remove any remaining small insulation pieces using long-nose pliers.
5	Remove and discard the old cable. Feed the new cable through the back of the connectors and allow a sufficient length of cable for termination.
6	Strip cable sheath to the required length.
7	Insert a new cable tie into the connector. Place new wire bundle on the connector and loosely fasten the cable tie. Slide the connector along the wire bundle to give a slack of approximately 180 mm (7 in.). Tighten the cable tie, and trim off the excess.
<p>CAUTION Do not overtighten wire bundle as it may affect cable performance.</p>	
—continued—	

Procedure 10-5
Replacing a cable (continued)

Step	Procedure
8	Insert the connector into the mount so that the jumper wires are located at the rear of the connector.
9	Terminate the cable pairs.
10	Remove the connector from the mount and flip 180°. The jumper wires are now on the front of connector.
11	Re-insert the connector in the mount and dress the wire slack between the two connectors.
12	Replace the jumper wires in the fanning strip and replace the designation strip.
—end—	

Procedure 10-6
Replacing an upper connector (no service interruption)

Tools Side-cutting pliers, QTBIX16A connecting tool	
Material Appropriate replacement BIX IDC connector, cable tie (size as required)	
References Engineering work plan.	
Step	Procedure
Note: A minimum of 80 mm (3 in.) of wire slack is required at the cable and at the cross-connect side to replace the connector without service interruption.	
1	Remove the designation strip.
2	Remove the jumper wires from the fanning strip.
3	Remove the lower connector from the mount and temporarily position it down, above the connector below.
4	Remove the upper connector from the mount and place it into the free lower connector position, as is.
5	Insert a replacement (new) connector into the upper connector position.
6	Fan out the jumper wires, from the connector to be replaced, parallel into the new connector, pair-by-pair, as is. Do not change polarity or rearrange pair positions.
—continued—	

Procedure 10-6**Replacing an upper connector (no service interruption) (continued)**

Step	Procedure
7	Terminate the jumper wires into the new connector with the connecting tool in the NO-CUT position.
8	Remove both connectors (damaged and new) from the mount simultaneously and flip them 180° (pair #1 should remain on the left side).
9	Remove the wire retainer and loosen the wires on the connector.
10	Re-insert the pair of connectors into the mount, simultaneously.
11	Loop back toward the new connector and fan out cable pairs, parallel into the new connector. The wires should be straight between the connectors.
12	Terminate the cable pairs into the new connector with the connecting tool in the CUT position.
13	Secure the terminated cable pairs in the new connector with a wire retainer (part number: P0660798).
14	Remove simultaneously and flip both connectors 180°, so that this time the jumper wires are on the front.
15	Insert both connectors into the mount.
16	Cut off the old connector by re-terminating the jumper wires in the new connector with the tool in the CUT position.
17	Discard the old connector.
18	Dress the wire bundles by folding them back under the wire retainer. Remove the connector from mount for this operation, so the wires will be on the other side of the new connector, between the upper and lower connector. Replace the connector in the mount.
19	Re-insert the lower connector into the mount in its original position. Re-dress the cable bundles in between the two connectors.
20	Route and dress the jumper wires as per the standard procedure and replace the designation strip.

—end—

Procedure 10-7
Replacing a lower connector (no service interruption)

Tools Side-cutting pliers, QTBI16A connecting tool	
Material Appropriate replacement BIX IDC connector, cable tie (size as required)	
References Engineering work plan.	
Step	Procedure
Note: A minimum of 80 mm (3 in.) wire slack is required at the cable and at the cross-connect side to replace the connector without service interruption.	
1	Remove the designation strip.
2	Remove the jumper wires from the fanning strip.
3	Remove the upper connector from the mount and temporarily position it upward, above the connectors.
4	Remove the lower connector from the mount and place it into the free upper connector position, as is.
5	Insert a replacement (new) connector into the lower connector position.
6	Fan out the jumper wires, from the connector to be replaced parallel into the new connector, pair-by-pair, as is. Do not change polarity or rearrange pair positions.
7	Terminate the jumper wires into the new connector with the connecting tool in the NO-CUT position.
8	Remove both connectors (damaged and new) from the mount simultaneously and flip them 180° (pair #1 should remain on the left side).
9	Remove the wire retainer and loosen the wire on the connector.
10	Re-insert the pair of connectors into the mount, simultaneously.
11	Loop back toward the new connector and fan out cable pairs, parallel, into the new connector. The wires should be straight between the connectors.
12	Terminate the cable pairs into the new connector with the connecting tool in the CUT position.
13	Secure the terminated cable pairs in the new connector with a wire retainer (part number: P0660798).
14	Remove simultaneously and flip both connectors 180°, so that time the jumper wires are on the front.
—continued—	

Procedure 10-7**Replacing a lower connector (no service interruption) (continued)**

Step	Procedure
15	Insert both connectors into the mount.
16	Cut off the old connector by re-terminating the jumper wires in the new connector with the tool in the CUT position.
17	Discard the old connector.
18	Dress the wire bundles by folding them back under the wire retainer. Remove the connector from the mount for this operation, so the wires will be on the other side of the new connector, between the upper and lower connector. Replace the connector in the mount.
19	Re-insert the upper connector into the mount in its original position. Re-dress the cable bundles in between the two connectors.
20	Route and dress the jumper wires as per the standard procedures and replace the designation strip.
—end—	

Appendix A — Ordering information

BIX connection hardware

Table A-1
BIX distribution connectors — Category 5

Description	Standard pack	Product code	Ordering number
BIX distribution connector, 25-pair, 5-pair markingCat5	20	QCBIX1A	A0266828
BIX distribution connector, 25-pair, 4-pair markingCat5	20	QCBIX1A4	A0393146

Table A-2
BIX multiplying connectors

Description	Standard pack	Product code	Ordering number
BIX multiplying connector, 12x2-pair	20	QCBIX2A	A0269923
BIX multiplying connector, 5x5-pair	20	QCBIX5A	A0266827
BIX multiplying connector, 2x2-pair, 3x7-pair	20	QCBIX7A	A0269925

Table A-3
BIX wall mounting hardware

Description	Standard pack	Product code	Ordering number
BIX mount 250-pair (10 connectors or 5 modular jack connectors) ..	2	QMBIX10A	A0270164
BIX mount 300-pair (12 connectors or 6 modular jack connectors) ..	2	QMBIX12E	A0340836
BIX mount 50-pair (2 connectors or 1 modular jack connector)	2	QMBIX10C	A0284798
BIX mount and locking cover, 50-pair (2 connectors)	1	QMBIX31A	A0277853
BIX mount and snap-on cover, 50-pair (2 connectors)	1	QMBIX31B	A0277854
Distribution ring	10	QRBIX19A	A0270168

A-2 Ordering information

Table A-4
BIX mounting accessories

Description	Standard pack	Product code	Ordering number
Locking cover for QMBIX10A.....	1	QCABIX32A	A0285986
Locking cover for QMBIX12E.....	1	QCABIX32E	A0340838
Cover for QMBIX10A stand-alone installation	1	QCABIX26A	A0276394
Locking cover for QMBIX10A stand-alone installation	1	QCABIX28A	A0276396
BIX-PAC enclosure (for BIX-PAC products)	1	QCPAC1A	A0318897

Table A-5
BIX installation and testing tools

Description	Standard pack	Product code	Ordering number
BIX connecting tool	1	QTBIX16A	A0270165
BIX connecting tool pouch	1	QTBIX16S	C0054642
BIX wiring fixture	1	QFBIX37A	A0321652
BIX wire retainer.....	20		P0660798
Cable tie.....	100		C0093222
BIX test probe, 1-pair	1	QTBIX17A	A0270166
BIX test shoe, 25-pair.....	1	QTBIX21A	A0270170
BIX test connector, 25-pair.....	1	QTBIX22A	A0270171
BIX special service guard, 1-pair (Red)	50	QGBIX23A	A0270172
BIX bridging clip, 1-pair, White.....	50	QLBIX38A	A0325091
BIX bridging clip, 1-pair, Grey	50	QLBIX38B	A0325493

Table A-6
BIX labels

Description	Standard pack	Product code	Ordering number
BIX designation strip.....	50	QSBIX20A	A0270169
Labels for QCBIX1A4 (5 per sheet)			
Red	1		P0748003
Yellow	1		P0748004
Green.....	1		P0748005
Blue	1		P0748006
Silver/Slate.....	1		P0748007
Purple	1		P0748008
White	1		P0731977
Orange.....	1		P0748009
Brown.....	1		P0748010
Grey	1		P0748011
Labels for QCBIX1A (5 per sheet)			
Green.....	1		P0748012
Yellow	1		P0748013
Red	1		P0748014
Blue	1		P0748015
Silver/Slate.....	1		P0748016
Purple	1		P0748017
White	1		P0588406
Brown.....	1		P0748018
Grey	1		P0748019
Cable, Green	1		P0748020
Cable, Blue	1		P0748021
Cable, Red.....	1		P0748021
Key multiplying, Red	1		P0748023
Cable, Silver/Slate	1		P0748024

Backbone cables

Table A-7
Category 5, NT-BDN Plus 25-pair cable

Description	Standard pack	Approx. Wt		Ordering number
		lb/Kft	Kg/100 m	
NT-BDN Plus 25-pair, CSA CMG (FT4)				
Blue	150 m spool, 16N	118	18	24572250
Blue	300 m spool	119	18	24572252
Blue	2500 m reel, 48W	119	18	24572264
<i>Products printed in feet, are intended for U.S. market (listed below)</i>				
NT-BDN Plus 25-pair, UL CMR				
Blue	500 ft spool, 16N	118	18	24572260
Blue	1000 ft spool	118	18	24572262
Blue	8200 ft reel, 48W	118	18	24572268

Table A-8
Category 5, data grade riser cable

Description	Color	Standard pack	Approx. Wt		Ordering number
			lb/Kft	Kg/100 m	
NT-DGR-25, data grade riser 25-pair, CSA CMG (FT4), UL CMR	Grey	2500 m reel, 60W	145	22	25500025
NT-DGR-25, data grade riser 25-pair, CSA CMG (FT4), UL CMR	Grey	Cut length, 42W-60W	146	22	25500026

Table A-9
Category 3, riser cable

Description	Number of pairs	Color	Approx. Wt		Ordering number
			lb/Kft	Kg/100 m	
Riser cable, ATMM-25, CSA CMG (FT4)	25	Grey	132	20	22713010
Riser cable, ATMM-50, CSA CMG (FT4)	50	Grey	239	36	22713020
Riser cable, ATMM-100, CSA CMG (FT4)	100	Grey	421	63	22713030
Riser cable, ATMM-200, CSA CMG (FT4)	200	Grey	766	114	22713040
Riser cable, ATMM-250, CSA CMG (FT4)	250	Grey	940	140	22713045
Riser cable, ATMM-300, CSA CMG (FT4)	300	Grey	1111	165	22713050
—continued—					

Table A-9
Category 3, riser cable (continued)

Description	Number of pairs	Color	Approx. Wt		Ordering number
			lb/Kft	Kg/100 m	
Riser cable, ATMM-400, CSA CMG (FT4)	400	Grey	1453	216	22713060
Riser cable, ATMM-600, CSA CMG (FT4)	600	Grey	2146	319	22713070
Riser cable, ATMM-900, CSA CMG (FT4)	900	Grey	3204	477	22713080
Riser cable, ATMM-1200, CSA CMG (FT4)	1200	Grey	4216	627	22713090
<i>Products printed in feet, are intended for U.S. market (listed below)</i>					
Riser cable, ARMM-100, UL CMR	100	Grey	421	63	22713150
Riser cable, ARMM-200, UL CMR	200	Grey	766	114	22713160
Riser cable, ARMM-300, UL CMR	300	Grey	1111	165	22713165
Riser cable, ARMM-400, UL CMR	400	Grey	1453	216	22713170
Riser cable, ARMM-600, UL CMR	600	Grey	2146	319	22713175
Riser cable, ARMM-900, UL CMR	900	Grey	3204	477	22713180
—end—					

Distribution cables

Table A-10
Category 5, Plenum, CMP (FT6)

Description	Standard pack	Approx. Wt		Ordering number
		lb/Kft	Kg/100 m	
NT-BDNFlex Plus, 4-pair, 24AWG, CSA CMP (FT6)				
White	300 m env. pack	20	3	24570756
White	300 m box	20	3	24570757
White	750 m spool, 14N	20	3	24570759
NT-BDNFlex Plus, 4-pair, 24AWG, CSA CMP (FT6)				
Blue	300 m env. pack	20	3	24570754
Blue	300 m box	20	3	24570753
Blue	750 m spool, 14N	20	3	24570748
<i>Products printed in feet, are intended for U.S. market (listed below)</i>				
NT-BDNFlex Plus, 4-pair, 24AWG, ETL CMP				
White	1000 ft box	20	3	24570700
White	1000 ft spool, 9.25N	20	3	24570733
—continued—				

Table A-10
Category 5, Plenum, CMP (FT6) (continued)

Description	Standard pack	Approx. Wt lb/Kft	Kg/100 m	Ordering number
NT-BDNFlex Plus, 4-pair, 24AWG, ETL CMP (continued)				
White	2500 ft spool, 14N	20	3	24570735
NT-BDNFlex Plus, 4-pair, 24AWG, ETL CMP				
Blue	1000 ft box	20	3	24570750
Blue	1000 ft spool, 9.25N	20	3	24570751
Blue	2500 ft spool, 14N	20	3	24570745
NT-BDNFlex Plus, 4-pair, 24AWG, ETL CMP				
Green	1000 ft box	20	3	24570760
Green	1000 ft spool, 9.25N	20	3	24570771
Green	2500 ft spool, 14N	20	3	24570770
NT-BDNFlex Plus, 4-pair, 24AWG, ETL CMP				
Orange	1000 ft box	20	3	24570762
Orange	1000 ft spool, 9.25N	20	3	24570773
Orange	2500 ft spool, 14N	20	3	24570772
—end—				

Table A-11
Category 5, Non Plenum, CMR and CMF (FT4)

Description	Standard pack	Approx. Wt lb/Kft	Kg/100 m	Ordering number
NT-BDN Plus, 4-pair, 24AWG, CSA CMG (FT4)				
Blue	300 m box	20	3	24570034
Blue	300 m env. pack	20	3	24570035
Blue	750 m spool, 14N	20	3	24570064
NT-BDN Plus, 4-pair, 24AWG, CSA CMG (FT4)				
White	300 m box	20	3	24570087
White	750 m spool, 14N	20	3	24570083
<i>Products printed in feet, are intended for U.S. market (listed below)</i>				
NT-BDN Plus, 4-pair, 24AWG, UL CMR				
Blue	1000 ft box	20	3	24570036
—continued—				

Table A-11
Category 5, Non Plenum, CMR and CMF(FT4) (continued)

Description	Standard pack	Approx. Wt lb/Kft	Approx. Wt Kg/100 m	Ordering number
NT-BDN Plus, 4-pair, 24AWG, UL CMR (continued)				
Blue	1000 ft spool, 11N	20	3	24570069
Blue	2500 ft spool, 16N	20	3	24570046
NT-BDN Plus, 4-pair, 24AWG, UL CMR				
White	1000 ft box	20	3	24570086
White	1000 ft spool, 11N	20	3	24570085
NT-BDN Plus, 4-pair, 24AWG, UL CMR				
Green	1000 ft box	20	3	24570094
NT-BDN Plus, 4-pair, 24AWG, UL CMR				
Orange	1000 ft box	20	3	24570097
Orange	1000 ft spool, 11N	20	3	24570092
—end—				

Table A-12
Category 5, Non Plenum, CM

Description	Standard pack	Approx. Wt lb/Kft	Approx. Wt Kg/100 m	Ordering number
NT-BDN Plus, 4-pair, 24AWG, UL CM				
Blue	300 m box	20	3	24570106
<i>Products printed in feet, are intended for U.S. market (listed below)</i>				
NT-BDN Plus, 4-pair, 24AWG, UL CM				
Blue	1000 ft box	20	3	24570104
Blue	1000 ft spool, 9.25N	20	3	24570105
NT-BDN Plus, 4-pair, 24AWG, UL CM				
White	1000 ft box	20	3	24570107
White	1000 ft spool, 9.25N	20	3	24570108

Table A-13
Category 3, Plenum, CMP (FT6)

Description	Standard pack	Approx. Wt lb/Kft	Approx. Wt Kg/100 m	Ordering number
NT-DFlex Plenum, 3-pair, 24AWG, CSA CMP (FT6)				
Olive Grey	300 m box	18	3	24571095
Olive Grey	300 m env. pack	18	3	24571096
<i>Products printed in feet, are intended for U.S. market (listed below)</i>				
NT-DFlex Plenum, 4-pair, 24AWG, CSA CMP (FT6)				
Olive Grey	300 m box	20	3	24571121
Olive Grey	300 m env. pack	20	3	24571122
Olive Grey	750 m spool, 14N	20	3	24571130
NT-DFG-Plenum, 6-pair, 24AWG, CSA CMP (FT6)				
Olive Grey	750 m spool, 16N	36	5	24571147
NT-D-Plenum, 12-pair, 24AWG, CSA CMP (FT6)				
Translucent	300 m spool, 14N	55	8	24571200
NT-D-Plenum, 25-pair, 24AWG, CSA CMP (FT6)				
Translucent	300 m reel, 30W	60	9	24571220
<i>Products printed in feet, are intended for U.S. market (listed below)</i>				
NT-DFlex Plenum, 4-pair, 24AWG, UL CMP				
Olive Grey	1000 ft spool, 9.25N20		3	24571110
Olive Grey	1000 ft box	20	3	24571111
NT-DFG-Plenum, 6-pair, 24AWG, UL CMP				
Olive Grey	1000 ft spool, 11N	36	5	24571145
Olive Grey	1000 ft box	36	5	24571140
NT-D-Plenum, 12-pair, 24AWG, UL CMP				
Translucent	1000 ft spool, 14N	55	8	24571205
NT-D-Plenum, 25-pair, 24AWG, UL CMP				
Translucent	1000 ft reel, 30W	60	9	24571225

Table A-14
Category 3, CMR and CMG (FT4)

Description	Standard pack	Approx. Wt lb/Kft	Kg/100 m	Ordering number
NT-D-Inside, 2-pair, 24AWG, CSA CMG (FT4)				
Olive Grey	500 m box	15	2	24501921
NT-D-Inside, 3-pair, 24AWG, CSA CMG (FT4)				
Olive Grey	300 m box	18	3	24501931
Olive Grey	300 m env. pack	18	3	24501932
NT-D-Inside, 4-pair, 24AWG, CSA CMG (FT4)				
Olive Grey	300 m box	20	3	24501940
Olive Grey	300 m env. pack	20	3	24501942
Olive Grey	800 m spool	20	3	24501946
NT-D-Inside, 6-pair, 24AWG, CSA CMG (FT4)				
Olive Grey	450 m spool	36	5	24501827
NT-D-Inside, 12-pair, 24AWG, CSA CMG (FT4)				
Olive Grey	300 m spool	55	8	24501837
NT-D-Inside, 16-pair, 24AWG, CSA CMG (FT4)				
Olive Grey	300 m spool	75	11	24501848
NT-D-Inside, 25-pair, 24AWG, CSA CMG (FT4)				
Olive Grey	300 m spool	85	13	24501858
<i>Products printed in feet, are intended for U.S. market (listed below)</i>				
NT-D-Inside, 4-pair, 24AWG, UL CMR				
Olive Grey	1000 ft box	20	3	24501940

Cross-connect jumpers

Table A-15
Category 5, cross-connect jumpers

Description	Standard pack	Ordering number
1-pair, B-Plus cross-connecting wire, 24AWG		
Blue/White	250 m K.-out-carton	22208220
2-pair, B-Plus cross-connecting wire, 24AWG		
White/Blue-White/Orange	400 m K.-out-carton	22208230
Blue/Red-Orange/Red	400 m K.-out-carton	22208261
3-pair, B-Plus cross-connecting wire, 24AWG		
White/Blue-White/Orange-White/Green	200 m K.-out-carton	22208235
4-pair, B-Plus cross-connecting wire, 24AWG		
White/Blue-White/Orange-White/Green-White/Brown	150 m K.-out-carton	22208240
<i>Products printed in feet, are intended for U.S. market (listed below)</i>		
1-pair, B-Plus cross-connecting wire, 24AWG		
Blue/White	1000 ft K.-out-carton	22208250
Blue/White	12400 ft spool, 16N	22208252
Blue/White	1000 ft spool, S77	22208253
2-pair, B-Plus cross-connecting wire, 24AWG		
White/Blue-White/Orange	1000 ft K.-out-carton	22208260
White/Green-White/Orange	1000 ft K.-out-carton	22208231
3-pair, B-Plus cross-connecting wire, 24AWG		
White/Blue-White/Orange-White/Green	500 ft K.-out-carton	22208265
4-pair, B-Plus cross-connecting wire, 24AWG		
White/Blue-White/Orange-White/Green-White/Brown	500 ft K.-out-carton	22208270

Appendix B — Cable color code

Note: Some wire color identification has “Body and Band”, some has only solid color. The Table will identify “Body and Band” color code, the first color is always the dominant identifier color for TIP and also for RING.

Table B-1
Premises wires and cables — 4-pair color code

Pair No.	TIP Body/Band	RING Body/Band
1	White/Blue	Blue/White
2	White/Orange	Orange/White
3	White/Green	Green/White
4	White/Brown	Brown/White

Table B-2
Premises wires and cables — 25-pair color code

Pair No.	TIP Body/Band	RING Body/Band
1	White/Blue	Blue/White
2	White/Orange	Orange/White
3	White/Green	Green/White
4	White/Brown	Brown/White
5	White/Slate	Slate/White
6	Red/Blue	Blue/Red
7	Red/Orange	Orange/Red
8	Red/Green	Green/Red
9	Red/Brown	Brown/Red
10	Red/Slate	Slate/Red
11	Black/Blue	Blue/Black
12	Black/Orange	Orange/Black
13	Black/Green	Green/Black
14	Black/Brown	Brown/Black
15	Black/Slate	Slate/Black
—continued—		

B-2 Cable color code

Table B-2
Premises wires and cables — 25-pair color code (continued)

Pair No.	TIP Body/Band	RING Body/Band
16	Yellow/Blue	Blue/Yellow
17	Yellow/Orange	Orange/Yellow
18	Yellow/Green	Green/Yellow
19	Yellow/Brown	Brown/Yellow
20	Yellow/Slate	Slate/Yellow
21	Violet/Blue	Blue/Violet
22	Violet/Orange	Orange/Violet
23	Violet/Green	Green/Violet
24	Violet/Brown	Brown/Violet
25	Violet/Slate	Slate/Violet
—end—		

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