

# Installation Guide

## BELDEN 110 Cross-Connect System 4-Pair Cable

Version 02.00 2007

PX101722

**BELDEN**

1 of 4 pages

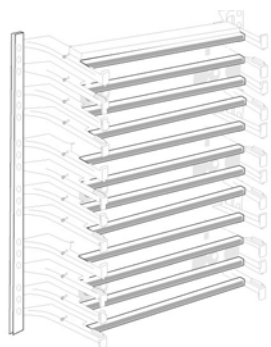
### BELDEN 110 Wiring Block Kits-4-Pair Cable

*BELDEN 110 System - Basic Components*

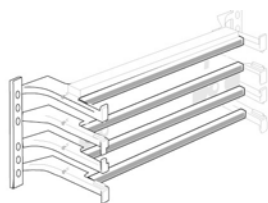
*BELDEN 110 System - Accessories*

#### Standard Tools and Materials

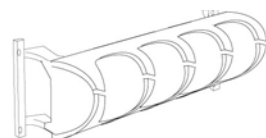
- Marker
- Measuring tape
- Spirit Level
- #12 x 3/4" wood screws (or appropriate wall anchors)
- Cutters
- 110 type connecting tool
- Multi-pair connecting tool



300-Pair Wiring Block with Legs (4 and 5-Pair) AX100692



100-Pair Wiring Block with Legs (4 and 5-Pair) AX100691



Cable Management Trough with Legs AX100706



Design Strip: AX100721



Pre-Printed Label Sheets AX100712 to 720



Cable Management Ring Small: AX100703 Large: AX100704

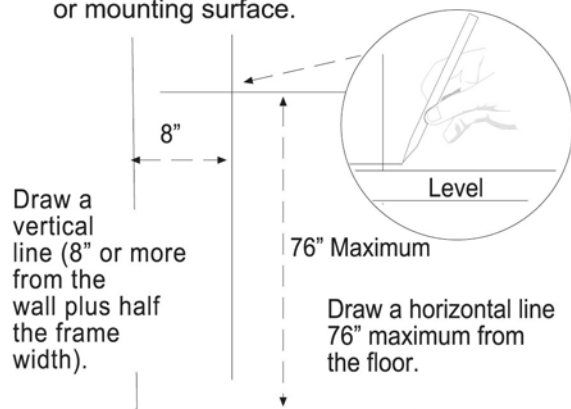
#### Kit Configurations

	AX100693	AX100694	AX100695	AX100696
Wiring Block, 100-Pair	1	1	-	-
Wiring Block, 300-Pair	-	-	1	1
Connecting Block, 4-Pair	20	-	60	-
Connecting Block, 5-Pair	4	20	12	60
Designation Strip	2	2	6	6

### Installing Wiring Blocks with Legs

#### Marking Wall/Mounting Surface

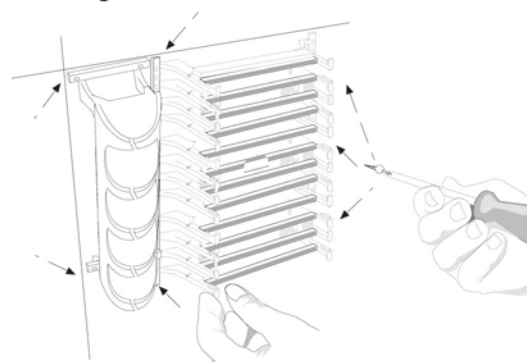
Measure, and using a level, mark wall or mounting surface.



#### Attaching 300-Pair Wiring Block

**1A**

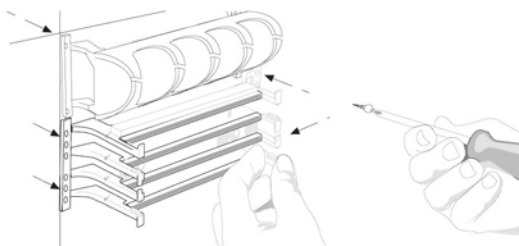
Orient trough vertically on lines and using #12 x 3/4" wood screws, fasten to wall. Orient 300-Pair wiring block on lines and using #12 x 3/4" wood screws, fasten to wall.



#### Attaching 100-Pair Wiring Block

**1B**

Orient trough horizontally on lines and using #12 x 3/4" wood screws, fasten to wall. Position 100-Pair wiring block below trough and using #12 x 3/4" wood screws, fasten to wall.



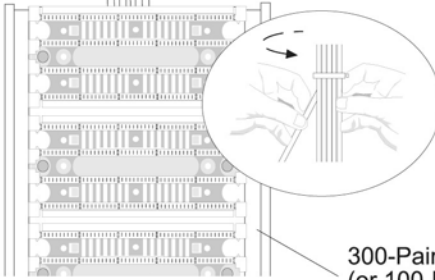
## Preparing 4-Pair Cables

2

To minimize cable congestion when routing, work cables into a parallel form before bundling.

Secure bundle every 6" with cable ties.

**Caution:** Do not over tighten ties! Ties should rotate freely.



300-Pair Block  
(or 100-Pair Block)

### Installer's Tip :

When routing, always select an outer cable (at random), from the rear of the bundle and route to its slot.

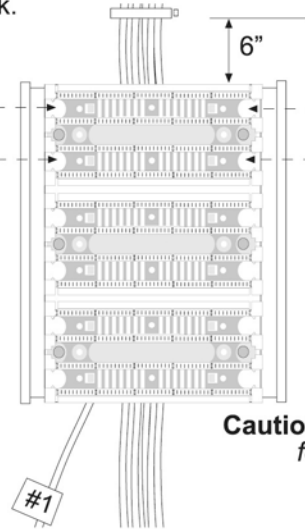
This sequence will decrease overlaps and help produce an aesthetic dressing!

3

Identify cable positions on wall next to corresponding slots in block.

#1 #2 #3  
#7 #8 #9  
#13 #14 #15  
#19 #20 #21

#4 #5 #6  
#10 #11 #12  
#16 #17 #18  
#22 #23 #24



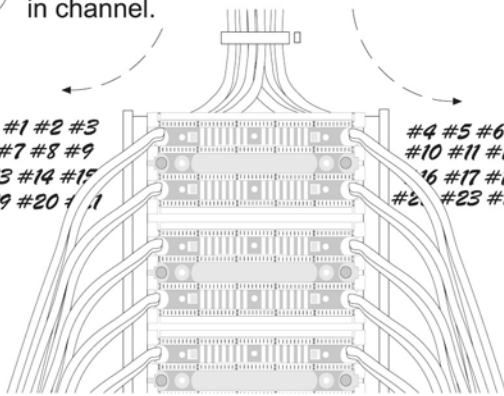
**Caution:** Use pencil for marking!

4

Following cable I.D. numbers, route cables through appropriate slots in channel.

#1 #2 #3  
#7 #8 #9  
#13 #14 #15  
#19 #20 #21

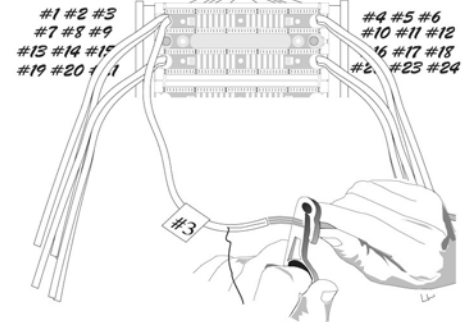
#4 #5 #6  
#10 #11 #12  
#16 #17 #18  
#22 #23 #24



## Wiring the Block

5

Select appropriate cable and strip end to expose rip-cord.

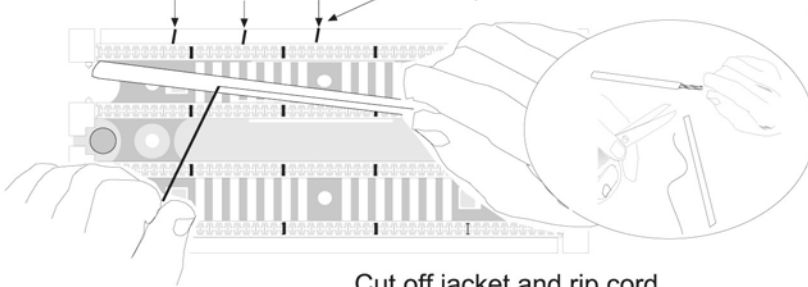


6

Slit cable #3 to just past the mark for cable #2.

#1 #2 #3

**Installer's Tip!** Using a 4-pair connecting block as a guide, with a felt pen, mark block in 4-pair increments.

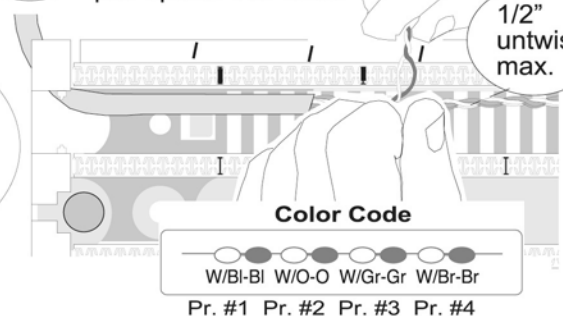


Cut off jacket and rip cord.

7

Following color code (below), untwist furthest pair and position conductors over pair splitter into slots.

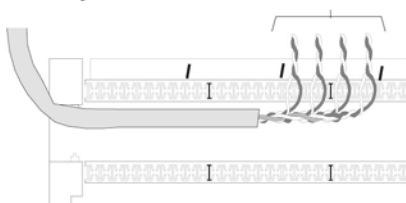
1/2" untwist max.



8

After setting the four pairs according to color code, dress cable neatly in channel.

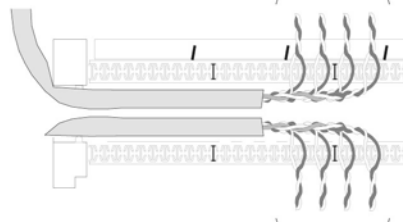
Cable #3



9

Install cable #9 in the same way as cable #3.

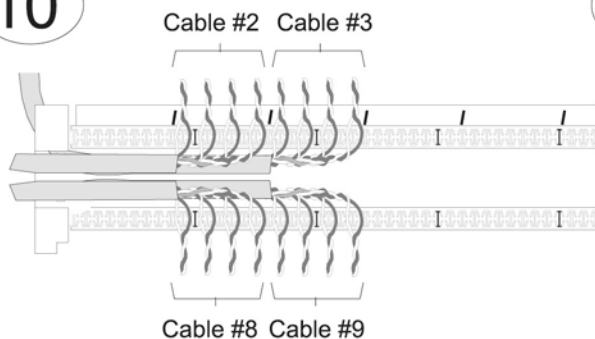
Cable #3



Cable #9

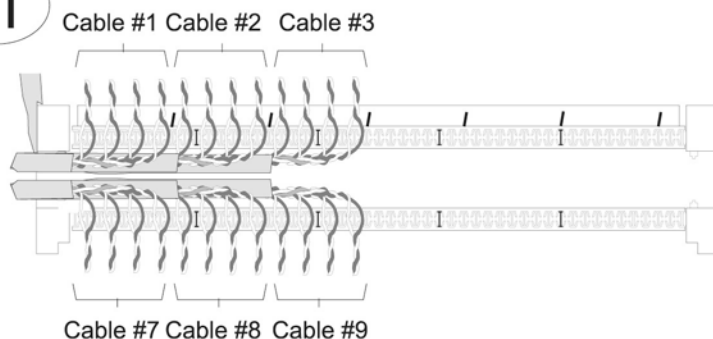
10

Select and set cables #2 and #8.



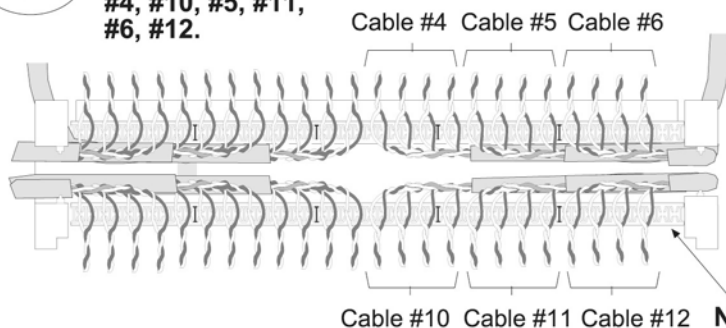
11

Select and set cables #1 and #7.



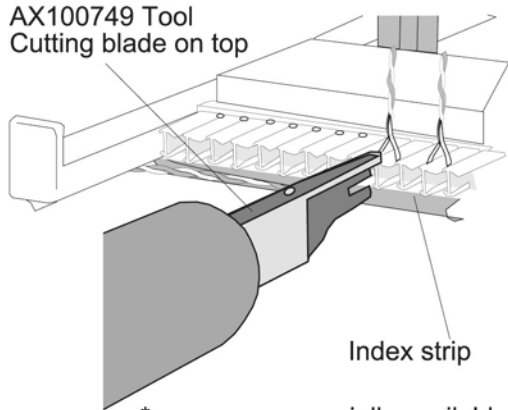
12

Select and set cables in the sequence #4, #10, #5, #11, #6, #12.

**Important!:** Before terminating, visually check wiring to color code!**The top two rows are now ready for terminating!****Note:** After termination, subsequent upper and lower rows are wired in the same sequence.**Note:** Unused pair position.

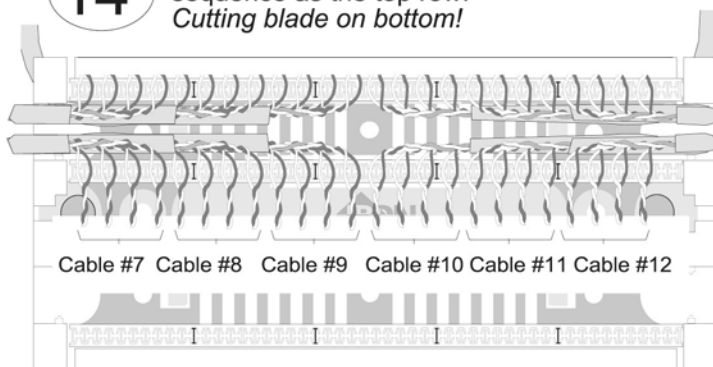
### Terminating 4-Pair Cables

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Using the \***BELDEN 110 Connecting Tool**, terminate the top row.AX100749 Tool  
Cutting blade on top

\* or any commercially available 110 tool.

14

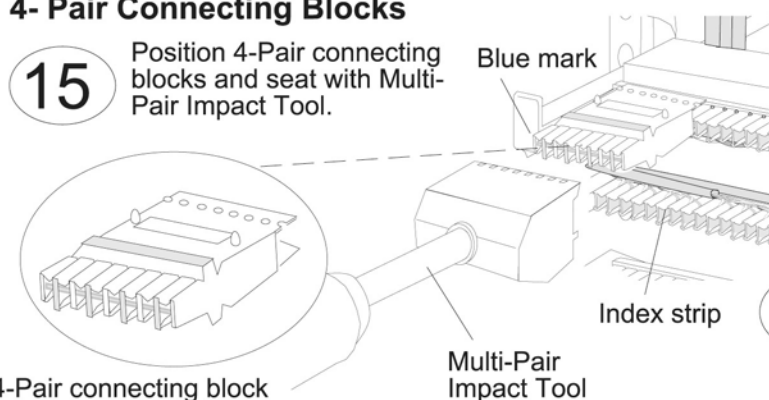
Terminate bottom row in the same sequence as the top row.  
*Cutting blade on bottom!***Important!:**  
Before terminating,  
again visually check  
wiring to color code!**Terminate subsequent cables repeating all previous steps!**

### 4- Pair Connecting Blocks

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Position 4-Pair connecting blocks and seat with Multi-Pair Impact Tool.

Blue mark

**Note:** Care must be taken to align all connecting blocks with the blue color code on the left!**Caution:** The blocks can be accidentally installed up-side-down!

Position and seat one block at a time.

**Note:** Be sure blocks are **completely seated!!**

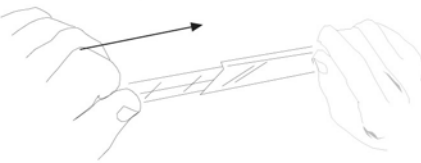
16

Repeat procedure for remaining blocks in frame. The block is now ready for cross-connect wiring or patch cords.

## Preparing Labels

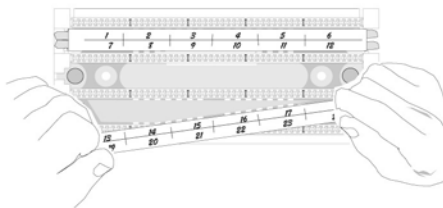
17

Slide pre-printed or hand written I.D. strips into clear protective covers.



18

Snap designation strips into channels between upper and lower rows.



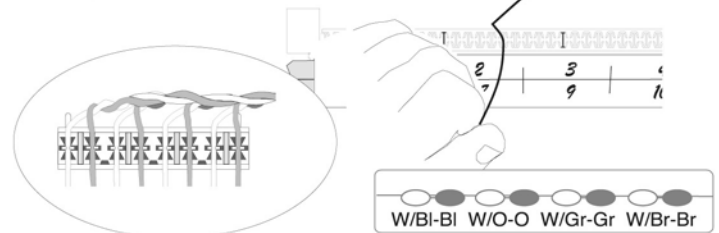
## Terminating Jumper Wires

19

Run jumper wires through slots to connecting blocks. Position jumpers in slots according to color code/wiring plan marked on block.



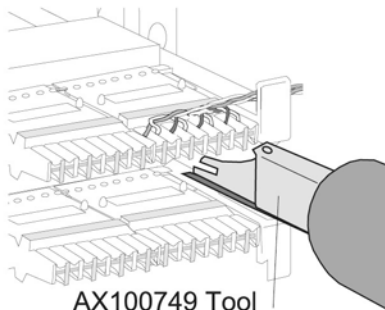
Do NOT use Multi-Pair Impact Tool to terminate cross-connect wires in connecting blocks.



NOTE: Only 22 to 26 AWG insulated wire should be terminated to the connecting block. (Maximum diameter over insulation is 1.3 mm (.050 in.).)

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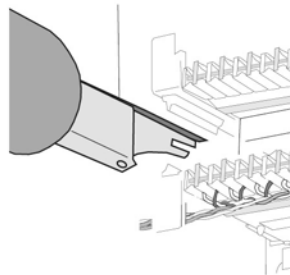
Connect jumpers using the **BELDEN 110 Connecting Tool**.



AX100749 Tool  
Top Row: Cutting blade on bottom!

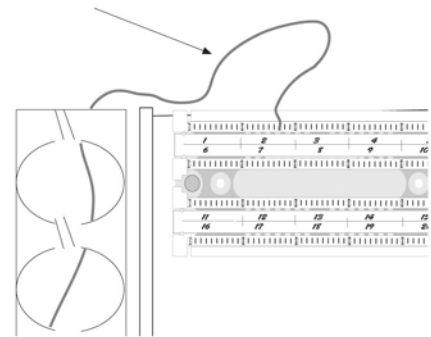
21

AX100749 Tool  
Bottom Row: Cutting blade on top!



22

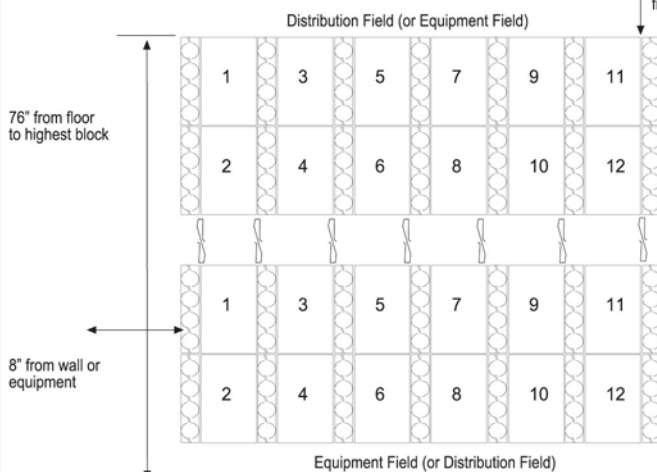
Using finger, form approx. 1.5" of slack at each end of the jumper wire connection.



## Field Connection: Jumper Wires

Typical BELDEN110 System: 300-Pair Blocks, Jumper Wires, Small Distribution Rings

8" minimum from ceiling



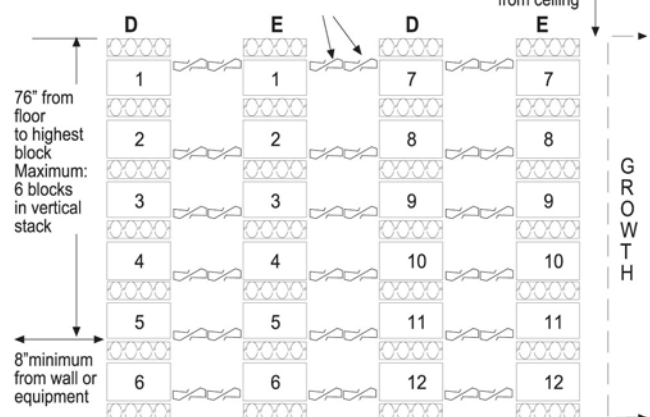
Capacity: 3,600 Pairs (for larger installations up to 7200 pairs, use Large Distribution Ring).

## Field Connection: Patch Cords

Typical BELDEN 110 System: 100-Pair Blocks, Patch Cords, Small Distribution Rings

Small Distribution Rings (2)

8" minimum from ceiling



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**BELDEN**

For additional technical information on our connecting products, call 1-800-858-7954

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