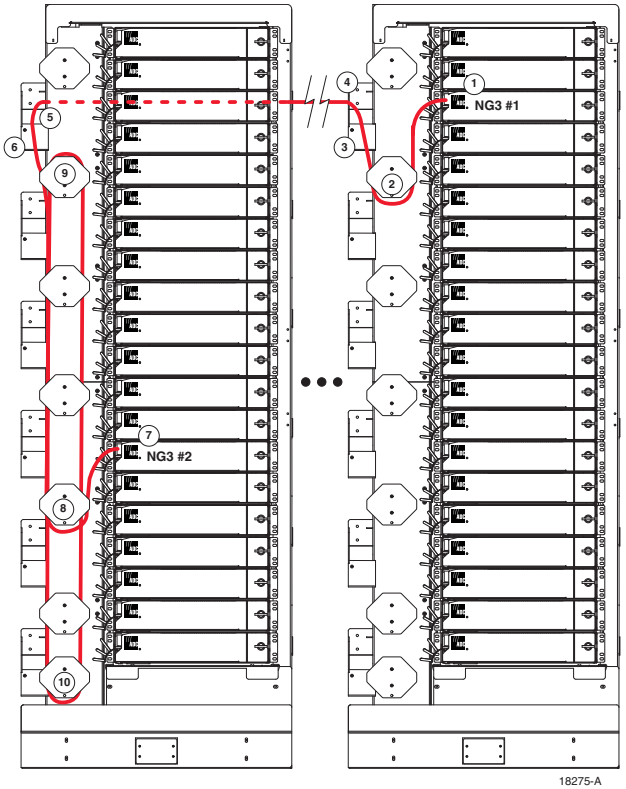
ADCP-90-296
Issue 4
August 2009

NG3™ High-Density Fiber Distribution Frame System Patch Cord Routing Guide



1666259 Rev A

Acronyms Used in This Guide

FDF–Fiber Distribution Frame

FOT–Fiber Optic Terminal

NG3–New Generation High-Density Fiber Distribution Frame

Where to Get ADC Assistance

EUROPE
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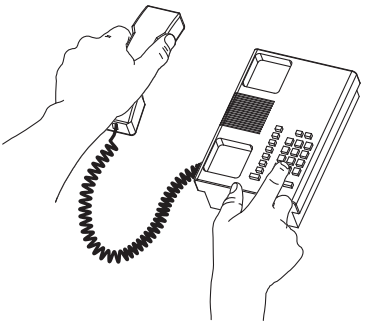
Technical Assistance: +1-952-917-3475



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Patch Cord Routing Lengths

ADC recommends that fiber jumper pile-ups in horizontal pathways not exceed two inches (51 mm). Patch cord lengths for the NG3 can be selected based on use of standard length patch cords or based on a preferential patch cord length using a zone system. To reduce congestion, ADC recommends selecting patch cords based on preferential patch cord lengths, but guidelines for standard patch cord lengths are also provided. ADC does not recommend using 3 mm diameter simplex jumpers in the NG3 system; use 2 mm simplex or smaller.

Standard Patch Cord Lengths

Refer to the tables below for standard patch cord routing lengths (in meters) for NG3 frame systems.

Note: These numbers apply to systems that do not include FOT slack storage filler panels or other miscellaneous bays. If present, these will need to be accounted for when determining actual patch cord lengths.

	NUMBER OF FRAMES BETWEEN STARTING FRAME AND ENDING FRAME								
	SAME FRAME	ADJACENT FRAMES	1	2	3	4	5	6	7
Patch Cord Length in Meters	3	5	6	7	8	8	9	10	11

	NUMBER OF FRAMES BETWEEN STARTING FRAME AND ENDING FRAME								
	8	9	10	11	12	13	14	15	16
Patch Cord Length in Meters	11	12	13	14	14	15	16	17	18

	NUMBER OF FRAMES BETWEEN STARTING FRAME AND ENDING FRAME								
	16	17	18	19	20	21	22	23	24
Patch Cord Length in Meters	18	18	19	20	21	21	22	23	24

Preferential Patch Cord Lengths

To minimize congestion, ADC recommends selecting patch cords based on length recommendations below. **For zone definition, see page 11.**

Note: These numbers apply to systems that do not include FOT slack storage filler panels or other miscellaneous bays. If present, these will need to be accounted for when determining actual patch cord lengths.

Originating Zone Frame	Destination Frame Zone											
	Same Frame (Z = Zone)						Adjacent Frames (Z = Zone)					
	Z1	Z2	Z3	Z4	Z5	Z6	Z1	Z2	Z3	Z4	Z5	Z6
Zone 1	7 ft	7 ft	7 ft	8 ft	8 ft	9 ft	12 ft	14 ft	15 ft	16 ft	17 ft	17 ft
Zone 2	7 ft	7 ft	7 ft	7 ft	8 ft	8 ft	14 ft	14 ft	15 ft	16 ft	17 ft	18 ft
Zone 3	7 ft	7 ft	7 ft	7 ft	7 ft	8 ft	15 ft	15 ft	14 ft	15 ft	16 ft	17 ft
Zone 4	8 ft	7 ft	7 ft	7 ft	7 ft	7 ft	16 ft	16 ft	15 ft	14 ft	15 ft	16 ft
Zone 5	8 ft	8 ft	7 ft	7 ft	7 ft	7 ft	17 ft	17 ft	16 ft	15 ft	14 ft	15 ft
Zone 6	9 ft	8 ft	8 ft	7 ft	7 ft	7 ft	17 ft	18 ft	17 ft	16 ft	15 ft	14 ft

Originating Zone Frame	Destination Frame Zone											
	1 Frame Between Origin and Destination (Z = Zone)						2 Frames Between Origin and Destination (Z = Zone)					
	Z1	Z2	Z3	Z4	Z5	Z6	Z1	Z2	Z3	Z4	Z5	Z6
Zone 1	15 ft	17 ft	18 ft	19 ft	20 ft	20 ft	17 ft	19 ft	20 ft	21 ft	22 ft	22 ft
Zone 2	17 ft	16 ft	17 ft	18 ft	19 ft	20 ft	19 ft	19 ft	20 ft	21 ft	22 ft	23 ft
Zone 3	18 ft	17 ft	16 ft	17 ft	18 ft	19 ft	20 ft	20 ft	19 ft	20 ft	21 ft	22 ft
Zone 4	19 ft	18 ft	17 ft	16 ft	17 ft	18 ft	21 ft	21 ft	20 ft	19 ft	20 ft	21 ft
Zone 5	20 ft	19 ft	18 ft	17 ft	16 ft	17 ft	22 ft	22 ft	21 ft	20 ft	19 ft	20 ft
Zone 6	20 ft	20 ft	19 ft	18 ft	17 ft	16 ft	22 ft	23 ft	22 ft	21 ft	20 ft	19 ft

Originating Zone Frame	Destination Frame Zone											
	3 Frames Between Origin and Destination (Z = Zone)						4 Frames Between Origin and Destination (Z = Zone)					
	Z1	Z2	Z3	Z4	Z5	Z6	Z1	Z2	Z3	Z4	Z5	Z6
Zone 1	20 ft	22 ft	23 ft	24 ft	25 ft	25 ft	22 ft	24 ft	25 ft	26 ft	27 ft	27 ft
Zone 2	22 ft	21 ft	22 ft	23 ft	24 ft	25 ft	24 ft	24 ft	25 ft	26 ft	27 ft	28 ft
Zone 3	23 ft	22 ft	21 ft	22 ft	23 ft	24 ft	25 ft	25 ft	24 ft	25 ft	26 ft	27 ft
Zone 4	24 ft	23 ft	22 ft	21 ft	22 ft	23 ft	26 ft	26 ft	25 ft	24 ft	25 ft	26 ft
Zone 5	25 ft	24 ft	23 ft	22 ft	21 ft	22 ft	27 ft	27 ft	26 ft	25 ft	24 ft	25 ft
Zone 6	25 ft	25 ft	24 ft	23 ft	22 ft	21 ft	27 ft	28 ft	27 ft	26 ft	25 ft	24 ft

Originating Zone Frame	Destination Frame Zone											
	5 Frames Between Origin and Destination (Z = Zone)						6 Frames Between Origin and Destination (Z = Zone)					
	Z1	Z2	Z3	Z4	Z5	Z6	Z1	Z2	Z3	Z4	Z5	Z6
Zone 1	25 ft	27 ft	28 ft	29 ft	30 ft	30 ft	27 ft	29 ft	30 ft	31 ft	32 ft	32 ft
Zone 2	27 ft	26 ft	27 ft	28 ft	29 ft	30 ft	29 ft	29 ft	30 ft	31 ft	32 ft	33 ft

Originating Zone Frame	Destination Frame Zone											
	5 Frames Between Origin and Destination (Z = Zone)						6 Frames Between Origin and Destination (Z = Zone)					
	Z1	Z2	Z3	Z4	Z5	Z6	Z1	Z2	Z3	Z4	Z5	Z6
Zone 3	28 ft	27 ft	26 ft	27 ft	28 ft	29 ft	30 ft	30 ft	29 ft	30 ft	31 ft	32 ft
Zone 4	29 ft	28 ft	27 ft	26 ft	27 ft	28 ft	31 ft	31 ft	30 ft	29 ft	30 ft	31 ft
Zone 5	30 ft	29 ft	28 ft	27 ft	26 ft	27 ft	32 ft	32 ft	31 ft	30 ft	29 ft	30 ft
Zone 6	30 ft	30 ft	29 ft	28 ft	27 ft	26 ft	32 ft	33 ft	32 ft	31 ft	30 ft	29 ft

Originating Zone Frame	Destination Frame Zone											
	7 Frames Between Origin and Destination (Z = Zone)						8 Frames Between Origin and Destination (Z = Zone)					
	Z1	Z2	Z3	Z4	Z5	Z6	Z1	Z2	Z3	Z4	Z5	Z6
Zone 1	30 ft	32 ft	33 ft	34 ft	35 ft	35 ft	32 ft	34 ft	35 ft	36 ft	37 ft	37 ft
Zone 2	32 ft	31 ft	32 ft	33 ft	34 ft	35 ft	34 ft	34 ft	35 ft	36 ft	37 ft	38 ft
Zone 3	33 ft	32 ft	31 ft	32 ft	33 ft	34 ft	35 ft	35 ft	34 ft	35 ft	36 ft	37 ft
Zone 4	34 ft	33 ft	32 ft	31 ft	32 ft	33 ft	36 ft	36 ft	35 ft	34 ft	35 ft	36 ft
Zone 5	35 ft	34 ft	33 ft	32 ft	31 ft	32 ft	37 ft	37 ft	36 ft	35 ft	34 ft	35 ft
Zone 6	35 ft	35 ft	34 ft	33 ft	32 ft	31 ft	37 ft	38 ft	37 ft	36 ft	35 ft	34 ft

Originating Zone Frame	Destination Frame Zone											
	9 Frames Between Origin and Destination (Z = Zone)						10 Frames Between Origin and Destination (Z = Zone)					
	Z1	Z2	Z3	Z4	Z5	Z6	Z1	Z2	Z3	Z4	Z5	Z6
Zone 1	35 ft	37 ft	38 ft	39 ft	40 ft	40 ft	37 ft	39 ft	40 ft	41 ft	42 ft	42 ft
Zone 2	37 ft	36 ft	37 ft	38 ft	39 ft	40 ft	39 ft	39 ft	40 ft	41 ft	42 ft	43 ft
Zone 3	38 ft	37 ft	36 ft	37 ft	38 ft	39 ft	40 ft	40 ft	39 ft	40 ft	41 ft	42 ft
Zone 4	39 ft	38 ft	37 ft	36 ft	37 ft	38 ft	41 ft	41 ft	40 ft	39 ft	40 ft	41 ft
Zone 5	40 ft	39 ft	38 ft	37 ft	36 ft	37 ft	42 ft	42 ft	41 ft	40 ft	39 ft	40 ft
Zone 6	40 ft	40 ft	39 ft	38 ft	37 ft	36 ft	42 ft	43 ft	42 ft	41 ft	40 ft	39 ft

For continuous lineups containing 11 or more frames between origin and destination, determine patch cord length by the following instructions:

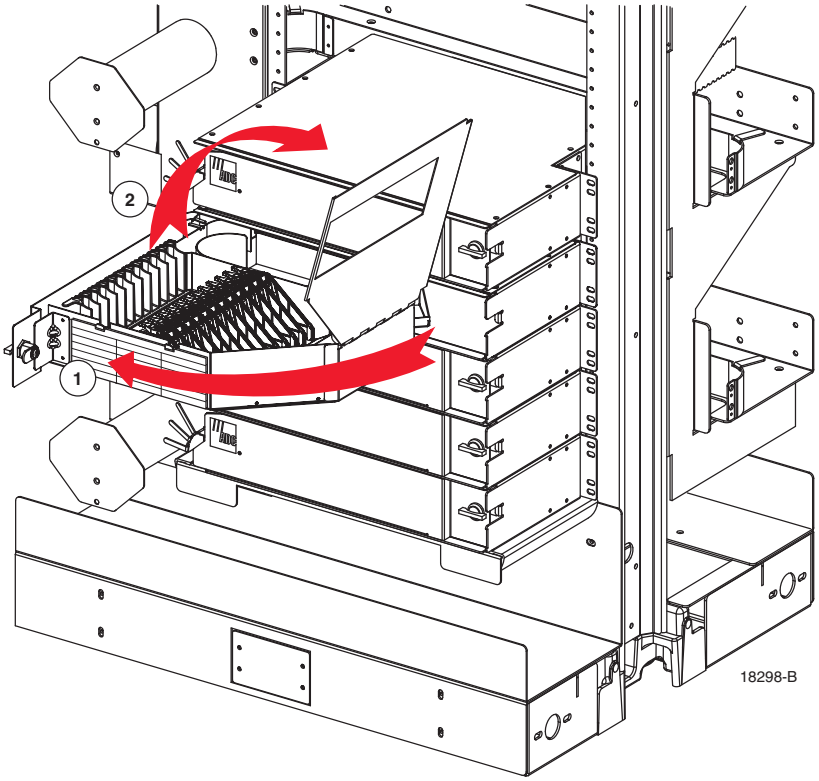
1. Subtract 10 from the total number of frames between origin and destination.
2. Multiply the resulting number by 2.5 feet and round up to the nearest foot.
3. Add this length to the chart with 10 frames between origin and destination.

General Routing Guidelines

Basic Procedure

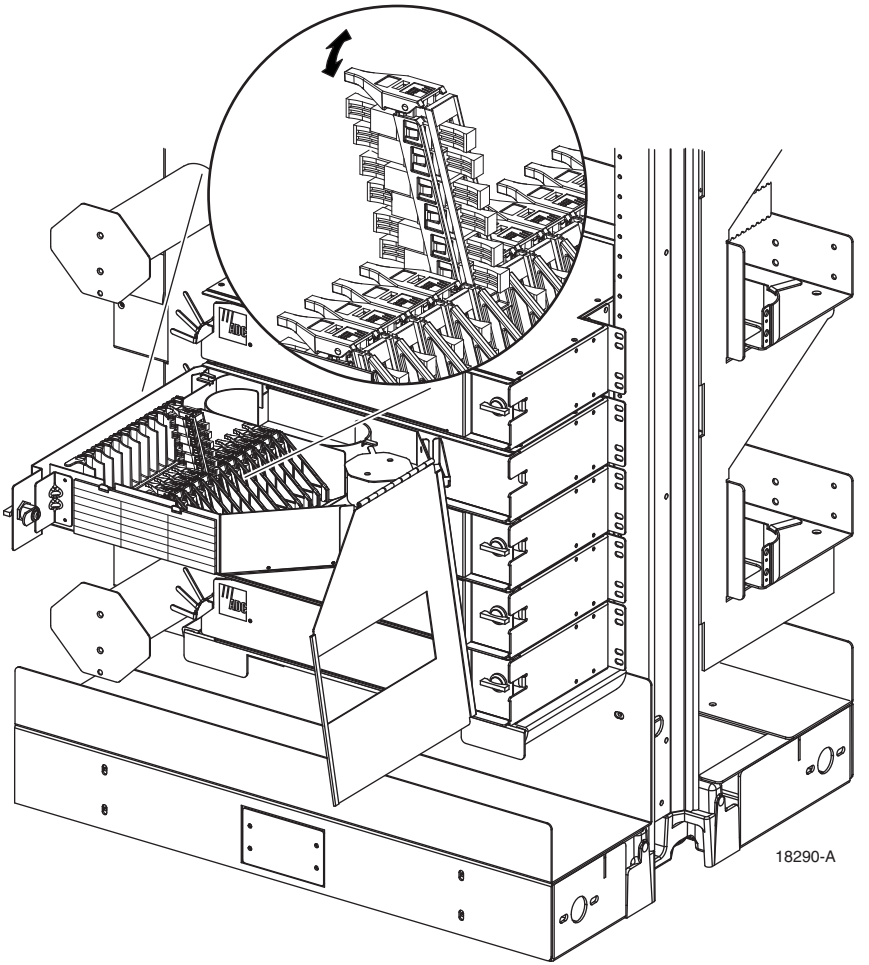
To connect a patch cord, use the following procedure:

1. Release the door latch on the front of the NG3 panel and swing open the hinged drawer to the position shown.
2. When the hinged drawer comes to rest in a position 90 degrees out from the panel chassis, lift the hinged top cover of the drawer, as shown. Let the top cover hang down on the side of the drawer.

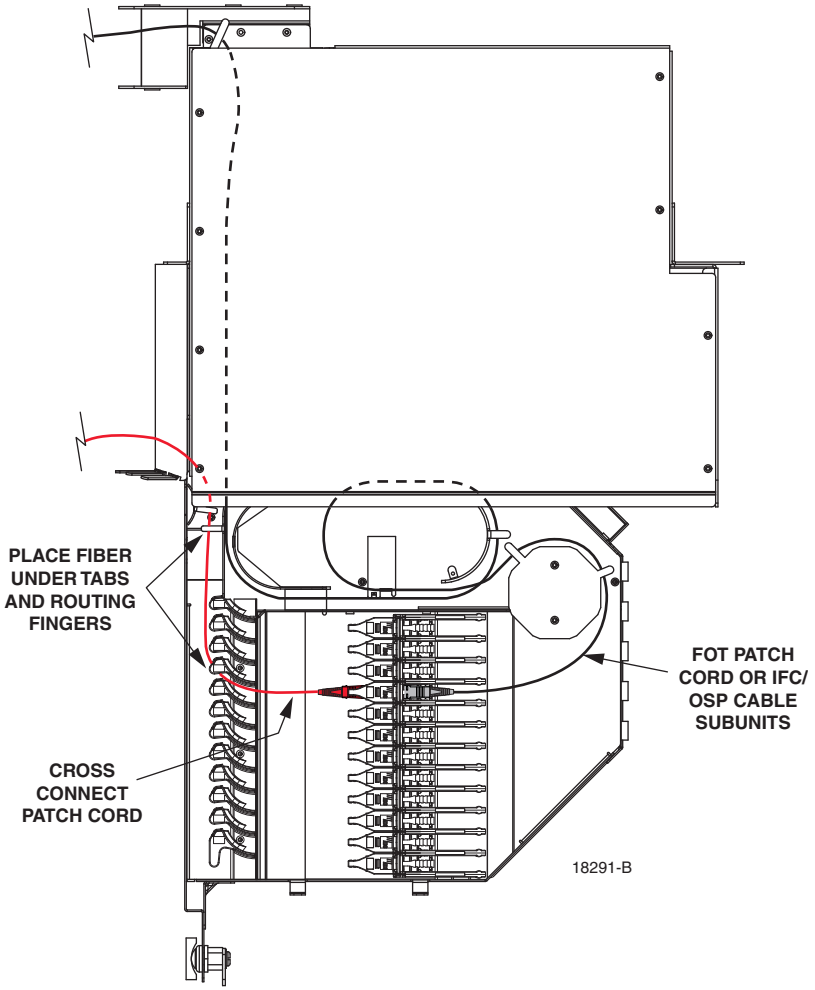


3. Locate the adapter pack to be connected and swing up the adapter pack to gain access to the adapters.

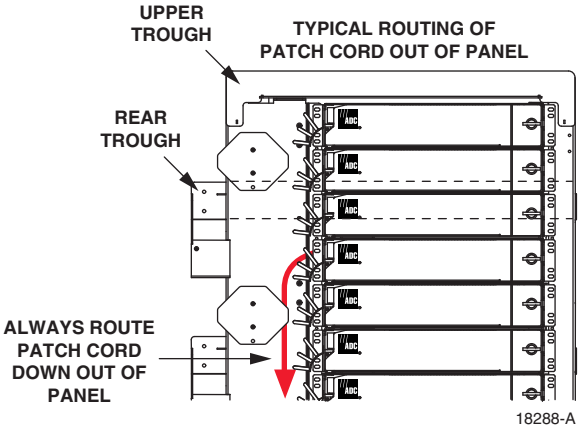
Danger: *Infrared radiation is invisible and can seriously damage the retina of the eye. Do not look into the ends of any optical fiber. Do not look directly into the optical adapters of the adapter packs. Exposure to invisible laser radiation may result. An optical power meter should be used to verify active fibers. A protective cap or hood MUST be immediately placed over any radiating adapter or optical fiber connector to avoid the potential of dangerous amounts of radiation exposure. This practice also prevents dirt particles from entering the adapter or connector.*



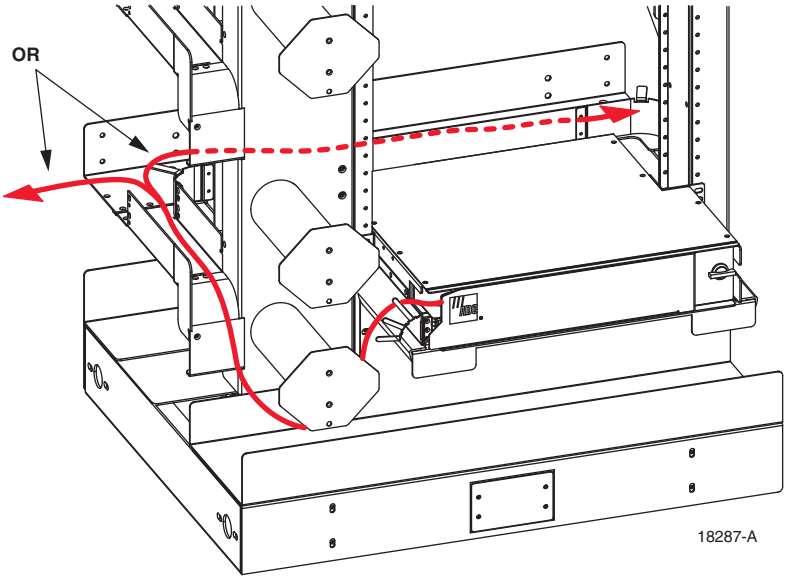
4. Access the adapter pack as follows:
   a. Remove dust cap from the desired adapter. (Also, on each use, ADC recommends cleaning adapter per local practice.)
   b. Mate the patch cord connector to the designated adapter.
   c. Route the patch cord within the panel, as shown.
   d. Ensure that all patch cords are routed properly and constrained under the appropriate tabs.



5. Swing the panel closed and route the patch cord down out of the panel as shown. For routing direction beyond the arrow, refer to the appropriate routing diagram in this guide.

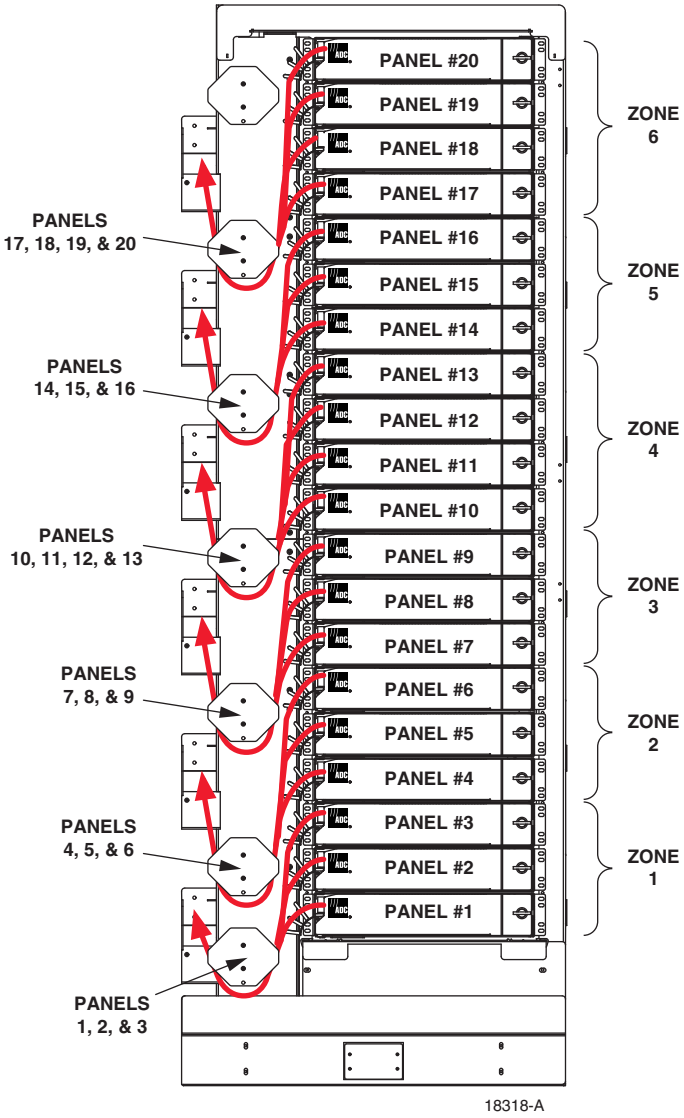


6. When using the rear trough, route the patch cord down and around the assigned slack storage spool (refer to next page), then route the patch cord through the rear trough as shown.



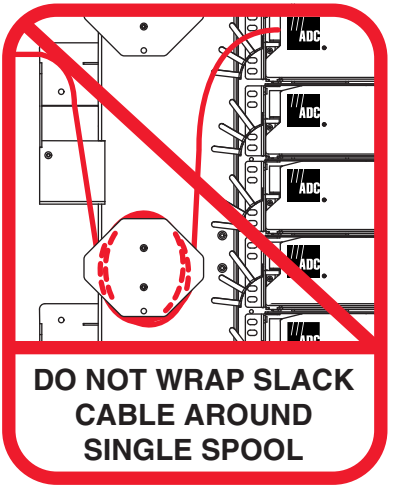
Panel to Spool Assignments

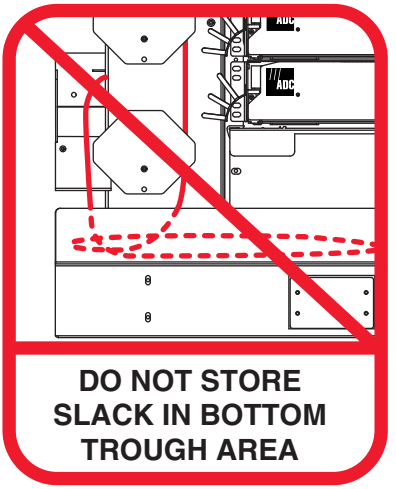
For routing direction beyond the arrow, refer to the appropriate routing diagram in this guide.



Front View of Frame

7. On far end of patch cord, open the panel and access the adapter pack as described in earlier steps, then terminate the patch cord at the appropriate adapter.
8. Store slack on the slack storage spools on the front of the frame, as shown in the diagrams in this guide. In all use of the spools, heed the instructions shown below.



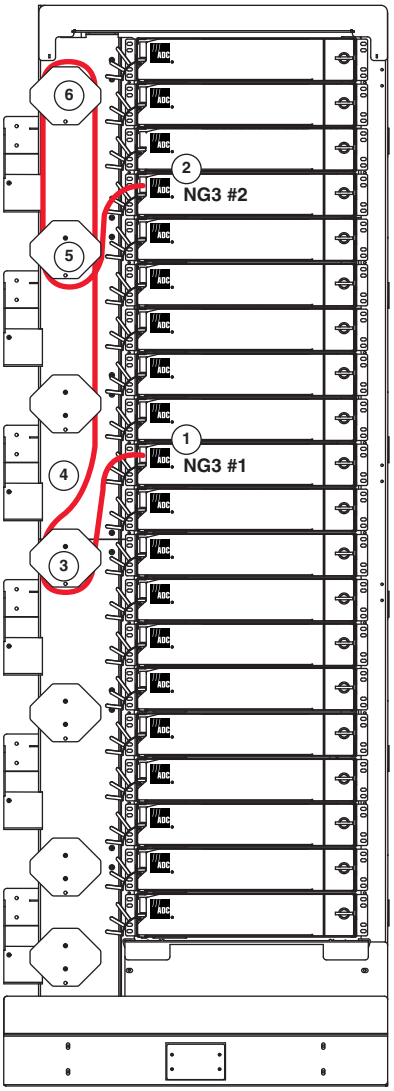


18300-A

Cross-Connect Within Single Frame

Any Point to Any Point

Route patch cords in order shown. Observe guidelines on pages 5-12.

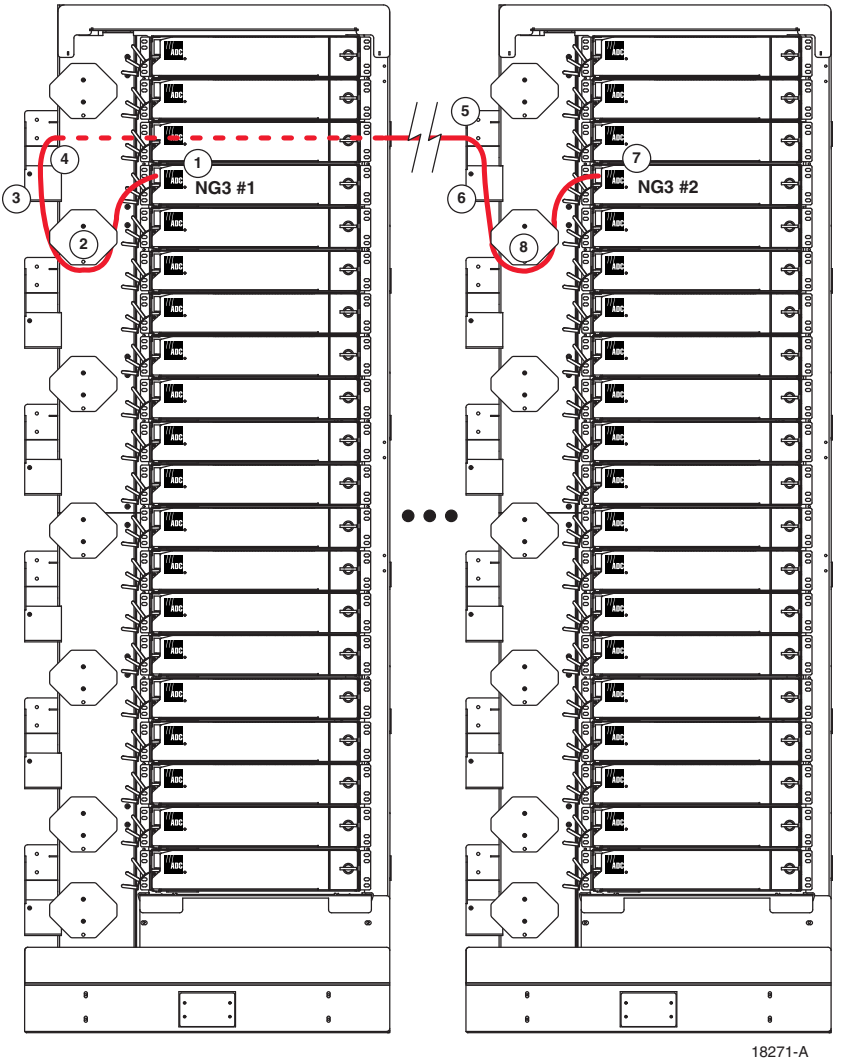


Front View of Frame

Cross-Connect Within Multiple Frames

Using Recommended Patch Cord Length

Route patch cords in order shown. Observe guidelines on pages 5-12.

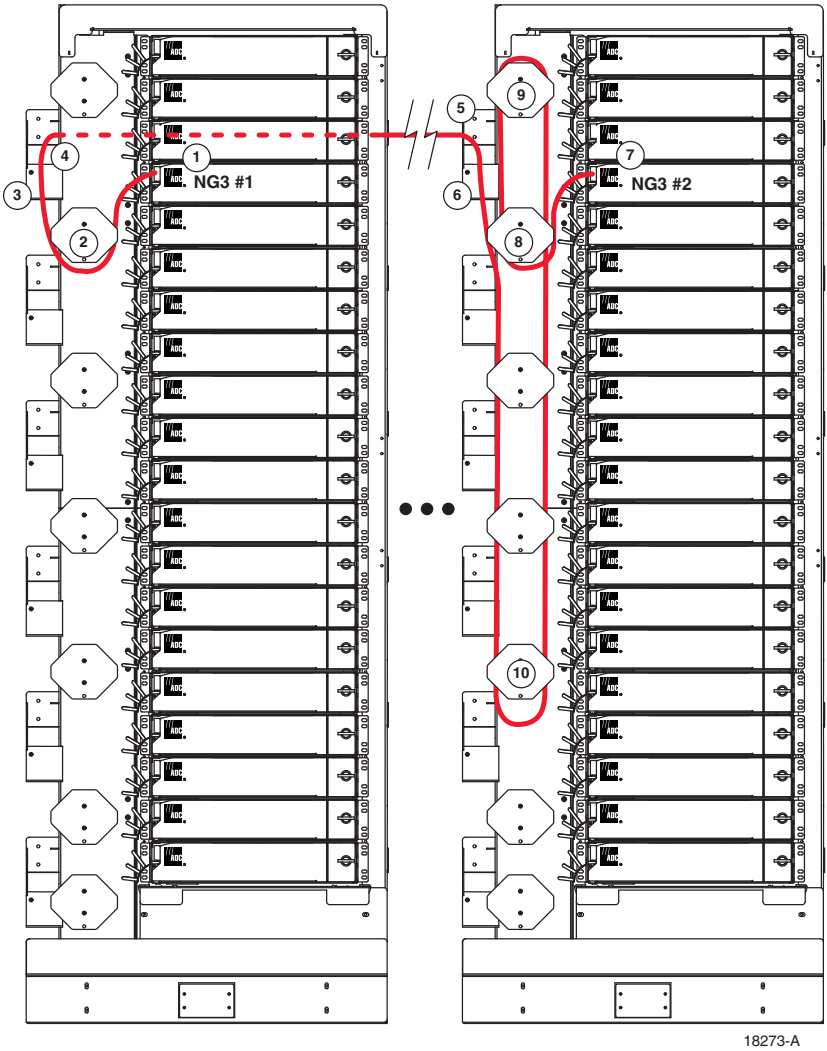


Front View of Frame

Cross-Connect Within Multiple Frames

Using Longer Than Recommended Patch Cord Length

Route patch cords in order shown. Observe guidelines on pages 5-12.

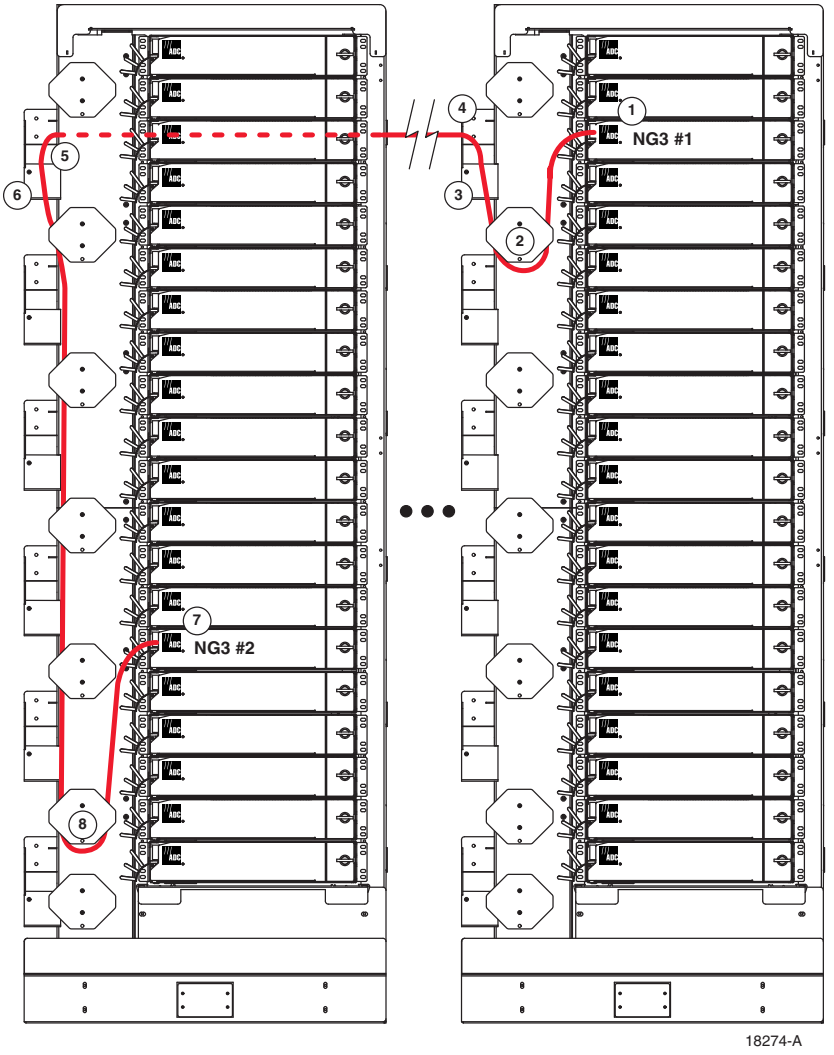


Front View of Frame

Cross-Connect Within Multiple Frames

Using Recommended Patch Cord Length

Route patch cords in order shown. Observe guidelines on pages 5-12.

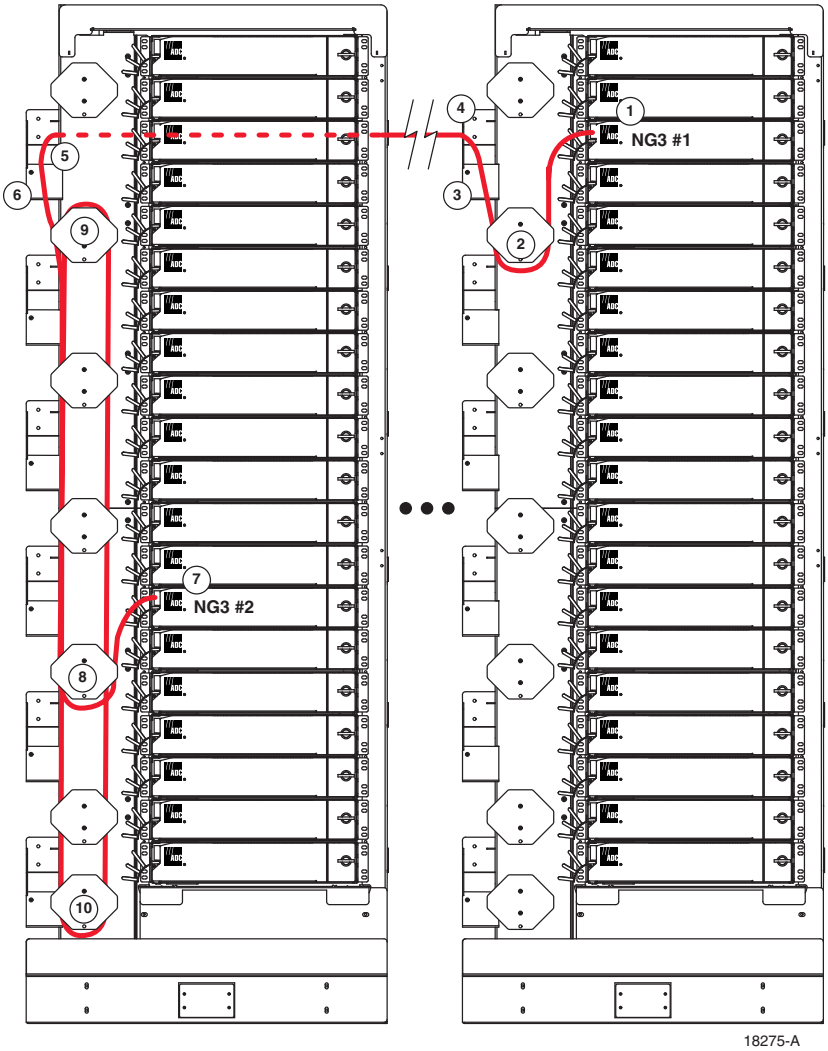


Front View of Frame

Cross-Connect Within Multiple Frames

Using Longer Than Recommended Patch Cord Length

Route patch cords in order shown. Observe guidelines on pages 5-12.

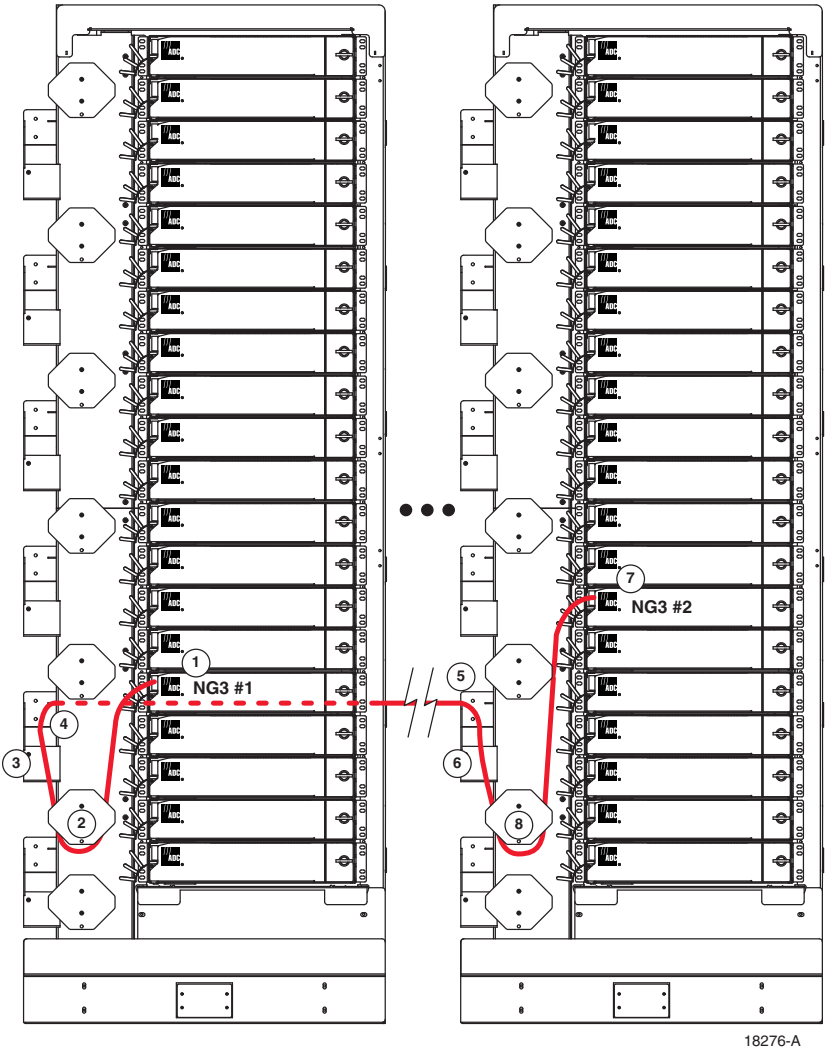


Front View of Frame

Cross-Connect Within Multiple Frames

Using Recommended Patch Cord Length

Route patch cords in order shown. Observe guidelines on pages 5-12.

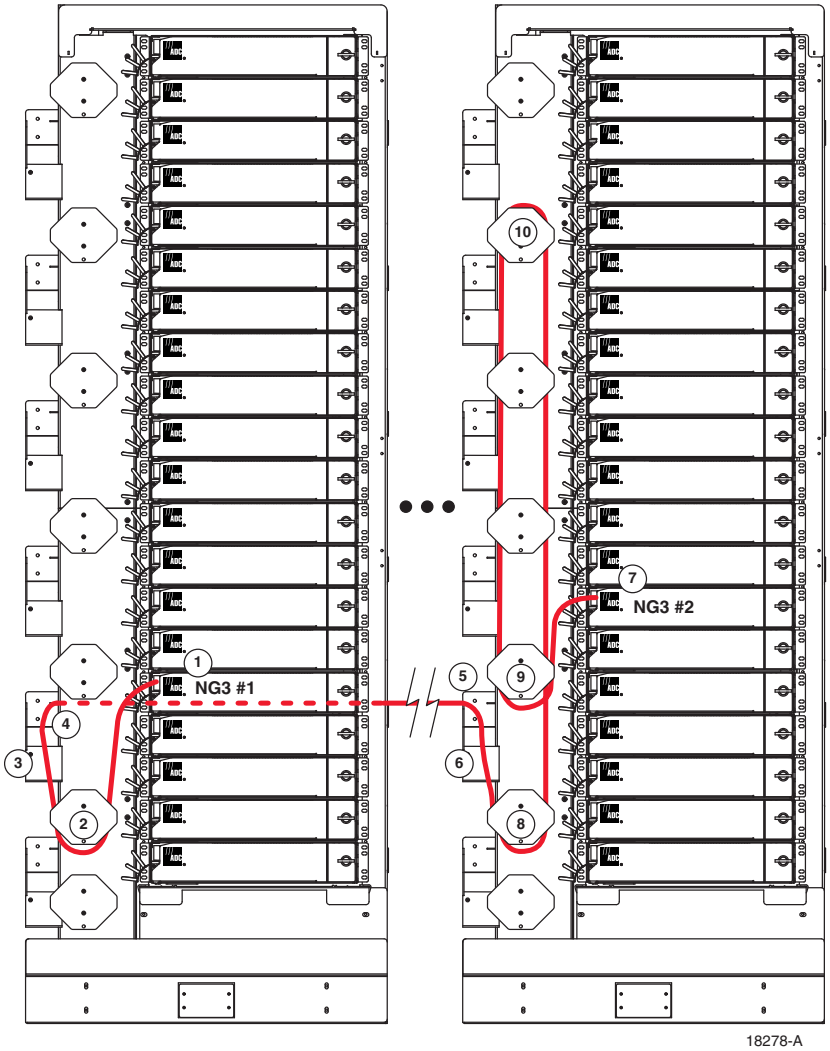


Front View of Frame

Cross-Connect Within Multiple Frames

Using Longer Than Recommended Patch Cord Length

Route patch cords in order shown. Observe guidelines on pages 5-12.

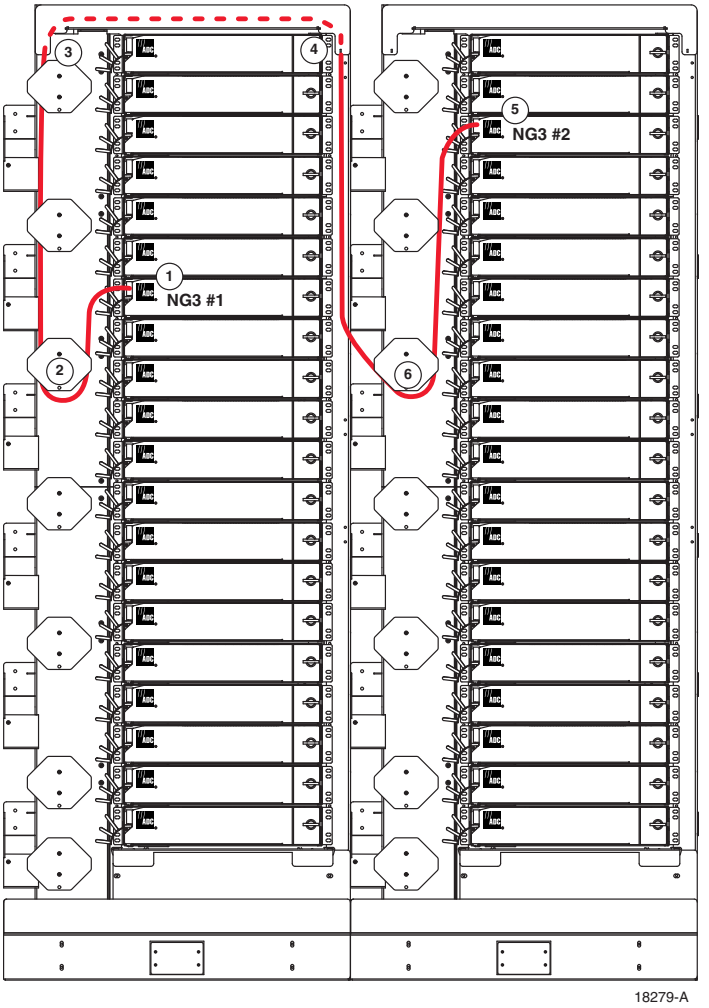


Front View of Frame

Optional Cross-Connect Between Adjacent Frames

Top to Top (Adjacent Frames Only)

When patch cords are routed between adjacent frames, ADC recommends using the rear trough system. However, the front upper and lower troughs may be used as shown on the following pages. Route patch cords in order shown. Observe guidelines on pages 5-12.

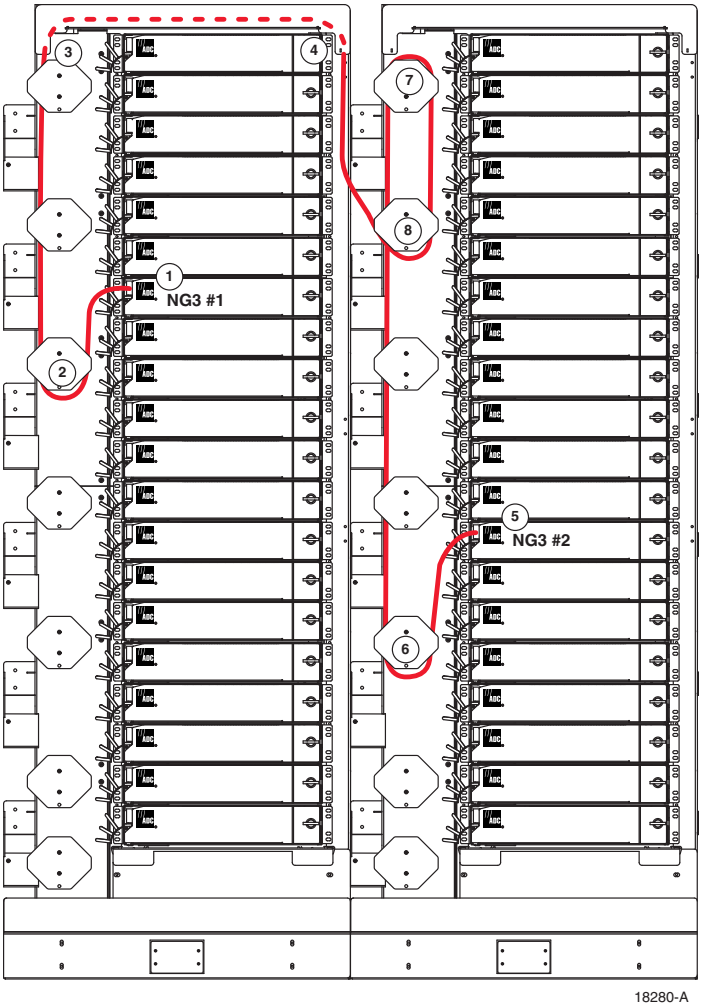


Front View of Frame

Optional Cross-Connect Between Adjacent Frames

Top to Bottom
(Adjacent Frames Only)

When patch cords are routed between adjacent frames, ADC recommends using the rear trough system. However, the front upper and lower troughs may be used as shown on the following pages. Route patch cords in order shown. Observe guidelines on pages 5-12.

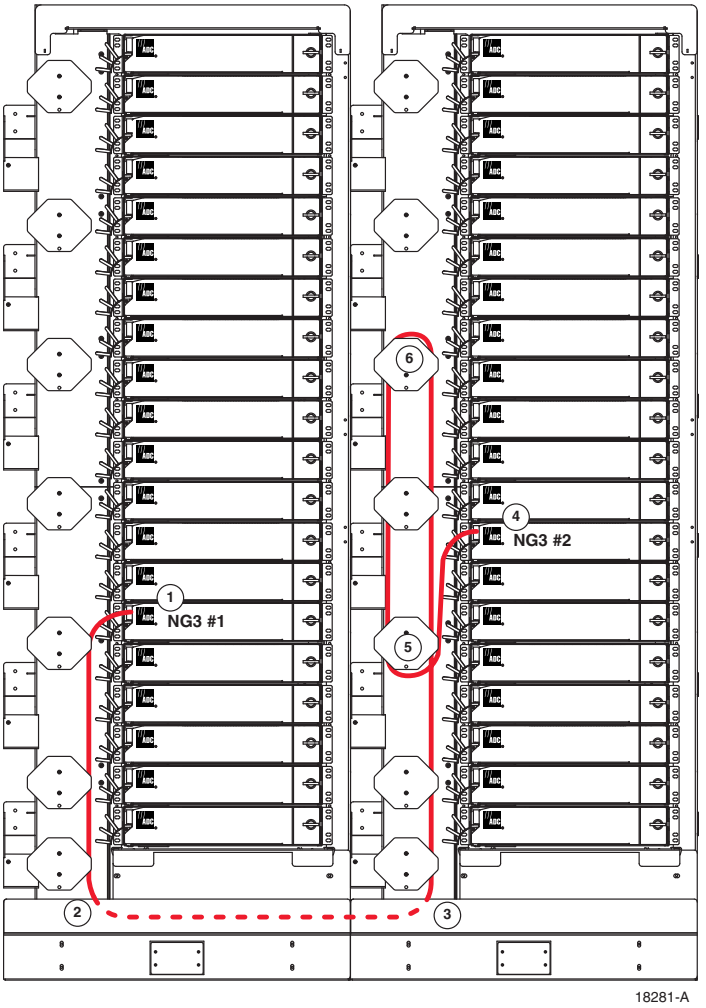


Front View of Frame

Optional Cross-Connect Between Adjacent Frames

Bottom to Bottom (Adjacent Frames Only)

When patch cords are routed between adjacent frames, ADC recommends using the rear trough system. However, the front upper and lower troughs may be used as shown on the following pages. Route patch cords in order shown. Observe guidelines on pages 5-12.

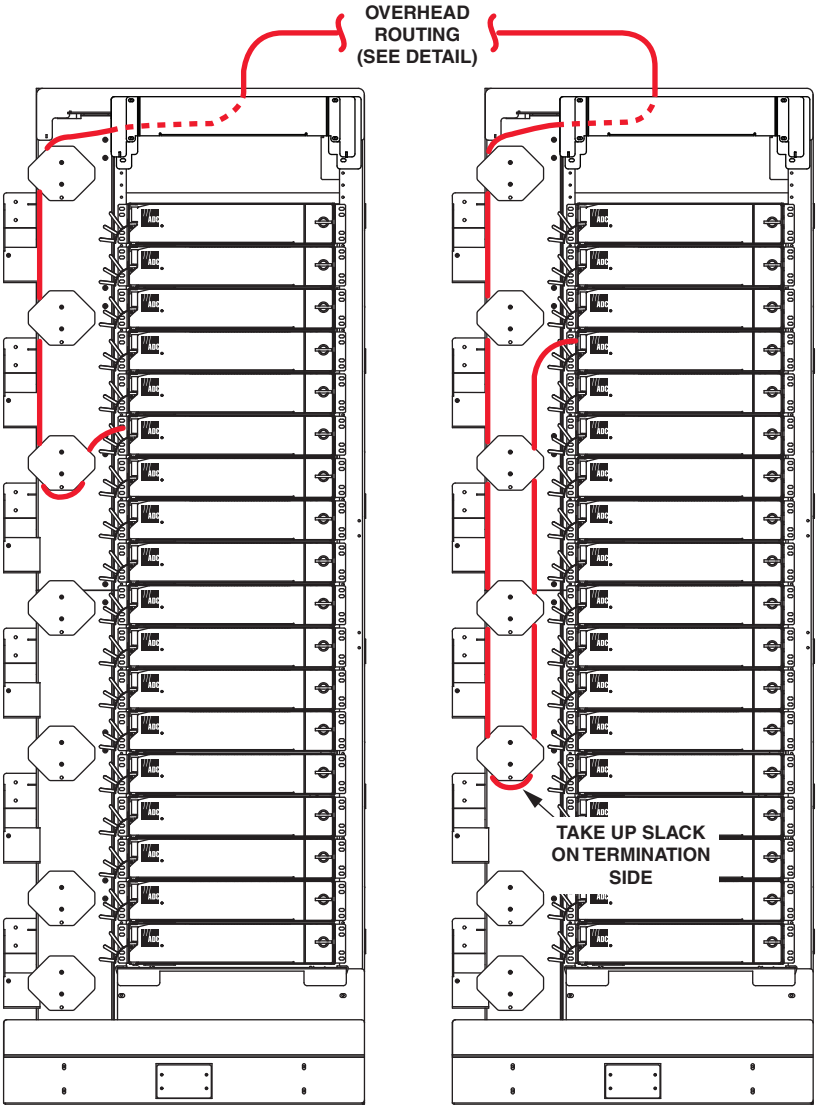


Front View of Frame

Cross-Aisle Routing

Front Side

When routing patch cords from one NG3 frame to another by way of an overhead X-aisle trough system, take up slack at the termination frame.

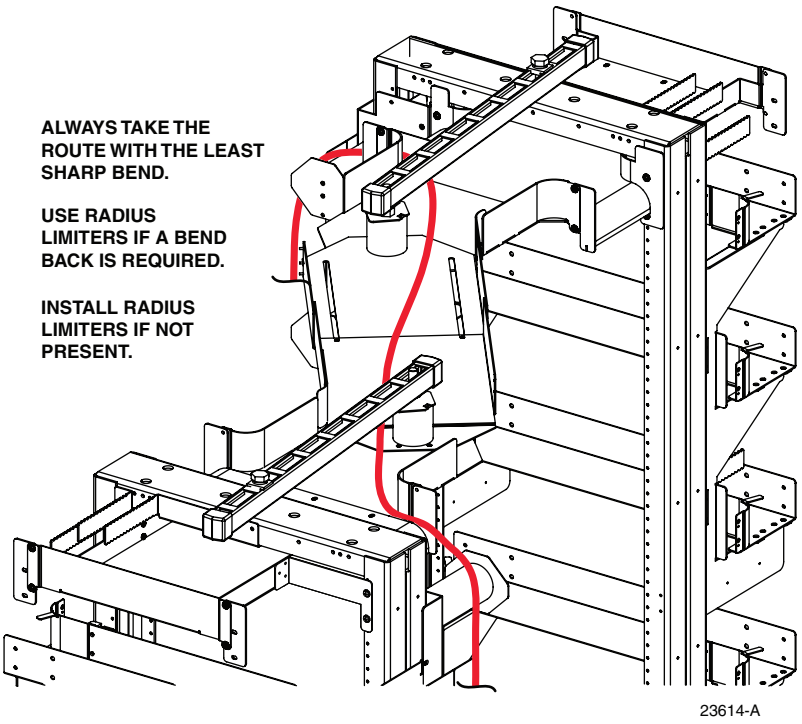


Cross-Aisle Routing, continued

Overhead

Within the overhead trough, route the patch cords so as to minimize sharp bends. Always take the route with the least sharp bend.

Ensure that radius limiters have been installed correctly at the inside and outside corners shown in the illustration.

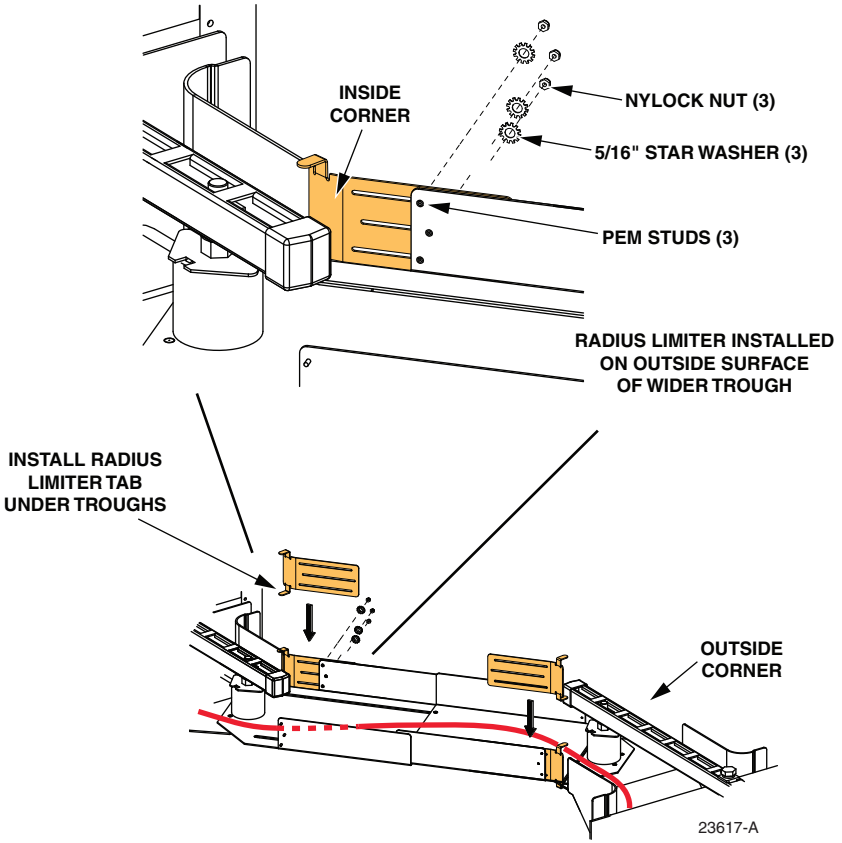


Cross-Aisle Routing, continued

Overhead

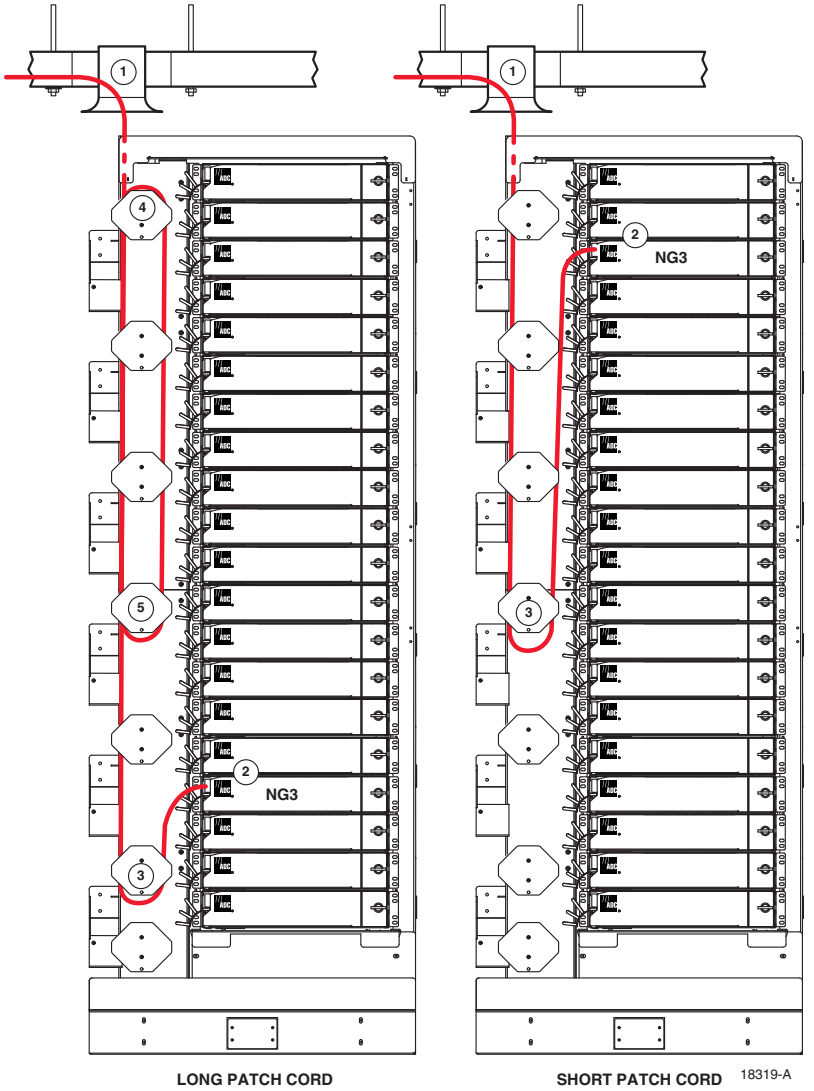
Importance of Radius Limiters

If radius limiters are not present at bend points in the overhead X-aisle trough system, install them using the kit components provided, as illustrated below.



Interconnect Application

Route the FOT patch cord as shown. Observe guidelines on pages 7-12.



Front View of Frame