

SEISMIC PROTECTION SYSTEMS

Bracing Products for Racks & Cabinets



Seismic Frame® Two-Post Rack

Seismic Protection Products - Racks

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Seismic Frame® Cabinet System

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SEISMIC PROTECTION SYSTEMS

It is much easier to prepare for the next seismic event than to predict it. This is especially important for data centers that cannot afford to be offline or are not backed up at a secondary location. To reduce this risk and minimize equipment damage, additional seismic bracing for racks, cabinets, runway and trays is required and used in many parts of the world.

Structural engineers can use CPI Seismic Protection Systems to reduce excessive motion that may cause undue strain on cable or conduit interconnection, which may help equipment remain operational.

OSHPD Pre-Approved Products:

CPI is also helping customers reduce the Office of Statewide Health Planning and Development (OSHPD) approval cycle as they plan installations in seismically active regions by obtaining the OSHPD Pre-Approval (OPA) numbers for several CPI products. OSHPD is the regulatory agency for the state of California that oversees the construction of hospital facilities. When equipment such as CPI Racks, Cabinets and Enclosure Systems are installed in California hospitals, OSHPD is responsible for reviewing and approving the anchorage design, as well as the architectural structure design. Find OSHPD Pre-Approved (OPA) part numbers and other useful design tools at www.chatsworth.com/designtools.

CPI Seismic Protection Systems feature:

- Seismic Products for Rack Systems
- Seismic Products for Cable Runway and Tray
- Seismic Products for Cabinet and Enclosure Systems
- Seismic Frame® Cabinet System

To reduce the risk of equipment damage from seismic events, check all codes, rules and regulations in your area. Utilize the service of a structural engineer, and follow his/her suggestions. CPI offers an assortment of Seismic Protection Systems to stiffen, brace and stabilize racks and rack-mounted equipment to comply with your structural engineer's recommendations.

Patented



Seismic Frame® Two-Post Rack

CPI's Seismic Frame® Two-Post Rack is designed specifically to support network equipment in areas with seismic activity. The welded, steel Seismic Frame Two-Post Rack resists the swaying motion caused by earthquakes to reduce the amount of vibration transferred through the rack to equipment and is less likely to be damaged during a seismic event.

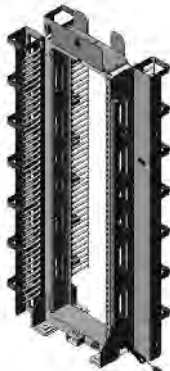
The Seismic Frame Two-Post Rack supports 19" EIA-310-D compliant or 23"W equipment with two pairs of mounting rails that can be spaced 6" (150 mm) or 3" (80 mm) apart. The mounting rails are marked and numbered with rack-mount units (U) and are available threaded or square-punched with painted or zinc-plated finish. This rack ships fully assembled and includes a Two Mounting Hole Ground Terminal Block for bonding the rack to the busbar. The rack is rated for a 1,000 lb (453.6 kg) seismic Zone 4 load per Section 4.4 of the Telecordia® Technologies, Inc. GR-63-CORE Network Equipment Building Systems (NEBS) requirements.

Features:

- Welded, steel network equipment rack engineered specifically to protect equipment in areas with seismic activity
- Available in two sizes; 24"W (610 mm) or 28"W (710 mm)
- Vertical Powers Strips and T-shaped Cable Management Fingers attach directly to the rack channel to provide power and cable distribution for equipment
- 19"W Rack fits within a 24" (610 mm) access floor tile
- Fully bonded rack has (2) masked grounding locations and includes a Two Mounting Hole Ground Terminal Block for easy connection to the Telecommunications Grounding Busbar
- Independently seismic-tested and certified, meets industry recognized Telecordia® Technologies, Inc. GR-63-CORE Network Equipment Building Systems (NEBS) Zone 4 requirements
- EIA-310-D Compliant
- UL Listed NWIN per UL60950, File E227626
- 1000 lb (453.6 kg) load rating for seismic areas

Rack Includes:

- (1) welded, steel frame
- (4) equipment mounting rails
- (50) each equipment mounting screws/cage nuts
- (1) Two Mounting Hole Ground Terminal Block



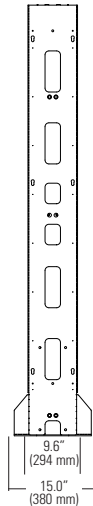
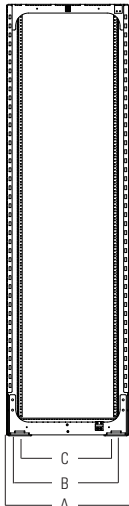
Seismic Frame® Two-Post Rack populated with available accessories



Adjustable Depth Mounting Rails



Two Mounting Hole Ground Terminal Block



Seismic Frame Two-Post Rack

Open, two-post, seismic rack supports 19" EIA or 23" wide rack-mount equipment.

Part Number	Description H x W ft (m)	Shipping Weight lb (kg)
13853-X03	7 (2.1) x 19", 44U Tapped #12-24 Zinc Rails	180 (81.6)
13854-X03	7 (2.1) x 19", 44U Square-Punched Zinc Rails	178 (80.7)
13855-X03	7 (2.1) x 19", 44U Tapped #12-24 Painted Rails	180 (81.6)
13856-X03	7 (2.1) x 19", 44U Square-Punched Painted Rails	178 (80.7)
13883-X03	7 (2.1) x 23", 44U Tapped #12-24 Zinc Rails	185 (83.9)
13884-X03	7 (2.1) x 23", 44U Square-Punched Zinc Rails	183 (83.0)
13885-X03	7 (2.1) x 23", 44U Tapped #12-24 Painted Rails	185 (83.9)
13886-X03	7 (2.1) x 23", 44U Square-Punched Painted Rails	183 (83.0)

X=Color; 1=Gray, 2=Computer Beige, 7=Black.
Install using (4) seismic-rated concrete anchors (sold separately).

Description	19 in (mm)	23 in (mm)
Overall Width (A)	24.0 (610)	28.0 (710)
Frame Opening (B)	19.3 (490)	23.3 (592)
Rail Clearance (C)	17.75 (450)	21.75 (552)



Cable Management Fingers Kit

- Organize patch cords and jumper cables by rack-mount unit.
- 7U T-shaped plastic cable guides snap onto the front and rear of the rack frame
 - Openings between the T-shaped guides align with each rack-mount unit on the rack
 - Single-Sided Kit includes 12 cable guides for one side (front or rear) of the rack
 - Double-Sided Kit includes 24 cable guides for both sides (front and rear) of the rack

Part Number	Description	Shipping Weight lb (kg)
13696-001	Cable Management Fingers Kit, Single-Sided	7 (3.2)
13696-002	Cable Management Fingers Kit, Double-Sided	14 (6.4)

Color is Black.

Seismic Frame Accessories

VCS Vertical Cabling Section

Two aluminum cable managers, 6"W x 6.38"D (150 mm x 162 mm), attach to align with the front and rear of the rack. Large cable pass-through ports on the back of each manager align with openings in the side of the frame; spin-open plastic latches secure cables in managers. Attach two CPI Vertical Power Strips to slots on the back of the manager using the mounting kit listed below. One Single-Sided Cable Management Fingers Kit included to organize cables.



13704-703

VCS Vertical Cabling Section Offset Bracket

Brackets attach a Single-Sided Wide VCS (P/N 11374-X03) to the Seismic Frame Two-Post Rack so that it aligns with the front of the rack. Kit includes four brackets, use two brackets per side to attach the cabling section.



13699-701

Floor Drilling Template

Durable 28"W x 15"D (710 mm x 380 mm) aluminum template locates floor mounting holes for 19"W and 23"W Seismic Frame Two-Post Racks.



13703-701

Concrete Floor Anchor Kit

Includes four M12 x 5-1/8" Hilti HSL-3-G Heavy Duty Sleeve Anchors to attach Seismic Frame Two-Post Rack to a concrete slab floor. Minimum recommended thickness of the concrete slab on the ground floor is 5-1/2" (140 mm). Each rack must be secured to the structural floor. Spacing between racks should be determined by a licensed structural engineer familiar with seismic applications and codes.



13702-001

Vertical Power Strip Mounting Kit

Includes mounting hardware that allows two CPI Vertical Power Strips to attach to the keyholes on the sides of the Seismic Frame Two-Post Rack or the back of the Vertical Cabling Section listed above. Cannot be used on the same side as the Vertical Cabling Section or Cable Management Fingers Kit.



13697-001

Duplex Electrical Outlet Box

Provides a location for a power connection at the base of the rack. Includes a single-gang box for a single duplex receptacle and two self-tapping Torx head T25 installation screws. Outlet box is welded steel, 3-3/4"H x 1-13/16"W x 2-1/2"D (95 mm x 46 mm x 64 mm) with a 15.5 in² (250 cm²) wiring capacity, has eight (four accessible) concentric knockouts for 1/2" or 3/4" conduit, and is zinc galvanized for corrosion protection. UL Listed.



13698-001

Part Number	Description	Shipping Weight lb (kg)
13704-X03	VCS Vertical Cabling Section, Black	35 (15.9)
13699-701	VCS Offset Mounting Bracket Kit, Black	2 (0.9)
13703-701	Floor Drilling Template, Black	6 (2.7)
13702-001	Concrete Floor Anchor Kit	3 (1.4)
13697-001	Vertical Power Strip Mounting Kit	1 (0.5)
13698-001	Duplex Electrical Outlet Box, Zinc	1 (0.5)

P/N 11374-X03, X=Color, 1=Gray, 2=Computer Beige, 7=Black.

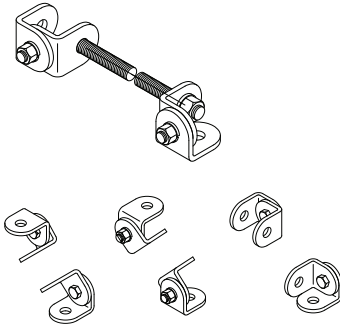
Universal Earthquake Bracing Kit

This adjustable wall/ceiling brace provides a means of securing an equipment rack or auxiliary frame to meet earthquake safety codes.

- Material is 2" x 1/4" (50 mm x 6.35 mm) steel finished with Gold Chem Film over zinc plating

Kit consists of:

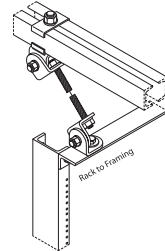
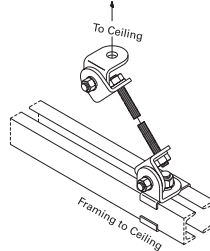
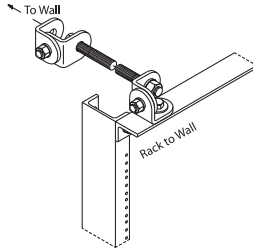
- (4) brackets (make 2 swivel brackets)
- (2) 1/2-13 x 1 1/4" hex bolts
- (2) 1/2-13 hex nuts
- (2) 1/2" split lock washers



Part Number	Description	Shipping Weight lb (kg)
10562-001	Universal Earthquake Bracing Kit	3 (1.4)

Note: Seismic installation requirements should be approved by a licensed structural engineer.

Installation drawings:



Installation will require (not included):

- (1) 5/8-11 threaded rod of appropriate length
Rod must be trimmed to proper length during installation
- (2) 5/8-11 hex nuts
- (2) 5/8 flat Type A washer, wide
- Clip kit and hardware for attachment to channel or bar

Installation may also require (not included):

For concrete ceiling:

- (1) 5/8-11 concrete anchor
- (1) 5/8-11 x 3" stud
- (2) 5/8-11 hex nuts
- (1) 5/8" split lock washer
- (1) 5/8" flat, washer, wide, Type A

For rack:

- (1) 5/8-11 x 1 1/4" hex cap screw
- (1) 5/8-11 hex nut
- (1) 5/8" split lock washer

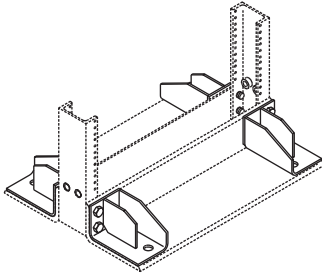
For auxiliary frame or grid:

- (1) Grid Clamp Kit
- (1) 5/8-11 x 3 1/4" hex screw cap
- (1) 5/8-11 hex nut
- (1) 5/8" split lock washer

For plywood backboard:

- (1) 5/8" x 2" hex lag screw
- (1) 5/8" split lock washer

Rack Seismic Gusset Kit



The Rack Seismic Gusset and Hardware Kit can be added to any CPI Universal Rack (46XXX series) to stiffen critical load bearing joints, reducing the need to stabilize the top of the rack.

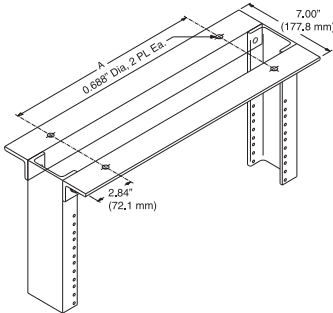
- Adds additional support to critical rack joints
- Kit can be added to any CPI Universal Rack (46XXX series)

Kit consists of:

- (4) welded steel bolt-on gussets
- (8) 1/2-13 x 1-1/4" bolts
- (8) 1/2-13 nuts

Part Number	Description	Shipping Weight lb (kg)
11592-X01	Gusset and Hardware Kit	10 (4.5)

X=Color; 1=Gray, 2=Computer Beige, 7=Black. Note: Seismic installation requirements should be approved by a licensed structural engineer.



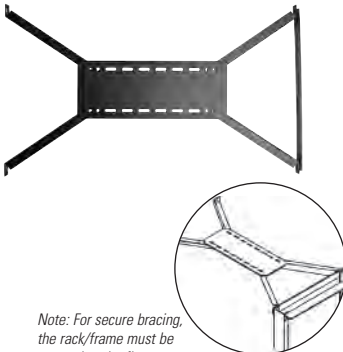
Heavy-Duty Top Angle

Optional top angle for CPI Universal, Standard or 6"D (150 mm) Standard Racks.

- Material is aluminum extrusion, 1 1/2" x 2" x 1/4" (38.1 mm x 51 mm x 6.4 mm) with two 11/16" (17.46 mm) punched holes in top surface
- Recommended to be used in pairs with 10562-001 bracing
- Sold individually

Part Number			
19" Rack	Dim. A	23" Rack	Dim. A
10473-X01	14.57 (370.1)	10473-X02	18.57 (471.7)

X=Color; 1=Gray, 2=Computer Beige, 5=Clear, 7=Black, E=Glacier White.



Adjustable Bracing Kit For Racks

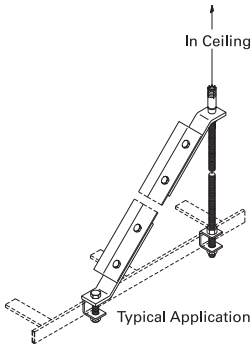
This adjustable, strong, easy-to-install rack bracing kit provides a cost effective, attractive solution to bracing for equipment rack. Attaches directly to the wall.

- Adjustable 24" to 36" D (610 mm to 910 mm) from wall
- Made of strong lightweight aluminum
- Available in 19" and 23" widths
- Available in four colors to complement rack installations

Note: For secure bracing, the rack/frame must be secured to the floor.

Part Number	Description	Shipping Weight lb (kg)
12407-X19	19"W Kit	6 (2.7)
12407-X23	23"W Kit	7 (3.2)

X=Color: 1=Gray, 2=Computer Beige, 5=Clear, 7=Black



Single Earthquake Bracing Kit

Stabilizes Cable Runway hung from threaded rods. Material is 2" x 3/8" (50 mm x 9.53 mm) steel with gold over zinc plating.

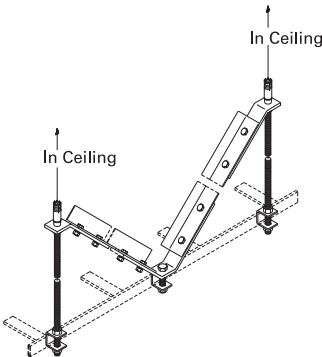
Kit consists of:

- (2) steel bars (45° angle)
- (4) 1/2-13 x 1 1/4" hex nuts & cap screws
- (4) 1/2" split lock washers

Installation will require (not included):

- Threaded rod and runway attachment hardware
- (1) 2" x 2" x 3/16" (50 mm x 50 mm x 4.763 mm) steel angle of appropriate length. See P/N 11420 (angle must be trimmed to proper length and drilled during installation)

Part Number	Description	Shipping Weight lb (kg)
10695-001	Single Earthquake Brace	8 (3.6)



Double Earthquake Bracing Kit

Stabilizes Cable Runway hung from threaded rods. Material is 2" x 3/8" (50 mm x 9.53 mm) steel with gold over zinc plating.

Kit consists of:

- (2) steel bars (45° angle)
- (1) "V" steel bar
- (8) 1/2-13 x 1 1/4" hex cap screws
- (8) 1/2-13 hex nuts
- (8) 1/2" split lock washers

Installation will require (not included):

- Threaded rod and runway attachment hardware
- (2) 2" x 2" x 3/16" (50 mm x 50 mm x 4.763 mm) steel angle of appropriate length. See P/N 11420 (angle must be trimmed to proper length and drilled during installation)

Part Number	Description	Shipping Weight lb (kg)
10696-001	Double Earthquake Brace	14 (6.4)

Note: Seismic installation requirements should be approved by a licensed structural engineer.

Installation may also require (not included):

For concrete ceiling:

- 5/8-11 concrete anchors
- 5/8-11 x 3 1/2" studs
- 5/8-11 hex nuts
- 5/8" split lock washers

For secondary structure:

- 5/8-11 threaded rod
- Grid Clamp Kits
- 5/8-11 hex cap screws
- 5/8-11 hex nuts
- 5/8" split lock washers

Seismic Equipment Bracket for Cabinets



The Seismic Equipment Bracket prevents back-and-forth, side-to-side and up-and-down movement of shelf-mounted equipment by bracing the equipment's chassis to the cabinet's vertical mounting rails.

- Uses 1U of mounting space, securing equipment between 15" and 32" (380 mm and 810 mm) in depth
- The bracket easily adjusts into multiple configurations which provides security for shelf-mount equipment of different depth or height
- The bracket will adjust in depth for use in any of CPI's 24", 30", 36" or 39"D (610 mm, 760 mm, 910 mm or 990 mm) MegaFrame®, SlimFrame®, SteelFrame, Seismic Frame® Cabinets and TeraFrame® Cabinets

19" Width	23" Width	Color	Shipping Weight lb (kg)
14061-119	14061-123	Gray	6 (2.7)
14061-219	14061-223	Computer Beige	6 (2.7)
14061-719	14061-723	Black	6 (2.7)

Adjustable Bracing Kit for Cabinets

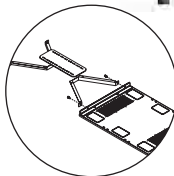


Attach bracing kit to cabinet top panel where there is a risk of seismic activity. Earthquake design criteria specify that equipment remain operational when subjected to earthquakes even though some small amount of repairable secondary physical damage may occur.

- Adjustable 24" to 36" (610 mm to 910 mm) distance from wall
- For use with M-Series, E-Series and Seismic Frame Cabinets

Part Number	Description	Shipping Weight lb (kg)
12477-X19	19"W Kit	6 (2.7)
12477-X23	23"W Kit	7 (3.2)

X=color: 1=Gray, 2=Computer Beige, 7=Black



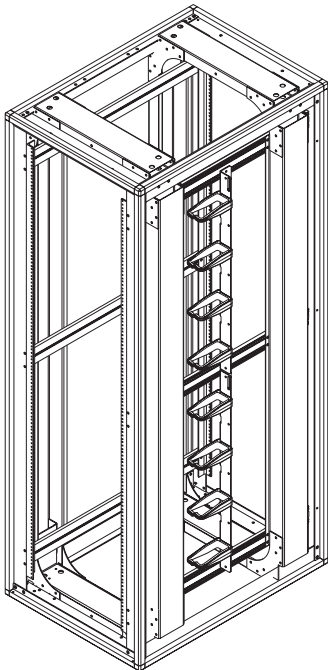
Note: For secure bracing, attach the cabinet to the floor using the proper floor installation kit along with CPI floor Anchor Clamp provided with each cabinet.

Seismic Frame® Cabinet System

Rated Zone 4 compliant to Bellcore GR-63-CORE for Network Equipment Building Systems (NEBS), Section 4.4.1.1, the Seismic Frame® Cabinet System is designed to withstand the seismic stress of an 8.3 Richter scale earthquake.

Offered in a 84"H x 19"W x 36"D (2130 mm x 910 mm) cabinet solution, the aluminum outer frame provides the sound structural environment necessary for sensitive Information Technology (IT) hardware components.

- Standard 19" EIA rack width
- Features square-punched mounting rails with rack-mount unit marks
- Aluminum outer frame with steel inner frame delivers maximum strength with minimum weight
- Seismic bracing kits and a full line of structural enhancement products are available to support site-specific structural requirements
- Internal cable management provides flexibility for wire routing and fits on-site customization
- Adjustable front to rear vertical mounting rails allow use as a standard four-post cabinet or two-channel rack
- Load Rating: 800 lb (362.9 kg) seismic



Closeup of reinforced inner frame

Cabinet Dimensions

Usable Height	43U
Usable Depth	36" (910 mm)
Usable Width	19" EIA
Overall Height	84.13" (2136.9 mm)
Overall Depth (w/doors)	39.62" (1006.3 mm)
Overall Width	27.32" (693.9 mm)
Shipping Weight	286 lb Min / 376 lb Max (129.7 kg) / (170.6 kg)

84" H x 19" W x 36" D (2130 mm x 910 mm) Seismic Cabinet		
Part Number	Cabinet Door Style	
	Front	Rear
11972-X02	No Front	No Rear
11972-X12	Plexiglass	Metal
11972-X22	Metal	Metal
11972-X32	Vented Plexiglass	Perforated Metal
11972-X42	Perforated Metal	Perforated Metal
84" H x 19" W x 36" D (2130 mm x 910 mm) Without Side Panels		
Part Number	Cabinet Door Style	
	Front	Rear
11973-X02	No Front	No Rear
11973-X12	Plexiglass	Metal
11973-X22	Metal	Metal
11973-X32	Vented Plexiglass	Perforated Metal
11973-X42	Perforated Metal	Perforated Metal

X= color: 1=Gray, 2=Computer Beige 7=Black. Frame is anodized aluminum

84" H x 19" W x 36" D (2130 mm x 910 mm) Frame Only**	
Part Number	Cabinet Door Style
11974-X02	Frame Only

X= color: 1=Gray, 2=Computer Beige, 7=Black. **Frame is anodized aluminum