

Standard Hangers and Adapters

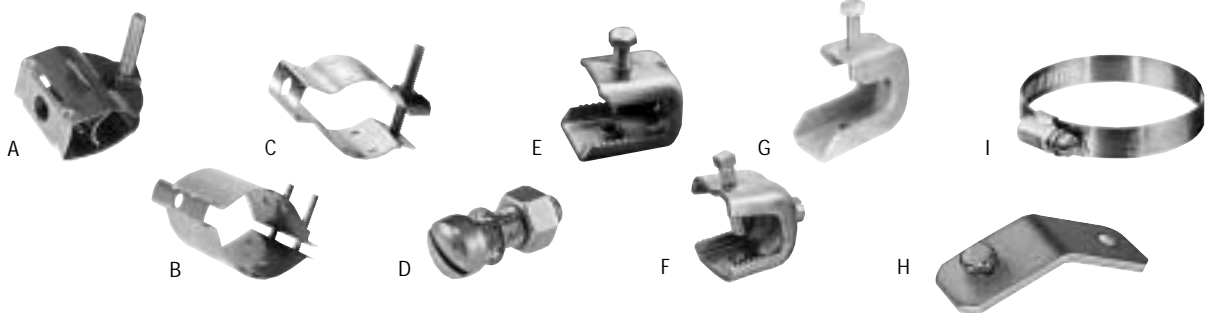
Cable Gripping Tabs – Prevent cable slippage without the need for a permanently installed hoisting grip.

Pre-Assembled and Captivated Hardware – Eliminates the need for field assembly.

Springlike Flexibility – Makes it easy to form the hanger around the cable and dampens vibration for long life.

Heavy Gauge Stainless Steel Construction – High strength and excellent corrosion resistance for long-term reliability.

Standard HELIAX hangers are designed for easy installation. The clamp locking bolt and nut are preassembled and captivated to minimize installation labor. Proper tension is easy to determine. The hanger is simply tightened until there is a 5/16" gap between the clamp legs. The pre-drilled hole for 3/8" or 1/2" mounting hardware and slots for round member adapter clamps further simplify installation. Many accessories are available to adapt these hangers to most tower configurations.



Standard Hangers and Adapters for 1/2" to 4" Cables

Hangers for 1/2" to 4" HELIAX® cables use 3/8" hardware for attachment to towers or adapters.

Hanger Kit of 10 pieces. Stainless steel. 3/8" mounting hardware not included.

| Cable Size | Maximum Spacing | Photo Ref. | Type Number |
|------------|----------------------------|------------|-------------|
| 1/2" | Refer to table on page 594 | A | 43211A |
| 5/8" | | B | 42396A-9 |
| 7/8" | | B | 42396A-5 |
| 1-1/4" | page 594 | B | 42396A-1 |
| 1-5/8" | | B | 42396A-2 |
| 2-1/4" | B | 42396A-4 | |
| 3" | C | 31766A-11 | |
| 4" | C | 31766A-10 | |

D Hardware Kit of 10 sets. 3/8" fillister-head bolts, lock washers and nuts for attachment of hangers to drilled tower members.

3/4" (19 mm) longType **31769-5**
 1" (25 mm) longType **31769-1**

E Compact Angle Adapters, Stainless Steel. The adapters are suitable for use with single runs of HELIAX cable up to 2-1/4" diameter. When used with our stackable, Click-On hangers, they can accommodate up to six runs of LDF6 (1-1/4") or smaller and up to four runs of LDF7 (1-5/8") HELIAX cables.

3/8" HardwareType **243684**
 Metric HardwareType **243684-M**

F Angle Adapter, Stainless Steel, kit of 10 pieces. For mounting cable 1/2" to 4" cable hangers to angle tower members up to 7/8" (22mm) thick. Includes hanger attachment hardware. See page 570 for bulk packs
 3/8" HardwareType **31768A**
 Metric HardwareType **31768A-M**

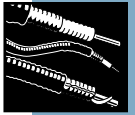
G Angle Adapter, Galvanized, kit of 10 pieces. For mounting cable 1/2" to 2-1/4" cable hangers to angle tower members up to 3/4" (19 mm) thick. Includes hanger attachment hardware.
 3/8" Hardware, kit of 10Type **242774**
 Metric Hardware, kit of 10Type **242774-M**

H 45° Adapter Kit of 10. Use with angle adapter and threaded rod support kit to place a hanger at a waveguide bend. Galvanized steelType **42334**

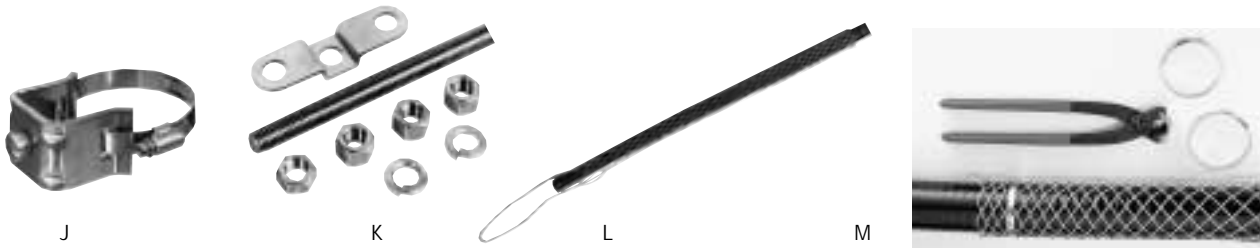
I Round Member Adapter Kit of 10 pieces. Stainless steel clamps to mount 1/2" to 4" cable hangers to round support members. Two each are needed for 3" and 4" cable hangers.

| Member Diameter, in (mm) | Type Number |
|--------------------------|----------------|
| 1 - 2 (25 - 50) | 31670-1 |
| 2 - 3 (50 - 75) | 31670-2 |
| 3 - 4 (75 - 100) | 31670-3 |
| 4 - 5 (100 - 125) | 31670-4 |
| 5 - 6 (125 - 150) | 31670-5 |
| 6 - 8 (150 - 200) | 31670-6 |

Standard Hangers and Adapters



HELIX® Coaxial Cables



J Tower Standoff Kit of 10 pieces. Adapters with round member clamps and hardware for 1/2" to 4" hangers. All parts are stainless steel or galvanized.

| Member Diameter in (mm) | 1 in (25 mm) Standoff | 2.5 in (60 mm) Standoff |
|----------------------------|--------------------------|----------------------------|
| 0.75 - 1.5 (20 - 40) | 30848-5 | - |
| 1.5 - 3.0 (40 - 75) | 30848-4 | - |
| 3 - 4 (75 - 100) | 30848-1 | 41108A-1 |
| 4 - 5 (100 - 125) | 30848-2 | 41108A-2 |
| 5 - 6 (125 - 150) | 30848-3 | 41108A-3 |

K Threaded Rod Support Kit. Use to mount hangers away from supporting structure, under cable bridge and inside equipment room. Includes 3/8" diameter threaded rod, galvanized ceiling mounting plate, nuts and washers. Attach to angle tower members with 31768A angle adapters. Attach to round tower members with 30848 series tower standoffs. All components are stainless steel, except ceiling mounting plate.

| Rod Length in (mm) | Kit of 1 | Kit of 5 |
|-----------------------|----------|----------|
| 12 (305) | 31771 | 31771-4 |
| 24 (610) | 31771-9 | 31771-6 |
| 36 (915) | - | 31771-10 |

L Hoisting Grip. Use at 200 ft (60 m) intervals to raise cable on tower. Use with optional support clamp to achieve optimum cable grip.

| Cable Size | Hoisting Grip Type Number | Optional Support Clamp Type Number |
|------------|------------------------------|---------------------------------------|
| 1/2" | 43094 | F4SGRIP-4IK |
| 5/8" | 29958 | L45SGRIP-45IK |
| 7/8" | 19256B | L5SGRIP-5IK |
| 1-1/4" | 29961 | L6SGRIP-6IK |
| 1-5/8" | 24312A | L7SGRIP-7IK |
| 2-1/4" | 31535 | L12SGRIP-12IK |
| 3" | 26985A | - |
| 4" | 34759 | - |
| 5" | 31031-1 | - |

M Support/Hoisting Grip. Use at 200 ft (60 m) intervals to raise cable and provide permanent cable support. Basic kit includes one grip and one support clamp. Support clamps are also available in kits of 10. Installation tool is requiredType SG-IT

| For Cable Type | Grip with One Clamp | Support Clamp Kit of 10 |
|------------------|------------------------|----------------------------|
| 1/4" FSJ1 | F1SGRIP | F1SGRIP-11K |
| 1/4" LDF1 | L1SGRIP | L1SGRIP-11K |
| 3/8" EFX2 | E2SGRIP | E2SGRIP-21K |
| 3/8" LDF2 | L2SGRIP | L2SGRIP-21K |
| 3/8" FSJ2 | F2SGRIP | F2SGRIP-21K |
| 1/2" FSJ4 | F4SGRIP | F4SGRIP-41K |
| 1/2" LDF4 | L4SGRIP | L4SGRIP-41K |
| 5/8" LDF4.5 | L45SGRIP | L45SGRIP-45IK |
| 7/8" LDF5/VXL5 | L5SGRIP | L5SGRIP-51K |
| 1-1/4" LDF6/VXL6 | L6SGRIP | L6SGRIP-61K |
| 1-5/8" LDF7/VXL7 | L7SGRIP | L7SGRIP-71K |
| 2-1/4" LDF12 | L12SGRIP | L12SGRIP-121K |

Standard Hangers and Adapters for 5" Cables

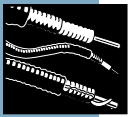
Hangers for 5" HELIX® cables use 1/2" hardware for attachment to towers or adapters.

Hanger Kit of 10 pieces. Galvanized steel. 1/2" mounting hardware not included. Refer to page 594 for maximum spacingType **33598-5**

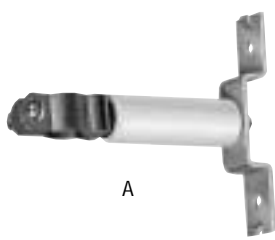
A Hardware Kit of 10 pieces 1/2" x 1-1/4" (32 mm) bolts, lockwashers, and nuts for attachment of 5" hangers to drilled tower membersType **31769-4**

B Angle Adapter Kit of 10 pieces. Stainless steel. For mounting 5" cable hangers to angle tower members up to 7/8" (22 mm) thickType **33981A-1**





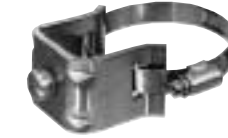
Insulated Hangers and Adapters



A



B



C



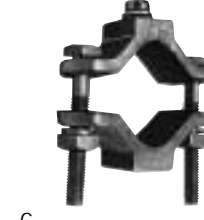
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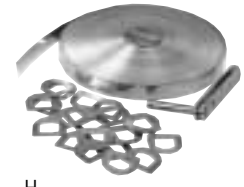
E



F



G



H

A Insulated Hanger for 1/4" to 7/8" Cables, Single. For use on insulated tower. Refer to tables on pages 596 and 597 for maximum spacing.

For 1/4", 3/8" and 1/2" cablesType **11662-3**
 For 7/8" cableType **11662-2**

B Insulated Hanger for 1-1/4" - 5" Cables Single. For use on insulated tower.

| Cable Size | Max. Spacing | Type Number |
|------------|------------------------------|----------------|
| 1-1/4" | Refer to | 33948-5 |
| 1-5/8" | tables on pages 596 and 597. | 33948-3 |
| 2-1/4" | | 33948-6 |
| 3" | | 33948-2 |
| 4" | | 33948-4 |
| 5" | | 33948-1 |

C Round Member Adapter/Tower Standoff Kit of 10 pieces. For mounting 5" cable hangers to round support members. HELIAX® cable to clear tower leg flanges. Provides 2.5 in (60 mm) standoff. All parts are stainless steel or galvanized.

| Member Diameter, in (mm) | Type Number |
|--------------------------|----------------|
| 3 - 4 (75 - 100) | 43130-1 |
| 4 - 5 (100 - 125) | 43130-2 |
| 5 - 6 (125 - 150) | 43130-3 |

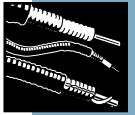
D Threaded Rod Support Kit of 5 pieces. 1/2" x 12" (305 mm) threaded rods, ceiling mounting plates, nuts and washers for suspending 5" cable hangers. All parts are stainless steel except galvanized ceiling mounting plateType **31771-5**

Angle Adapter Single. For insulated hangers. Maximum member thickness 7/8 in (22 mm).

E For 1/2" and 7/8" cableType **40430-1**
F For 1-1/4" - 5" cableType **13555A**

G Round Member Adapter Single. For use with Type 33948 series (1-1/4"-5" cables) insulated hangers. Fits member diameters 1-3 in (25 - 75 mm).Type **13550**

H Stainless Steel Wraplock 100 feet complete with fasteners. Use to attach 1/4" - 7/8" insulated hangers to round members. Not to be used to attach cable or waveguide directly to towers.....Type **12395-1**



Snap-In Hangers and Adapters

Snap-In Hangers

Attach Without Hardware

Quick and easy attachment in all types of weather. The hangers snap directly into holes in the tower support members (patents pending). Installation time and cost are substantially reduced.

Heavy Gauge Stainless Steel Construction

High strength and excellent corrosion resistance for long-term reliability.

Snap-In hangers are ideal for microwave, cellular, PCS/PCN, and land mobile radio systems. They are available for 1/2" to 2-1/4" size coaxial cables.

The hanger is designed to be installed into 3/4" holes in support structures 0.120 to 0.150 inch thick. Ergonomically designed for easy installation, the hanger's retention tabs make the hanger highly resistant to pull. The hanger is mounted directly to tower support members by inserting its retention tabs into pre-punched holes in cable support systems.



Snap-In hangers can be used on any tower, by using the specially designed adapters described below. Guyed tower transmission support systems can also accommodate Snap-In hangers, when specified. Made of heavy gauge stainless steel. For hanger spacing recommendations, refer to page 595.

Kit of 10 Hangers

| Cable Size | Type Number |
|------------|-------------|
| 1/2" | 206706-1 |
| 5/8" | 206706A-6 |
| 7/8" | 206706-2 |
| 1-1/4" | 206706-3 |
| 1-5/8" | 206706-4 |
| 2-1/4" | 206706-5 |

Snap-In Adapters

A Tower/Hanger Adapter cable support attaches to existing angle tower members. Includes angle support pre-punched with 3/4" and 7/16" holes to accommodate Snap-In hanger, and standard hanger.

| Number of Cable Runs | J-Bolt or Angle Adapter Connections Required | Type No. |
|----------------------|--|----------|
| 1 | 1 | 206929-1 |
| 4 | 2 | 206929-4 |
| 8 | 3 | 206929-8 |

B J-Bolt Hardware, Kit of 10 for attaching Tower/Hanger Adapter to 1-1/4" to 2-3/4" (32-70 mm) angle tower members. Includes J-bolt, flat washers, lock washers and nutsType **206930**

C Angle Adapter, Kit of 10. For attaching Tower/Hanger Adapter to angle tower members. Stainless Steel, 3/8" hardwareType **31768A**

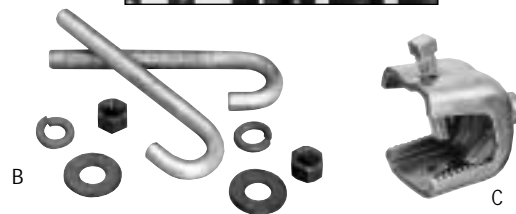
D Cluster Mount**. Octagonal cable support for one to seven cable runs attaches to 1-1/2" nominal steel pipe or 1.90" (48 mm) round tower members. Pre-punched with 3/4" and 7/16" holes to accommodate snap-in hangers and standard hangers. Supplied mounting hardware kit includes 3/8" plated bolts, flat washers, lock washers and nuts.

Kit of 1Type **207030**

Kit of 10Type **207030-2**



A



B

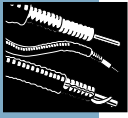


C

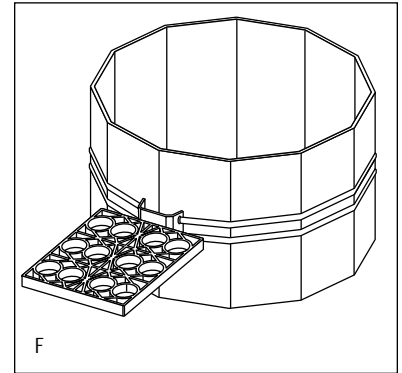
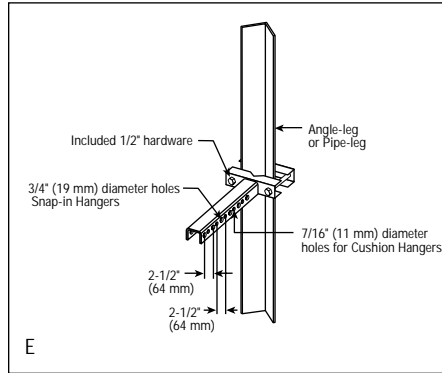
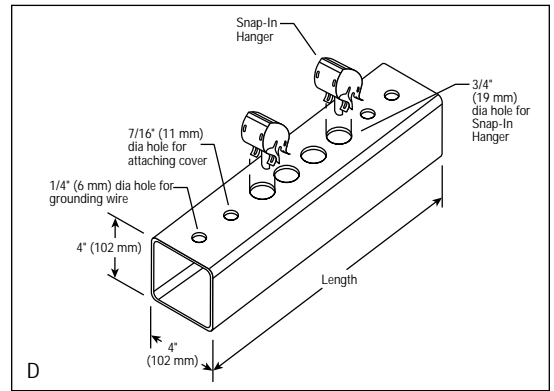
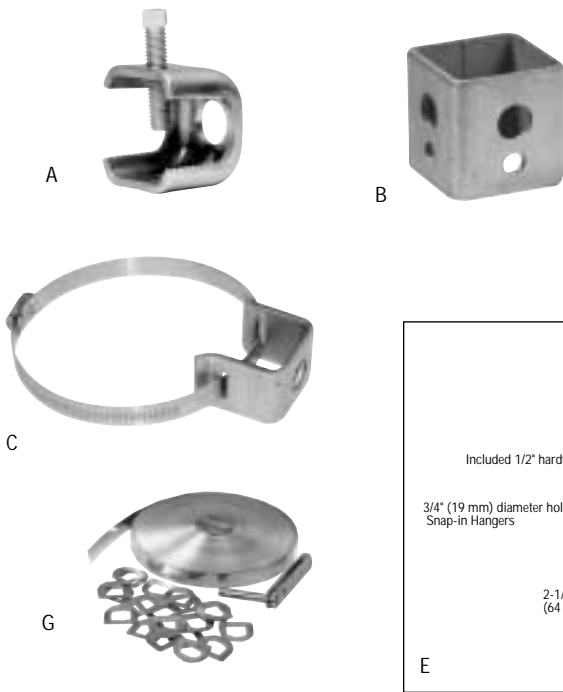


D

** Patented United States 4,813,639



Snap-In Adapters



A Snap-In Angle Adapter Kit of 10 pieces. Includes 3/4" pre-punched hole for mounting snap-in hangers to angle tower members. Stainless steel, 3/8" hardwareType **SAA**

B Snap-In Adapter Block Kit of 10 pieces. Mounts up to three snap-in hangers. Attach to tower using Type 31768A angle adapter or tower standoffs. Mechanically galvanized hardwareType **SHA3**

C Snap-In Tower Standoffs Kit of 10 pieces. Mounts snap-in hangers to round tower members and provides 2-1/2 in (64 mm) standoff. Includes 3/4" pre-punched hole. All parts stainless steel or galvanized.

| Member Diameter, in (mm) | Type |
|--------------------------|--------|
| 1-2 (25-50) | STS-12 |
| 2-3 (50-75) | STS-23 |
| 3-4 (75-100) | STS-34 |
| 4-5 (100-125) | STS-45 |

D PVC Roof Sleeper, supports rooftop coax runs. Constructed of gray, UV resistant PVC. 4 in x 4 in (102 mm x 102 mm).

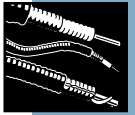
| Number of Cable Runs | Dimensions, in (mm) | Type No. |
|----------------------|---------------------|-----------|
| 4 | 22 (559) | RTA-B1598 |
| 8 | 31.9 (810) | RTA-B1599 |
| 12 | 43.4 | RTA-B1600 |

E Universal Snap-In Brackets for both angle and round tower members. Pre-punched with 3/4" holes to mount up to twelve snap-in hangers. Galvanized steel.

| Angle Member | Round Member Diameter | Type No. |
|--------------|-----------------------|-----------|
| 2-1/2" to 4" | 1-1/2" to 5-9/16" | HAA-B2249 |
| 5" to 6" | 6" to 8-5/8" | HAA-B2250 |
| 8" | 10-3/4" to 12-3/4" | HAA-B2251 |

F Snap-In Adapter Brackets for large round members, water towers, or on the outside of a monopole. Mount up to three cable runs and are compatible with both snap-in and standard hangers. Use multiple brackets for additional runs. Use in conjunction with wraplock. The brackets slide on the wraplock.
.....Type **HAA-B2391**

G Stainless Steel Wraplock 100 feet complete with fasteners. Use to attach 1/4" - 7/8" insulated hangers to round members. Not to be used to attach cable or waveguide directly to towers.....Type **12395-1**



Install Cable with One Easy "Click"

Click-on Hangers* are specifically designed to support HELIAX® coaxial cable. They are stackable, install in just minutes, and provide a perfect fit that gives your PCS/PCN, cellular, microwave, rural telephony, GSM, or other telecommunications system a professional appearance, especially in confined spaces. The hangers are made of tough, UV-resistant material and set the standard for durability, simplicity of installation, and cost-effectiveness. Only two wrenches are required for installation. Refer to table on page 598 for maximum spacing.

*Patented United States No. 5794897

Click-On Hangers Ordering Information – Kits of 10

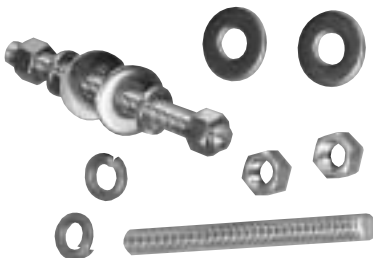
| Cable Size | Cable Type | Hanger Type Number |
|------------|------------|--------------------|
| 1/2" | LDF4-50A | L4CLICK |
| 5/8" | LDF4.5-50A | L45CLICK |
| 7/8" | LDF5-50A | L5CLICK |
| 1-1/4" | LDF6-50 | L6CLICK |
| 1-5/8" | LDF7-50A | L7CLICK |

Click-On Hanger Hardware Kits

Click-On hanger attachment hardware is available in 3/8" or M10 sizes. Constructed of stainless steel for durability. Select hardware length according to planned hanger stack height.

Hardware Kit Ordering Information

| Cable Size | Stack Height (Hangers) | Type Number M10 Kit | Type Number 3/8" Kit |
|---------------------------------|------------------------|---------------------|----------------------|
| 1/2", 5/8" or 7/8" Cable | | | |
| | 1 | 243095-11 | 243095-9 |
| | 2 | 243095-7 | 243095-5 |
| | 3 | 243095-3 | 243095-1 |
| 1-1/4" or 1-5/8" Cable | | | |
| | 1 | 243095-12 | 243095-10 |
| | 2 | 243095-8 | 243095-6 |
| | 3 | 243095-4 | 243095-2 |

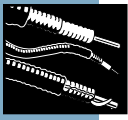


Tower and Pole Adapters

The round pole adapter attaches Click-On hangers to round member diameters 7-1/2 to 10 in (190-250 mm). Attachment hardware is sold separately. For wood poles, use lag screws. For metal poles, use Wraplock.

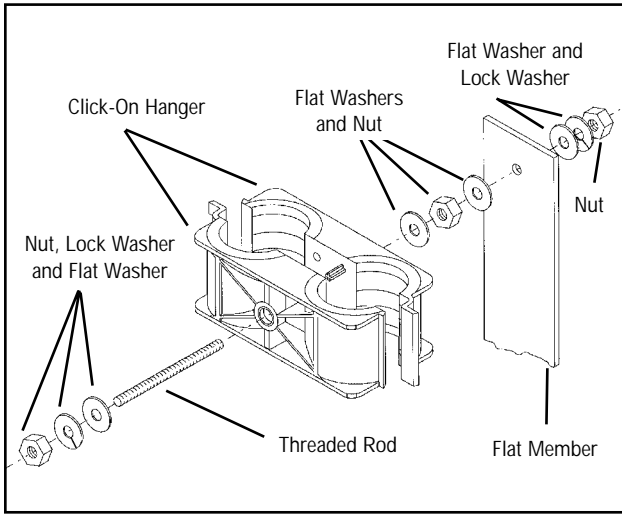
Adapter Ordering Information

| Description | Type No. |
|--|----------|
| Round Member Adapter, universal, kit of 10 | 244338 |
| Compact Angle Adapter, kit of 10 | |
| 3/8" Hardware | 243684 |
| M10 Hardware | 243684-M |
| Ceiling Adapter | 244350 |
| Stainless Steel Wraplock, 100 ft (305 m) | 12395-1 |

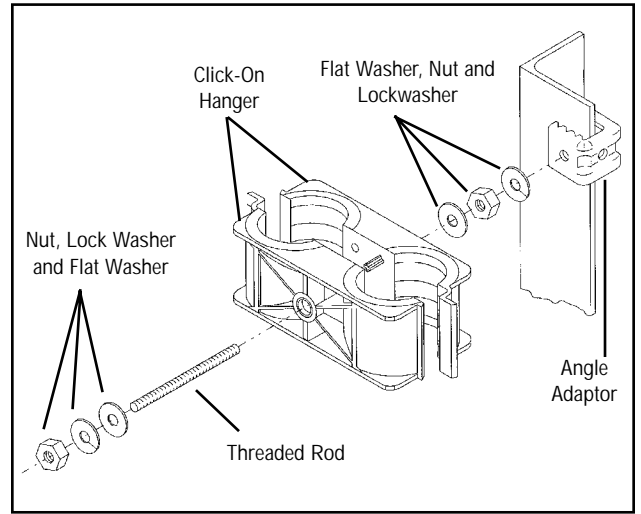


Click-On Hangers and Adapters

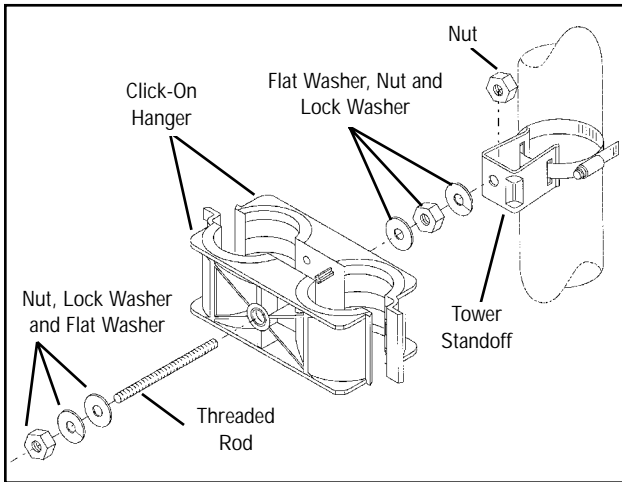
Flat Member Attachment



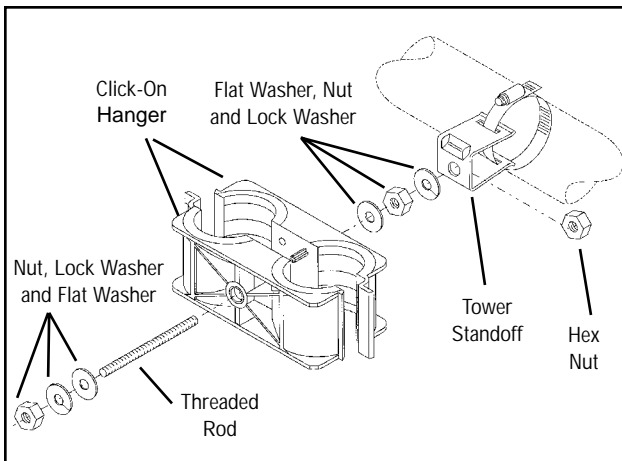
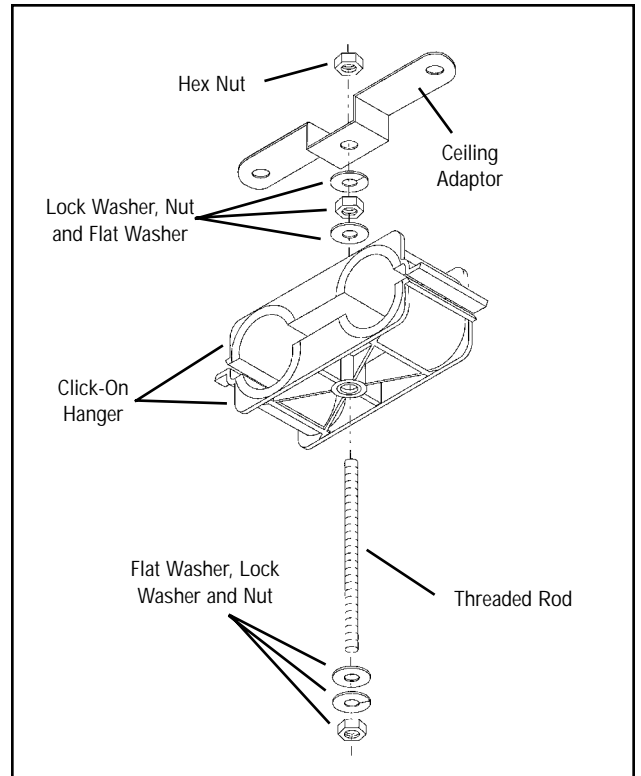
Angle Adapter Attachment

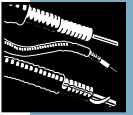


Round Adapter Attachment



Ceiling Adaptor Attachment

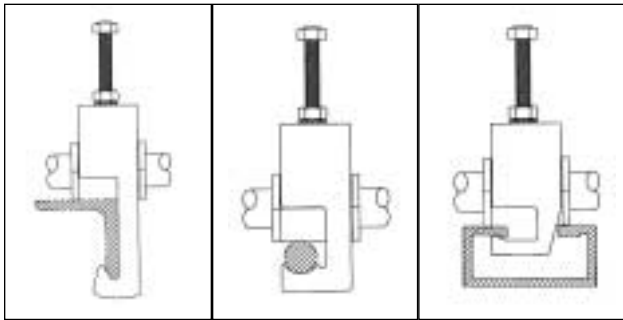
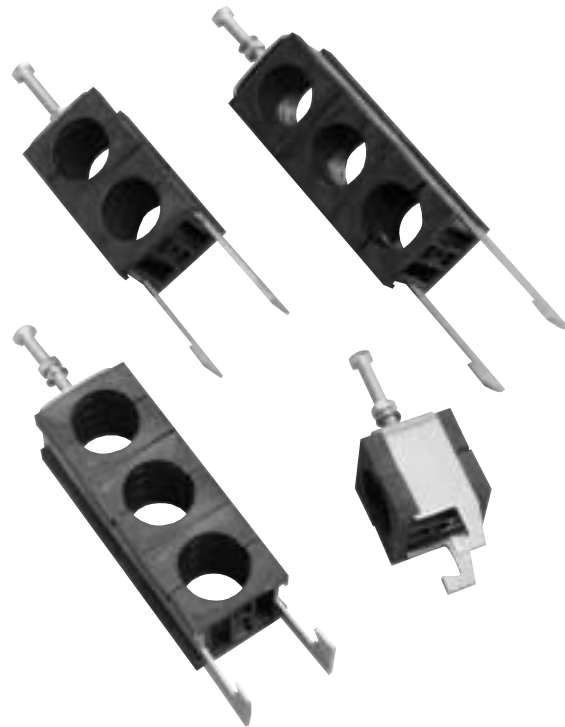




Install Multiple Cable Runs in a Limited Space.

KwikClamp hangers attach one, two or three cable runs to a tower without the need for adapters or drilling holes.

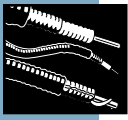
They are ideal for use on crowded towers. These self-clamping hangers attach directly to angle, round, flat, or channel tower members, providing sturdy, reliable, long-term support.



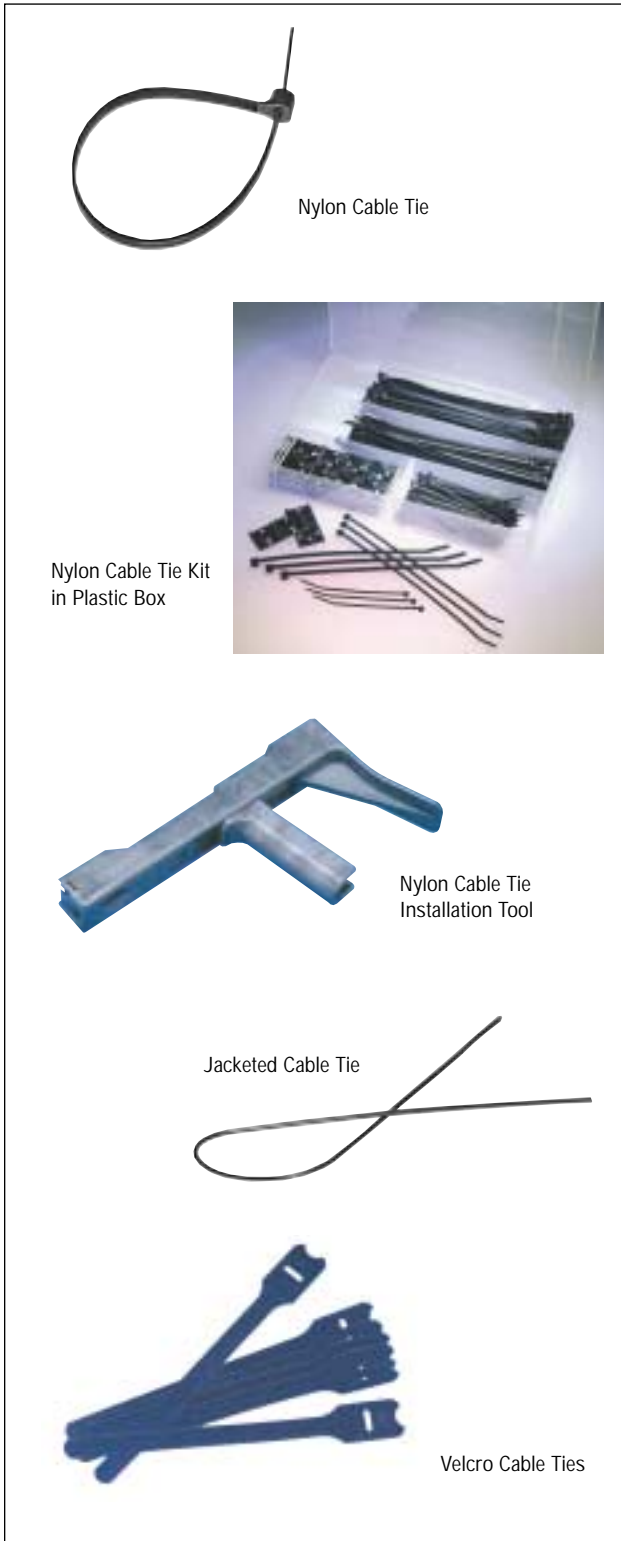
Angle KwikClamp Round/Flat KwikClamp Channel KwikClamp

KwikClamp Hanger Ordering Information

| Tower Member Type | Number of Runs | 1/2" LDF Type No. | 5/8" LDF Type No. | 7/8" LDF/VXL Type No. | 1-1/4" LDF Type No. | 1-5/8" LDF Type No. |
|--|----------------|-------------------|-------------------|-----------------------|---------------------|---------------------|
| 8-23 mm Round or 2-23 mm Flat Plate | 1 | L4CLAMP-RDN-1 | L45CLAMP-RDN-1 | L5CLAMP-RDN-1 | L6CLAMP-RDN-1 | L7CLAMP-RDN-1 |
| | 2 | L4CLAMP-RDN-2 | L45CLAMP-RDN-2 | L5CLAMP-RDN-2 | L6CLAMP-RDN-2 | L7CLAMP-RDN-2 |
| | 3 | L4CLAMP-RDN-3 | L45CLAMP-RDN-3 | L5CLAMP-RDN-3 | L6CLAMP-RDN-3 | L7CLAMP-RDN-3 |
| 40 mm Angle | 1 | L4CLAMP-ANG40-1 | L45CLAMP-ANG40-1 | L5CLAMP-ANG40-1 | L6CLAMP-ANG40-1 | L7CLAMP-ANG40-1 |
| | 2 | L4CLAMP-ANG40-2 | L45CLAMP-ANG40-2 | L5CLAMP-ANG40-2 | L6CLAMP-ANG40-2 | L7CLAMP-ANG40-2 |
| | 3 | L4CLAMP-ANG40-3 | L45CLAMP-ANG40-3 | L5CLAMP-ANG40-3 | L6CLAMP-ANG40-3 | L7CLAMP-ANG40-3 |
| 50 mm Angle | 1 | L4CLAMP-ANG50-1 | L45CLAMP-ANG50-1 | L5CLAMP-ANG50-1 | L6CLAMP-ANG50-1 | L7CLAMP-ANG50-1 |
| | 2 | L4CLAMP-ANG50-2 | L45CLAMP-ANG50-2 | L5CLAMP-ANG50-2 | L6CLAMP-ANG50-2 | L7CLAMP-ANG50-2 |
| | 3 | L4CLAMP-ANG50-3 | L45CLAMP-ANG50-3 | L5CLAMP-ANG50-3 | L6CLAMP-ANG50-3 | L7CLAMP-ANG50-3 |
| Channel Section 40 x 22 x 1.5 mm | 1 | L4CLAMP-CNL-1 | L45CLAMP-CNL-1 | L5CLAMP-CNL-1 | L6CLAMP-CNL-1 | L7CLAMP-CNL-1 |
| | 2 | L4CLAMP-CNL-2 | L45CLAMP-CNL-2 | L5CLAMP-CNL-2 | L6CLAMP-CNL-2 | L7CLAMP-CNL-2 |
| | 3 | L4CLAMP-CNL-3 | L45CLAMP-CNL-3 | L5CLAMP-CNL-3 | L6CLAMP-CNL-3 | L7CLAMP-CNL-3 |



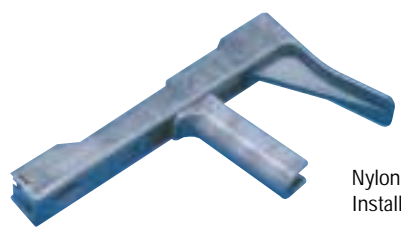
Cable Ties



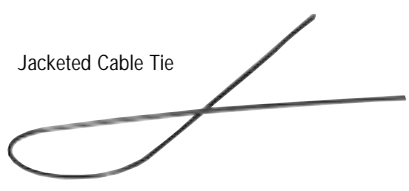
Nylon Cable Tie



Nylon Cable Tie Kit in Plastic Box



Nylon Cable Tie Installation Tool



Jacketed Cable Tie



Velcro Cable Ties

Nylon Cable Tie Kit of 50 pieces. Weather-resistant straps for attaching 1/4" to 1/2" cables. Maximum spacing 3 ft (1 m) for HJ and LDF series and 18" (457 mm) for FSJ series cables.Type **40417**

Nylon Cable Tie Kit in Plastic Box. Black, weather-resistant cable ties. Kits are packaged in a reusable plastic box and organized for quick selection.

Includes:

- Quantity 100, 4" (101 mm) cable ties, 18 lb (80 N) tensile strength
- Quantity 100, 5.5" (140 mm) cable ties, 40 lb (178 N) tensile strength
- Quantity 100, 7.5" (190 mm) cable ties, 50 lb (222 N) tensile strength
- 50 adhesive-backed black mountsType **CT-K350**

Nylon Cable Tie Installation Tool. For use with Type CT-K350, above. Tightens and trims cable tie in one process with one hand. Cuts ties flush with a simple 1/4 turn downward twist. Top loading for right or left hand usersType **CT-IT**

Jacketed Cable Tie Kit of 20 pieces. Weather-resistant ties for attaching FSJ Series cable directly to tower members. Maximum spacing 18" (457 mm)Type **27290A**

Velcro* Cable Ties. The easiest way to organize inter-rack cabling. Secure in high-vibration areas. No special tying procedure required. Can be reused to accommodate future expansion. Black, 8" (203 mm) length. Maximum bundle diameter, 2" (51 mm). Minimum bundle diameter, 0.25" (6.4 mm). Tensile strength, 40 lb (178 N). For indoor use only.

- Kit of 10.....Type **VCT8-10**
- Kit of 50Type **VCT8-50**
- Kit of 100Type **VCT8-100**

* Velcro is a registered trademark of Velcro Industries.