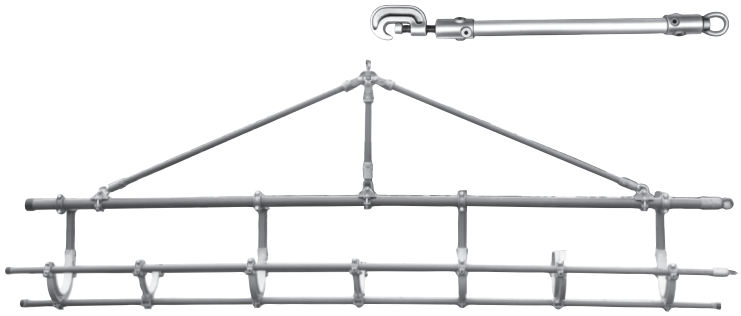


CHANCE®

Transmission Tools

Catalog 2250 March 2020

HUBBELL®

STRAIN LINK STICK

Features & Applications

- Tested per OSHA & ASTM F711
- Used as insulation between rope blocks and a hot line wire grip
- For deadend structures and running corners
- Attached to conductor close to wire tong to support conductor loads
- Supported from above by rope blocks, which are operated in unison with rope blocks attached to the wire tong
- Also used to support middle conductor on H-frame structures during insulator or crossarm changes
- Heat-treated aluminum alloy hooks and ferrules for best high-strength/lightweight ratio
- High-quality-steel butt rings for attaching rope blocks or handlines
- Butt swivel spins freely on ball-thrust bearing
- Jaw edges are rounded to prevent scarring of conductors

Catalog No.	Overall Length	Pole Dia. and Length	Jaw Opening		Max. Work Load, lb.	Approx. Wt., lb.
			Min.	Max.		
H47152	4'9"	1¼" x 4'	.22	.75	3500	3¾/1.7 kg.
C4000814	7'3"	1¼" x 6'	.22	.75	3500	5¼/2.4 kg.
C4000815	9'3"	1¼" x 8'	.22	.75	3500	6 /2.7 kg.
C4000816	11'3"	1¼" x 10'	.22	.75	3500	6¾/3.1 kg.
C4000817	13'3"	1¼" x 12'	.22	.75	3500	7½/3.4 kg.
C4000818	15'3"	1¼" x 14'	.22	.75	3500	8¼/3.7 kg.
H47161	3'3"	1½" x 2'	.44	1.06	6500	4¾/2.2 kg.
H47162	4'9"	1½" x 4'	.44	1.06	6500	5¾/2.6 kg.
H47163	6'9"	1½" x 6'	.44	1.06	6500	6¾/3.1 kg.
H47164	8'9"	1½" x 8'	.44	1.06	6500	7¾/3.6 kg.
H47165	10'9"	1½" x 10'	.44	1.06	6500	8¾/4.0 kg.
H47166	12'9"	1½" x 12'	.44	1.06	6500	9¾/4.4 kg.
H4717	5'0"	1½" x 4'	.72	1.50	6500	9⅞/4.5 kg.
H47171	7'2"	1½" x 6'	.72	1.50	6500	11⅞/5.4 kg.
H4718	5'2"	1½" x 4'	1.00	2.50	6500	11⅛/5.1 kg.
H47181	7'2"	1½" x 6'	1.00	2.50	6500	13 /5.9 kg.
H47182	9'2"	1½" x 8'	1.00	2.50	6500	15 /6.8 kg.
H47183	11'2"	1½" x 10'	1.00	2.50	6500	17 /7.7 kg.
H47184	13'2"	1½" x 12'	1.00	2.50	6500	19 /8.6 kg.

SPIRAL LINK STICK

Features & Applications

- Tested per OSHA & ASTM F711
- Replaces strain link stick when lineman cannot safely install one by hand
- A lifting eye on the head ferrule enables the lineman to guide the Spiral Link Stick to the conductor with a hotstick
- 1-1/4" Epoxiglas® pole
- Heat-treated aluminum alloy ferrule castings
- Galvanized-steel spiral hook and butt ring

Catalog No.	Overall Length	Pole Dia. and Length	Maximum Conductor Size	Max. Work Load, lb.	Approx. Wt., lb.
H4722	31"	1¼" x 15.5"	1510.5 kcmil ACSR	3500	3½/1.6 kg.
C4000812	57½"	1¼" x 42"	1510.5 kcmil ACSR	3500	4½/2.0 kg.

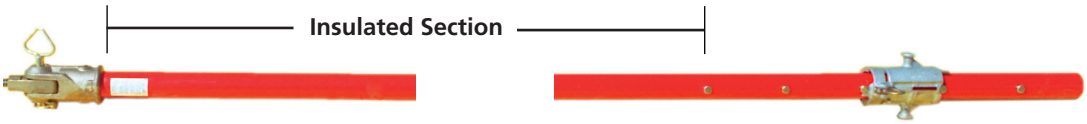
ROLLER LINK STICK

Features & Applications

- Tested per OSHA & ASTM F711
- For spreading and holding conductors at midspan when relocating poles
- Applied to conductor at pole and pulled to position by hand line on butt ring
- Handline should be secured by a temporarily installed screw anchor or other fixed object
- Also used for measuring conductor-to-ground clearance by attaching measuring tape or length of rope to butt ring
- 1-1/4" pole
- Rotating the pole closes the hook, leaving head free to roll along the conductor

Catalog No.	Overall Length	Pole Dia. and Length	Maximum Conductor Size	Max. Work Load, lb.	Approx. Wt., lb.
H47144	58"	1¼" x 4'	605 kcmil ACSR	1000	3¾/1.7 kg.
H47146	82"	1¼" x 6'	605 kcmil ACSR	1000	4¼/1.9 kg.

ADJUSTABLE STRAIN POLES



Clevis furnished with high-strength steel Through Pin E4011510 and Klik Pin P059738P. 2-in. Pole Clamp E4010138 included with each Strain Pole listed below.

12" Strain Jack E4011998 included with each Strain Pole listed below.

Features & Applications

- Tested per OSHA & ASTM F711
- For many transmission and EHV maintenance applications
- Help support conductors while insulators are removed and replaced
- Used with yoke plates and hook assemblies at the conductor
- Also used for structure ends of suspension, V-string or deadend insulator strings
- 5 stainless-steel crosspins are located at 6" intervals on the 2"-diameter Epoxiglas® poles to support hot-end trunnions or hooks
- Engaging deadend and suspension yokes at the hot end also require the adjustable, heat-treated aluminum pole clamp
- Pole clamp can be unlocked and positioned by hotsticks
- On cold end, a high-strength steel strain-jack with bronze tongue provides take-up with a ratchet wrench (see page 2257) and trunnions (page 2255)) (Wrench and trunnions must be ordered as separate items)
- Standard strain jack included with each strain pole provides 12" of adjustment
- Longer strain jacks (for 24" or 36" of take-up) and extra pole clamps also may be ordered as options below

Ordering Information

Adjustable Strain Poles

- **7,500-lb. maximum load rating (2"-diameter Epoxiglas pole)**
- **2-ft. adjustment by Pole Clamp (furnished) in 6" increments on five stainless-steel pins**
- **12"-long Strain Jack E4011998 furnished as standard**
- **Optional 24" & 36" strain jacks and extra pole clamps available below**

Catalog No.	Description	Maximum Voltage Use	Insulated Section	Overall Length	Weight
C4012144	6-ft. Strain Pole	72.5 kV	36 in. (91.44 cm)	7 ft.-8 in.	18 lb. / 8.1 kg.
C4012145	7-ft. Strain Pole	169 kV	48 in. (121.92 cm)	8 ft.-8 in.	18 3/4 lb. / 8.4 kg.
C4012146	8-ft. Strain Pole	242 kV	63 in. (160.02 cm)	9 ft.-11 in.	19 1/2 lb. / 8.8 kg.
C4012147	10-ft. Strain Pole	302 kV	84 in. (213.36 cm)	11 ft.-8 in.	20 7/8 lb. / 9.4 kg.
C4012215	12-ft. Strain Pole	362 kV	102 in. (259.8 cm)	13 ft.-2 in.	22 1/4 lb. / 10 kg.
C4012148	14-ft. Strain Pole	552 kV	135 in. (342.9 cm)	15 ft.-11 in.	23 3/4 lb. / 10.7 kg.
C4012149	18-ft. Strain Pole	765 kV	180 in. (457.2 cm)	19 ft.-8 in.	26 1/2 lb. / 11.9 kg.

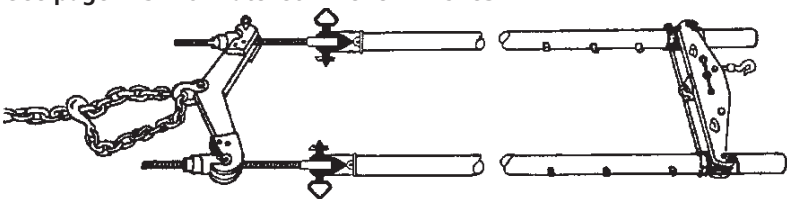
Accessories

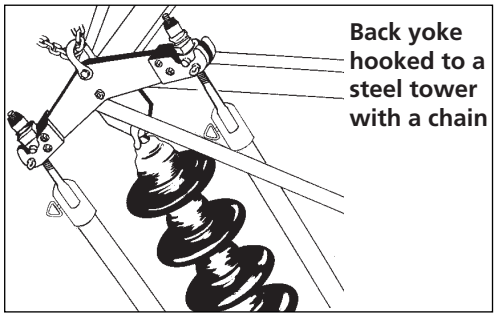
E4010138P	2" Adjustable Pole Clamp	2 lb. / 0.9 kg.
E4011998P	12"-Acme-thread Strain Jack	3 lb. / 1.4 kg.
V4010157P	24"-Acme-thread Strain Jack	4 lb. / 1.8 kg.
V4010158	36"-Acme-thread Strain Jack	6 lb. / 2.7 kg.
E4011510P	Steel Through Pin	3/8 lb. / 0.17 kg.
059738P	Klik Pin	1/16 lb. / 0.03 kg.

CHANCE®

Heavy Duty Two-Pole Strain Carriers (15,000 lb.)

See page 2257 for Ratchet Wrench M19483.

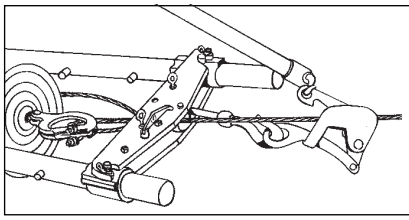




Back yoke hooked to a steel tower with a chain

Features & Applications

- Tested per OSHA & ASTM F711
- Relieve strain from an insulator string to permit removal from energized lines
- Normally used on a single string of insulators
- Also used for multiple strings where conductor-end hardware permits attachment



Front yoke hooked into a wire-grip clamp

- Available here as complete assemblies – separate components may also be ordered
- For adjustable strain poles, see page 2253
- For yokes, sockets and trunnions, see page 2255
- Yokes are fabricated from high-strength aluminum plate
- Feature a steel chain assembly for anchoring the back plate to the structure
- Conductor-end yoke includes a hook and a machined socket (C4011894)

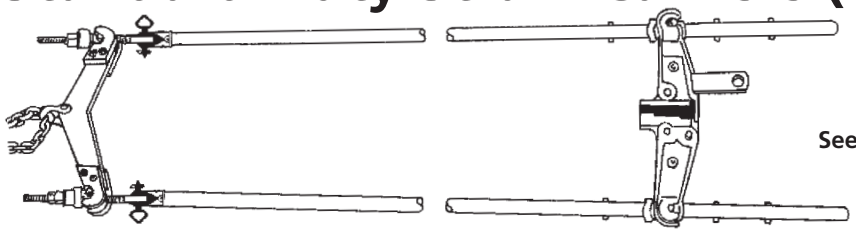
Maximum load rating for each of the strain-carrier assemblies listed below is 15,000 lb. per insulator string.

Catalog Number	Nominal Pole Length	Distance Between Yokes		Weight, each assembly
		Minimum	Maximum	
C4012174	6 ft.	49 "	81"	81 lb. / 36.45 kg.
C4012175	7 ft.	59 "	93"	83 lb. / 37.35 kg.
C4012176	8 ft.	74 "	108"	85 lb. / 38.25 kg.
C4012177	10 ft.	95 "	129"	89 lb. / 40.05 kg.
C4012216	12 ft.	113 "	147"	95 lb. / 42.27 kg.
C4012178	14 ft.	146"	180"	97 lb. / 43.65 kg.
C4012179	18ft.	191"	225"	105 lb. / 47.25 kg.

Common Features For All Units Listed

- Two 2"-dia. Epoxiglas poles
- Yokes are 26" wide on pole centers
- 2" adjustment in 6" increments on five stainless-steel pins per pole
- 12"-long Strain Jacks

Standard Duty Strain Carriers (6,500 lb.)



See page 2257 for Ratchet Wrench M19483.

Tested per OSHA & ASTM F711

Features & Applications

- Same basic use as the two-pole strain carrier
- Relieves strain while removing a single string of insulators
- Distribution strain carrier has a compression deadend yoke at the hot end
- Insulator-conductor hardware features a compression lever-type action, gripping tighter as the load increases
- Various shoes furnished with the kit fit conductors from 0.292" through 0.806" (No. 2 through 397.5 ACSR)
- Maximum load rating for each distribution strain-carrier assembly listed below is 6,500 lb. per insulator string

• Two 1¼"-diameter Epoxiglas poles • Yokes are 18" wide on pole centers
• 2-ft. adjustment in 6" increments on five stainless-steel pins per pole • 12"-long Strain Jacks

Catalog Number	Nominal Pole Length	Distance Between Yokes		Weight, each assembly
		Minimum	Maximum	
C4010411	6 ft.	47½"	81"	82 lb. / 36.9 kg.
C4010410	8 ft.	71½"	105"	92 lb. / 41.4 kg.

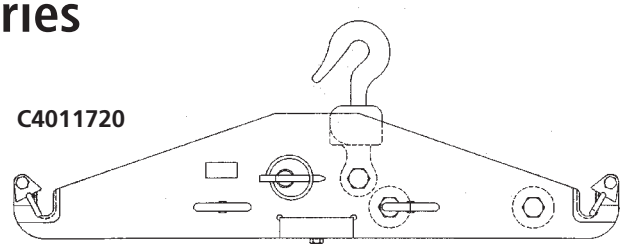
Two-Pole Strain Carrier Accessories

Two-Pole Yokes

- Can be ordered separately to make two pole strain carriers shown on Page 2254
- Yokes are fabricated of high strength (3/4"- and 1"-thick) aluminum plate
- Yokes have 26" width between center of adjustable strain poles used with them
- Maximum load ratings are 15,000 lbs. per insulator string

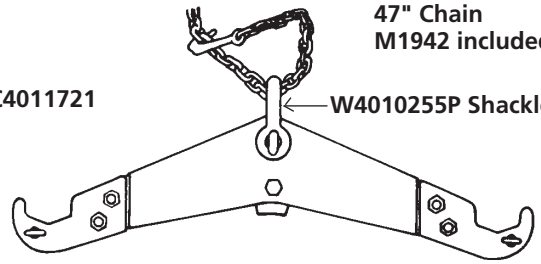
Catalog No.	Description	Weight
C4011720	Conductor End Yoke Assembly	25 lb./11.3 kg.
C4011721	Structure End Yoke Assembly	20 lb./ 9.0 kg.

C4011720



Includes hook and C4011894 Socket

C4011721



47" Chain
M1942 included

W4010255P Shackle

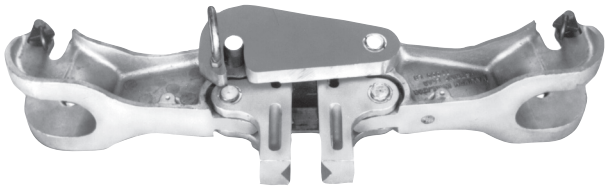
Includes steel loading chain and attachment hardware.

Deadend Compression Yoke Assembly

- Used with Two-Pole Strain Carriers, these units grip compression sleeves over the compressed area, requiring no shoulder or adapter to pull against
- Heat-treated aluminum castings
- Rated at 11,000 lbs. maximum load when used with 2" adjustable strain poles
- Designed specifically for use on extension links
- Swing up gate exposes the shoe area of the assembly to the load and must be closed before taking up tension

Catalog No.	Description	Weight
C4010095	Compression Yoke Assembly Complete with a Hot Line Extension Link for 3/4" and 1" dia. shank & 4 sets of shoes for conductor from 477to 1351 MCM ACSR	44 lb./19.8 kg.

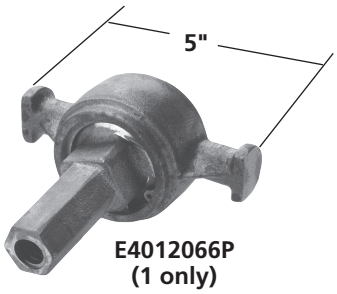
C4010095



Take-Up Trunnions

- For replacement or conversion
- Bronze-alloy and ball-thrust bearing construction for use on adjustable strain poles
- Equal the capacity of all Chance yokes and provide maximum efficiency for the lineman
- Require M19483 Ratchet

Catalog No.	Description	Weight
E4012066P	One Large Trunnion, replaces 70356	3 1/2 lb./1.6 kg.
E4012068P	One Small Trunnion, replaces E4010486	2 lb./0.9 kg.



5"

E4012066P
(1 only)

2 5/8"

E4012068P
(1 only)

Trunnion Gauge

Catalog No.	Description	Weight
T4012265	Trunnion Gauge for 3/4" Acme threads	1/2 lb./0.25 kg.

T4012265 Trunnion Gauge

Deadend Sockets

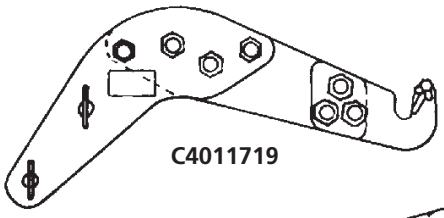
- Furnished with the Two-Pole Strain Carrier
- Use following catalog number for ordering replacement

Max. Load Rating: 15,000 lb.

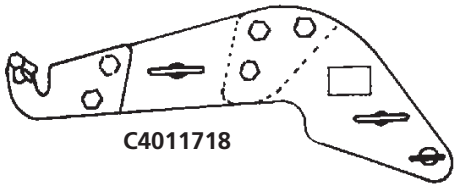
Catalog No.	Bolted Strain Clamp Max.	Conductor Range of Fittings: Maximum Copper or ACSR	Conductor Range of Fittings: Minimum Copper or ACSR	Compression Deadend Body Maximum	Approx. Weight
C4011894	For Extension Links with 7/8" Shank and 1 1/2" Collar.				

Deadend Socket

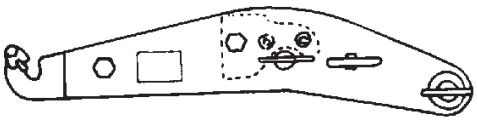
Single-Pole Strain Carrier Yokes



C4011719



C4011718

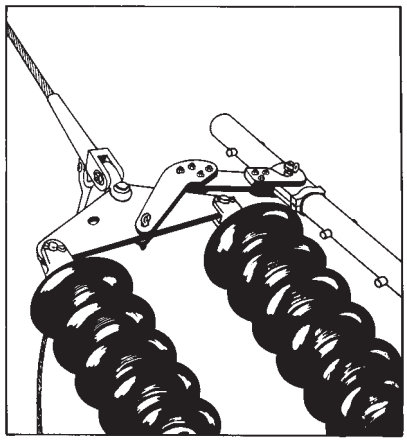


C4011717

Features & Applications

- Can be used with adjustable strain poles (see page 2253) to remove the strain from one string of multiple strings of deadend insulators
- Should be purchased in pairs to fit specific yoke plate construction
- Same yoke assemblies can be used on both the hot and cold end of the insulator string as they hook into the yoke plate hardware
- All of these yokes are rated at 15,000 lbs. maximum load per insulator string

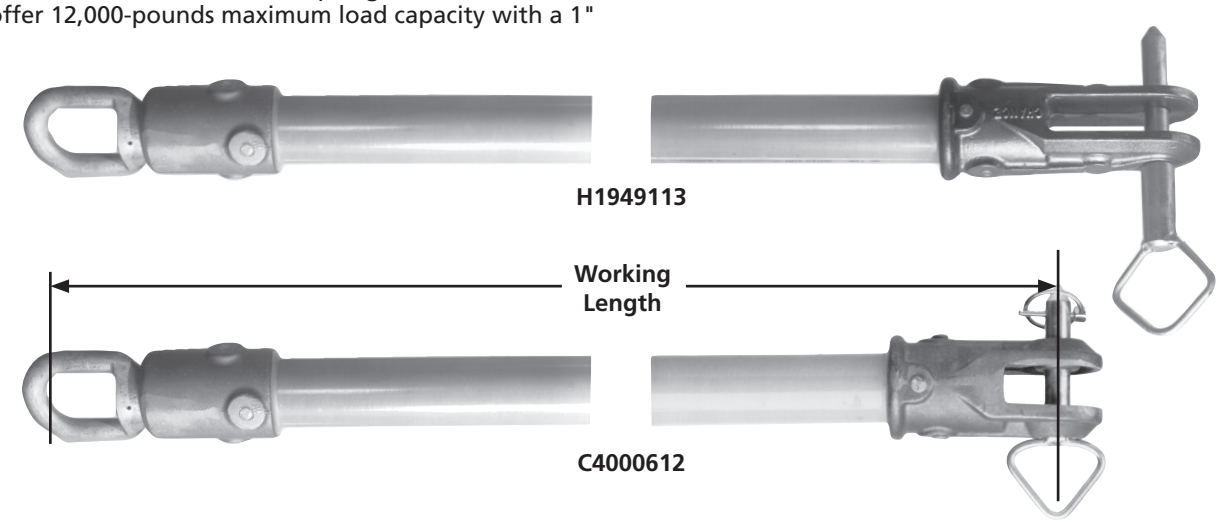
Catalog No.	Fits Yoke Plates	Weight
C4011719	Flat Plates up to 3/4" thick	25 lb./11.3 kg.
C4011718	Flat Plates up to 1" thick	25 lb./11.3 kg.
C4011717	Rectangular or Triangular plates up to 3/4" thick	25 lb./11.3 kg.



Strain Poles
For Bundle Conductor Yoke Plates

Features & Applications

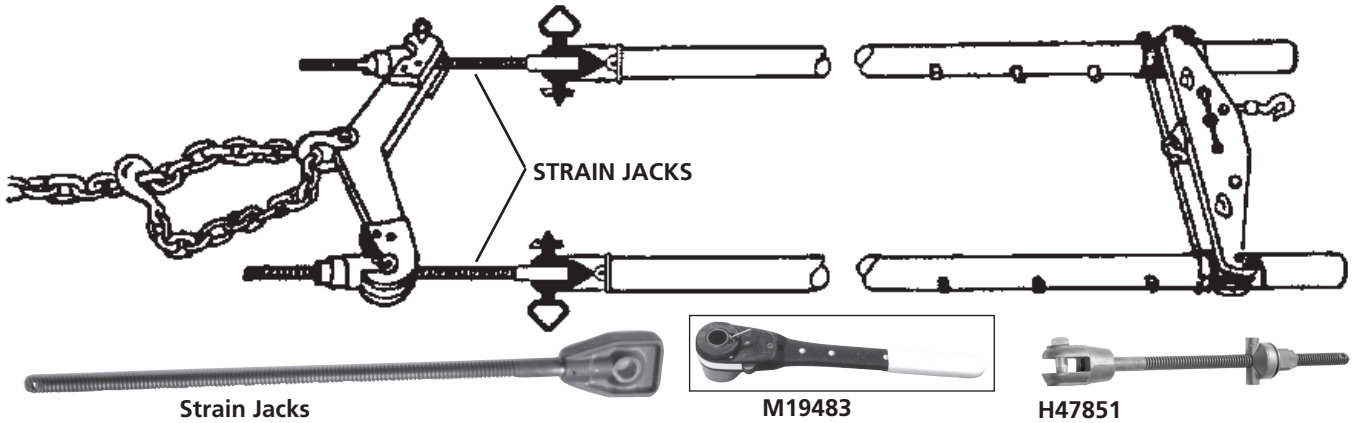
- Tested per OSHA & ASTM F711
- Accommodate a wide range of yoke plate designs and hole spacings
- Both Strain Poles, of 2"-dia. Epoxiglas® construction, offer 12,000-pounds maximum load capacity with a 1" wide clevis for aluminum conductor yoke plates
- Commonly used in deadend rigging, for "V" strings and restrained angles, poles offer two clevis lengths and overall lengths



Catalog No.	Description	Working Length*	Max. Load	Weight
H1949113	Butt Swivel, Clevis 3.35" x 1"	113"	12,000 lb.	17 lb./7.7 kg.
C4000612	Butt Swivel, Clevis 1.56" x 1"	113"	12,000 lb.	14 lb./6.3 kg.
C4000613	Butt Swivel, Clevis 1.56" x 1"	134"	12,000 lb.	15 lb./6.8 kg.
PSC4002915	Clevis, Clevis 1.56" x 1"	113"	12,000 lb.	14 lb./6.3 kg.
PSC4002916	Clevis, Clevis 1.56" x 1"	134"	12,000 lb.	15 lb./6.8 kg.

* Distance from centerline of pin to inside end of butt ring.

Strain Pole Accessories



Strain Jacks
E4011998, V4010157 & V4010158

M19483
Ratchet Wrench

H47851
Clevis, Ratchet, Screw

Catalog No.	Description	Weight
M19483	Ratchet Wrench	2.2 lb./1 kg.
E4011998P	Strain Jack (12" Long) Tongue Type	3 lb./1.4 kg.
V4010157	Strain Jack (24" Long) Tongue Type	4 lb./1.8 kg.
V4010158	Strain Jack (36" Long) Tongue Type	6 lb./2.8 kg.
H47851	Clevis Ratchet Screw 12"	5.5 lb./2.5 kg.
H47852	Strain Jack (18" Long) Clevis Type	8 lb./3.6 kg.
H47853	Strain Jack (24" Long) Clevis Type	10 lb./4.5 kg.
SPM29471	Acme Eyenut	1 lb./0.5 kg.

CHANCE®

Insulator Cradles

Tested per OSHA & ASTM F711

Features & Applications

- Tested per OSHA & ASTM F711
- Three basic types of Insulator Cradles are available for various insulator changeout requirements:
  - o Transmission Cradle is designed to be used on 69 kV to 115 kV deadend or suspension strings supported by a pair of wire tongs or link sticks
  - o EHV Trough-design Cradle is designed to be used on 345 kV to 500 kV deadend or suspension strings and in combination with insulator cradle carriers for moving the insulators (See catalog page 2259)
  - o EHV Side-Opening Cradle is designed to be used on only EHV deadend strings for removing only one string in a double, triple or quad deadend bundle (See catalog page 2260)

TRANSMISSION INSULATOR CRADLE

Features & Applications

- Used to make insulator changes by supporting the string while damaged insulators are replaced
- Also used to pivot the string so that it may be removed and lowered to the ground
- On deadends or running corners, cradles are used in conjunction with strain carriers
- In straight suspensions, they are used with various types of link sticks or adjustable strain pole assemblies
- Made with three 1-1/2" dia. Epoxiglas® poles
- Lightweight, easy to handle and adaptable to many applications
- Lugs, located at the forward end of the cradle, are used to support the insulator string with a pair of wire tongs or link sticks
- Back end of the cradle is supported by ropes tied at the structure
- Hinged in this manner, insulators may be lowered or raised to the best position for changing damaged insulators
- In some cases, cradle is supported in eyes located on the forward yoke of Two-Pole Strain Carriers
- This is performed when raising or lowering of the insulator string is unnecessary

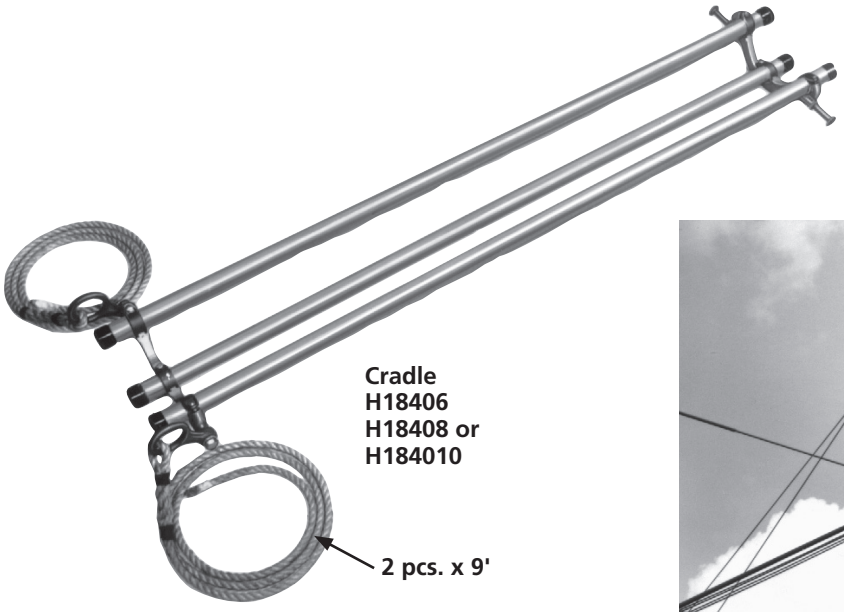


Photo at right shows the insulator cradle being raised or lowered with the use of wire tongs.

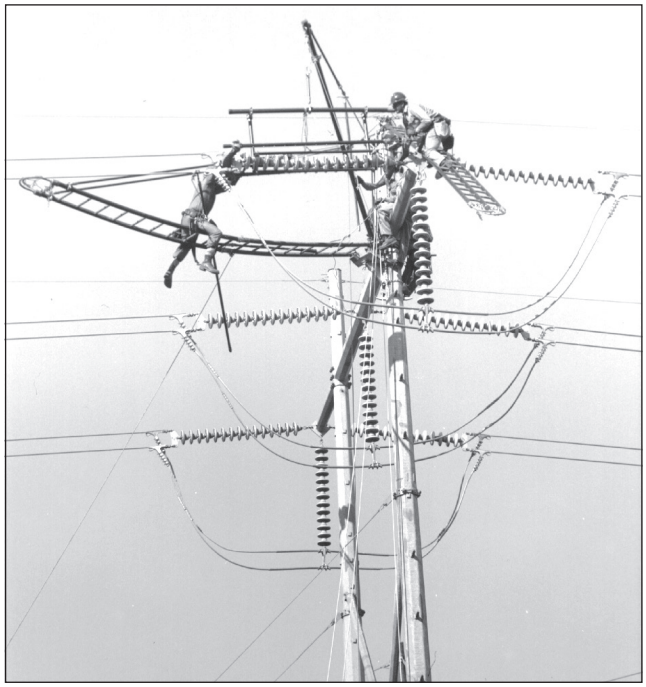
Catalog No.	Overall Length	Recommended Capacity	Approx. Weight
H18406	6-ft. (180cm)	10 10" (250mm) Insulators	19¾ lb./ 8.887 kg.
H18408	8-ft. (240cm)	14 10" (250mm) Insulators	24 lb./11.262 kg.
H184010	10-ft. (300cm)	18 10" (250mm) Insulators	27 lb./13.837 kg.

EHV Trough-Design Insulator Cradle

Bail (070184)

Hook (068922)

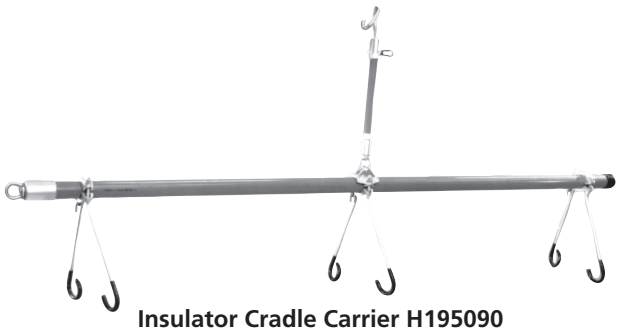
Cradle H19509 or C4010015



Features & Applications

- Tested per OSHA & ASTM F711
- For making insulator changes on lines energized up to and including 500 kV
- Also for lowering insulator strings on deadend and swinging-corner construction, and to raise the insulators on long suspension units
- Heat-treated aluminum castings, durable Epoxiglas® poles, and steel hardware Aluminum castings are lightweight for easy handling
- Deep "trough" design holds insulator string securely
- Also prevents accidental dropping of the string as the slotted insulator-retaining plate secures the top insulator of the string
- Raise or lower for easier insulator changes with a bail attached to a link stick
- Hooks are furnished for installing and removing deadend tool from insulator yokes

Catalog No.	Description	Max. 10" Insulator Capacity	Weight
H19509	9' Insulator Cradle	19	23 lb./10.45 kg.
C4010015	11'4" Insulator Cradle	25	27 lb./12.27 kg.
H195090	Insulator Cradle Carrier	—	25 lb./11kg.



Insulator Cradle Carrier H195090

Features & Applications

- Utilizes a spiral link stick as support for the three hook and clamp assemblies
- Features a 2-1/2" Epoxiglas® insulated ridgepole
- Maximum load is 500 lbs.

STATIC GROUND

Features & Applications

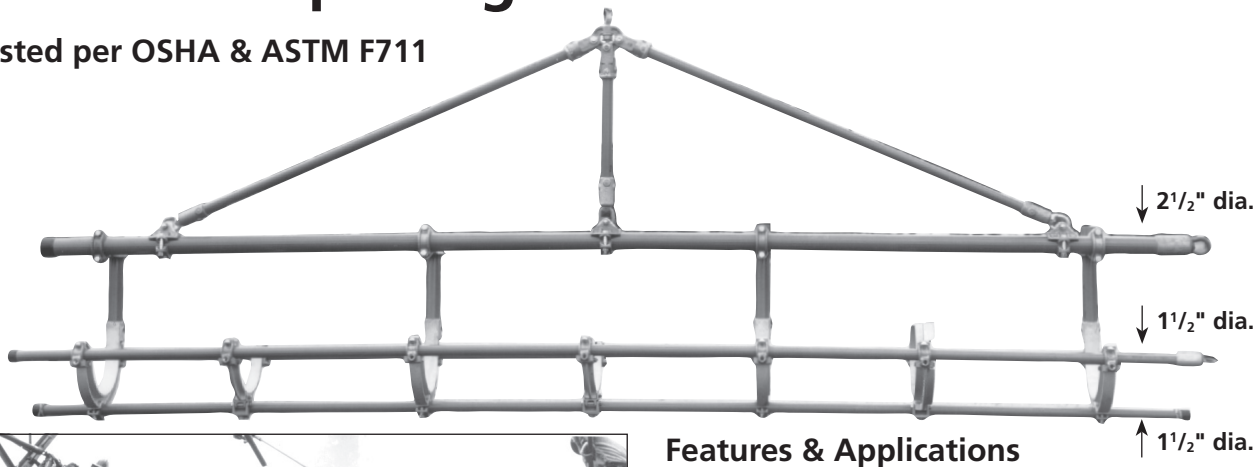
- Eliminates electrostatic charge when working insulator strings
- Drains off charge from insulator string to tower leg
- 6' of No. 2 grounding cable is attached to the Static Ground tool
- Flat face clamp at one end of the grounding cable
- Adjustable jaws fit insulator caps from 2-1/2" to 6"
- Overall length with a 1-1/4" x 19" Epoxiglas® pole, is 30"
- To ground an insulator string, attach the flat face clamp to the tower leg and the Static Ground just under the first insulator cap
- For barehand work, attach the flat face clamp to the bucket shield system and the Static Ground under the second insulator from the LIVE end

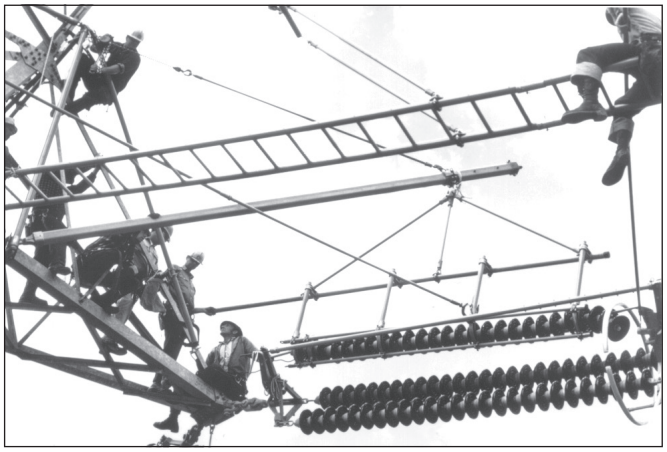
Catalog No.	Description	Approx. Wt.
HG42301	W/Eyescrew Clamp No. G33633SJ	5 lb./2.3 kg.
C6000000	W/"T" Handle Clamp No. G33634SJ	5 lb./2.3 kg.

CHANCE®

EHV Side-Opening Insulator Cradle

Tested per OSHA & ASTM F711

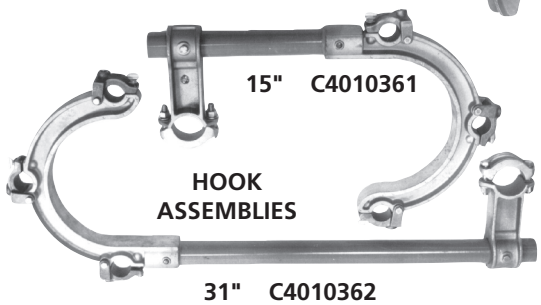




Features & Applications

- For selective removal of any one string in deadend bundles, double, triple or quad
- Eliminates the need for removing top strings in bundle access lower string
- Available in 9', 13' and 16' lengths
- Shipped complete with bridle for attaching to Swivel Boom, an Insulator Retaining Plate and either 15" or 31" Hook Assemblies
- 15" assembly for single or double deadends
- 31" Assembly for removal of bottom strings in 4-bundle deadends, and for double "V"-string assemblies
- 9' Cradle is rated 500 pounds maximum load
- 13' and 16' Cradles are rated at 1000 lbs. maximum load
- Insulator Retaining Plate is dual purpose
- One side of Insulator Retaining Plate is adaptable to 11" insulator bells and the opposite side is adaptable to 12-3/4" insulator bells

INSULATOR RETAINING PLATE C4010455



Catalog No.	Description	Weight
C4010358	9' Cradle, 15" Support Hooks	93 lb./41.9 kg.
C4010359	9' Cradle, 31" Support Hooks	97½ lb./43.9 kg.
C4010356	13' Cradle, 15" Support Hooks	119 lb./53.6 kg.
C4010357	13' Cradle, 31" Support Hooks	123½ lb./55.6 kg.
C4010354	16' Cradle, 15" Support Hooks	125 lb./56.7 kg.
C4010355	16' Cradle, 31" Support Hooks	130½ lb./58.7 kg.
C4010361	15" Support Hook, one only	10 lb./ 4.5 kg.
C4010362	31" Support Hook, one only	11½ lb./ 5.2 kg.
C4010455	Insulator Retaining Plate	7½ lb./ 3.4 kg.
C4010604	Cradle Spacer	5.88 lb. / 2.6 kg.

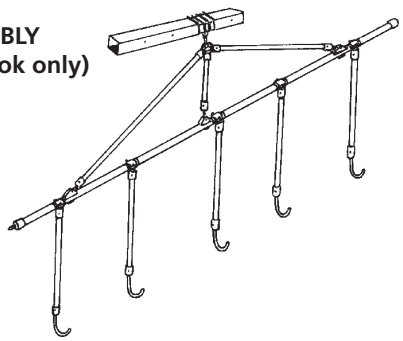
J-HOOK ASSEMBLY

Features & Applications

- For removal of deadend insulator strings
- Plastisol-covered steel hook swivels on end of a 2" x 36" Epoxiglas® pole
- Has a 2-1/2" dia. pole clamp at the top end, allowing horizontal adjustment on an Epoxiglas ridgepole to fit varying lengths of insulator strings
- Useful in removing bottom string in a 3-bundle insulator string
- Rated working load: 250 lbs. per hook

Tested per OSHA & ASTM F711

J-HOOK ASSEMBLY
C4020790 (1 hook only)

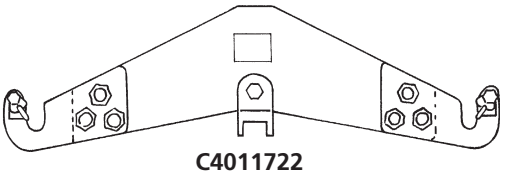


Suspension Insulator Tools

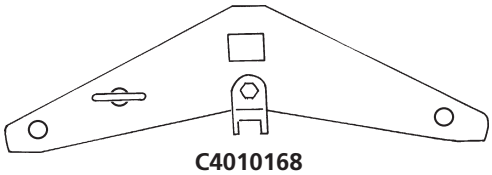
Features & Applications

- Optional tools for relieving the load on suspension insulator strings
- When same crews work on deadend and suspension structures, Adjustable Strain Poles on Page 2253 can be used as base tool for suspension insulator changeouts

SUSPENSION YOKES



C4011722

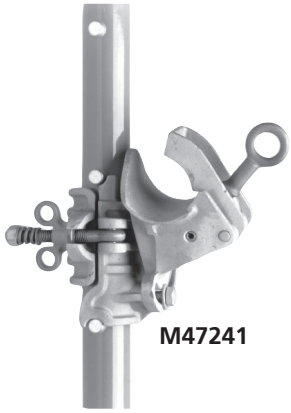


C4010168

- C4011722 yoke is used with the H2947 series adjustable strain poles on page 2253
- C4010168 yoke is used with clevis strain poles on page 2257
- Both yokes are fabricated from high strength aluminum plate
- Maximum load of 15,000 lbs. per insulator string
- Has two spring-loaded latches which engage and lock the pole clamp into position on the yoke, 26" apart center-to-center
- Provides adequate clearance for corona rings
- An eyebolt, which may be assembled on either side of the yoke, facilitates rigging
- Yoke is equipped with a swivel saddle designed to cope with the variables of suspension strings on running corners
- Saddle will rotate a full 360°
- Saddle will handle conductor yoke plates up to 1" in thickness

Catalog No.	Description	Weight
C4011722	Strain-Pole Suspension Yoke with 3½" Swivel Saddle	26 lb./11.7 kg.
C4010168	Clevis Pole Suspension Yoke with 3½" Swivel Saddle	23 lb./10.4 kg.

ADJUSTABLE HOOK ASSEMBLY



M47241

Features & Applications

- For use with adjustable strain poles shown on page 2253
- A direct method of relieving load on suspension string
- Conductor clamp has contoured seat with a trapping gripper and is operated by an eyescrew
- Conductor range is 1-1/8" to 2-1/2" dia.
- Can be positioned every 6" on the strain pole
- Hook is self-aligning within a range of 45° either side of vertical
- Maximum load is 3,500 lbs.

Catalog No.	Description	Weight
M47241	Adjustable Hook Assembly	6 lb./2.7 kg.

SUSPENSION LINK STICKS

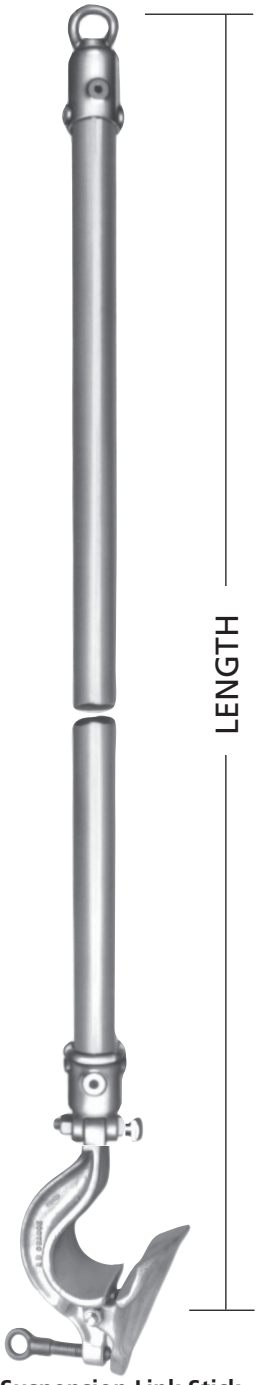
For Adjustable Strain Pole (See Page 2253) or Clevis Pole (See Page 2257)

Features & Applications

- For use on conductors from 1-1/2" to 2-1/2" dia.
- Can be used with various types of takeup devices at the structure end
- Lip of the hook, actuated by an eye screw, swivels to accommodate various conductor sizes
- Maximum load is 6,500 lbs.

Tested per OSHA & ASTM F711

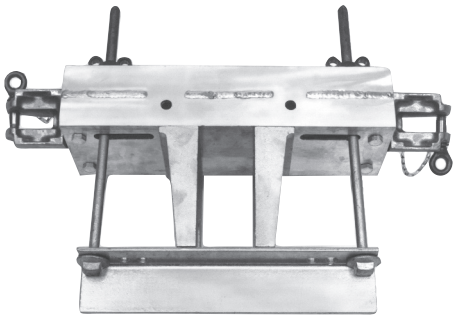
Catalog No.	Pole Dia. & Length	Weight
H472084	1½" x 84"	14 lb./6.3 kg.
H472096	1½" x 96"	16 lb./7.2 kg.
H4720114	1½" x 114"	18 lb./8.1 kg.



Suspension Link Stick

CHANCE®
STRUCTURE YOKES

NOTE: Yokes shown here use Adjustable Strain Poles and small trunnions on page 2252 through 2253.

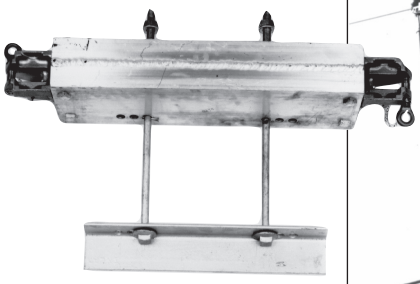


H478322

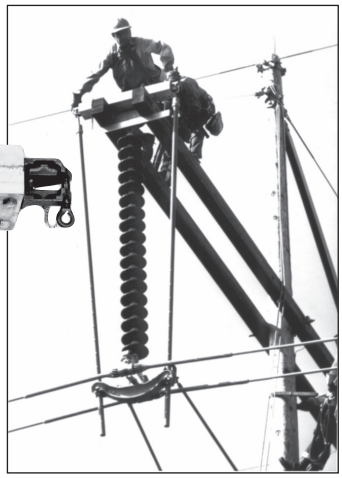
Steel Tower Yoke

- Fits over the tower arm, serving as a support for the Chance Strain Poles
- Relieve tension on suspension insulator string through the "hot end" yoke and conductor yoke plate
- Yoke legs can be adjusted to fit most tower structure configurations
- It is recommended that the design drawings of the tower arms be submitted to Hubbell Power Systems, Inc. with the Tower Yoke order for engineering evaluation
- Swivel trunnions are 26" center to center

Catalog No.	Description	Max. Load	Weight
H478322	Tower Arm Yoke	12,000 lb.	42½ lb./19.1 kg.



C4000219



Wood or H-Frame Tower Yoke

- Similar to the Steel Tower Yoke in design and application
- Two clamp bolts which secure the yoke to the double plank crossarms may be adjusted to three center-to-center positions (9", 11" and 13") to fit various arm sizes
- Vertical take-up on the crossarm is from 9" to 12"
- Swiveling trunnion brackets are located 26" center-to-center
- Longer braces are available on special orders

Catalog No.	Description	Max. Load	Weight
C4000219	H-Frame Crossarm Yoke	12,000 lb.	41 lb./18.5 kg.

C4000445

Steel Arm Yoke

- For use on the arm of a steel pole
- Mounts over a ¾"-thick end plate as shown at left
- Swivel castings in end of yoke for proper alignment of Chance Strain Poles to conductor-end yoke
- Load rating is dependent upon the angle of end plate on arm
- 45° is maximum angle allowed with a maximum load of 9,000 lbs.
- In-line loading of yoke permits a maximum load of 15,000 lbs.
- Bronze pins place the strain poles 21" apart, center-to-center
- Lifting eye is cast into the top of the yoke to assist in rigging

Catalog No.	Description	Max. Load	Weight
C4000445	Steel Arm Yoke	15,000 lb.	14¾ lb./6.6 kg.

T4000838

STEEL ARM BRACKET

The steel arm bracket is used with the C4000445 (steel arm yoke) where the steel arm is not equipped with an end plate. The bracket is made of heat treated aluminum and is complete with a wheel binder. The steel arm bracket serves the same purpose as an end plate to support the yoke assembly.

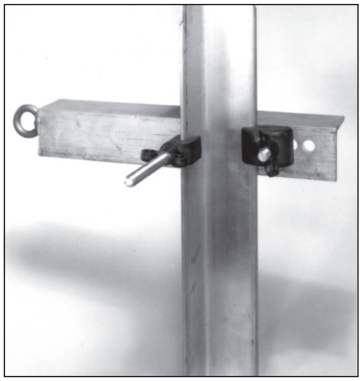
Catalog No.	Description	Max. Load	Weight
T4000838	Steel Arm Bracket	15,000 lb.	15 lb./6.8 kg.

TOWER GIN

- **All-Purpose Handline Gin**

Features & Applications

- 3' x 3" x 1/4" with an aluminum-welded end-plate securing bronze, free-swivel butt ring
- Snatch blocks hooked into butt ring keep handlines from dragging over tower structure, giving clearance to tools in transit
- Bronze mounting hooks are secured with bronze wing nuts on plated steel bolts
- Hook adjustment will fit tower angle from 1-3/4" x 1-3/4" up to 6" x 6"
- Maximum load for the gin is 500 lbs.



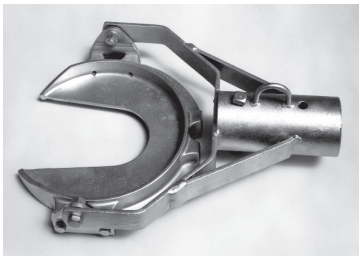
Catalog No.	Description	Length	Weight
M1979	Tower Handline Gin	21"	6¾ lb./3 kg.

TROLLEY POLE SUSPENSION INSULATOR TOOL

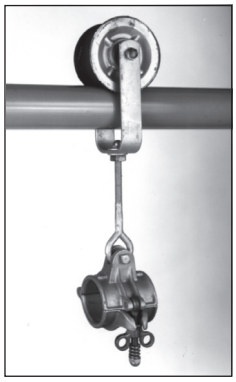
Features & Applications

- Rolls a string of suspension insulators into the structure so that damaged units can be replaced
- Can be fastened, horizontally under the tower arm, using tower type wire tong saddles
- Two types of Trolley Wheel Units are available with single (H47234) or tandem (C4000152) wheels
  - o The tandem wheel units are used on extremely long strings of insulators for better weight distribution
  - o Both trolley wheel types will roll on either a 2-1/2" or 3" Epoxiglas® pole
- Slotted Suspension Insulator Attachment bolts to end of Trolley Pole and can be fitted under the top insulator
- Entire string can be lifted by a slight down pressure on structure end of Trolley Pole
- Insulators are returned to position on Trolley Pole after necessary changeouts

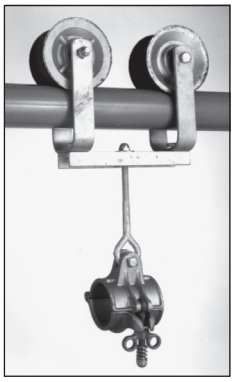
Suitable for 10½" disc insulators on one side and 10¾" disc insulators on the other



H47232



H47234



C4000152

H4721112 (Tested per OSHA & ASTM F711)

TROLLEY POLE COMPONENTS PARTS

Catalog No.	Description	Weight
H47232	Fork Suspension Tool Attachment for 2½" Pole	15½ lb./7.0 kg.
H4721112	Trolley Pole (2½" x 12')	18½ lb./8.3 kg.
H47234	Single Trolley Wheel with 2½" Pole Clamp	6 lb./2.7 kg.
C4000152	Tandem Trolley Wheel with 2½" Pole Clamp	13 lb./5.9 kg.

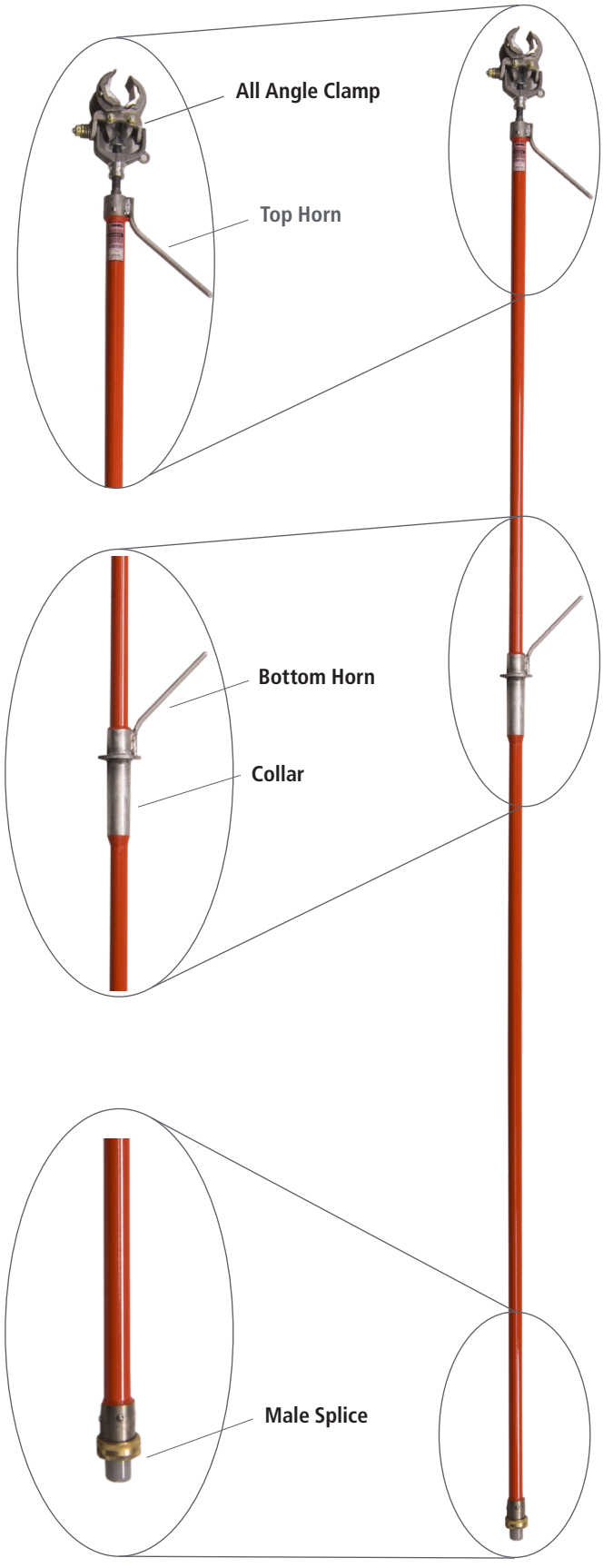
CHANCE®

CHANCE® PORTABLE PROTECTIVE AIR GAP TOOL

SOLUTION FOR MEETING NEW OSHA TRANSMISSION MINIMUM APPROACH DISTANCES

Chance® Portable Protective Air Gap Tools (PPAG) have been used for live line work for more than 40 years. PPAGs provide an OSHA and IEEE approved method for controlling transmission overvoltages, allowing for reduced minimum approach distances. The PPAG controls transmission overvoltages by providing a shorter flashover air gap between the PPAG horns.

Per OSHA Appendix B to §1910.269 an employer can reduce the minimum approach distance at the worksite by installing portable protective gaps on the system.



PPAG Features and Benefits:

- OSHA and IEEE approved method
- Simple to install
- Allows for use of shorter and lighter tools
- Visible at the worksite
- Large All-Angle Ground Clamp mounted on the top end (conductor range 0.258" - 2.88")
- Two permanent Horn Gaps fixed to the pole
- Collar on bottom horn for ground set attachment
- Rigid male splice on the bottom end for attachment of an extension pole
- 1-1/2" dia. x 12' long Epoxiglas® Pole

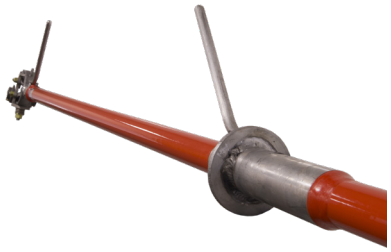
ORDERING INFORMATION

The end user must specify the gap distance based on their specific system parameters.

Refer to IEEE 516 for specifics on how to calculate the gap distance. See Section 4.8.2, Figure 3, and Annex C-1 for sample calculations

Provide your required gap distance to Hubbell Power Systems, Inc. to have a specific catalog number set up to meet your needs.

BUILD YOUR CATALOG NUMBER FOR YOUR SPECIFIC AIR GAP TOOL BELOW:

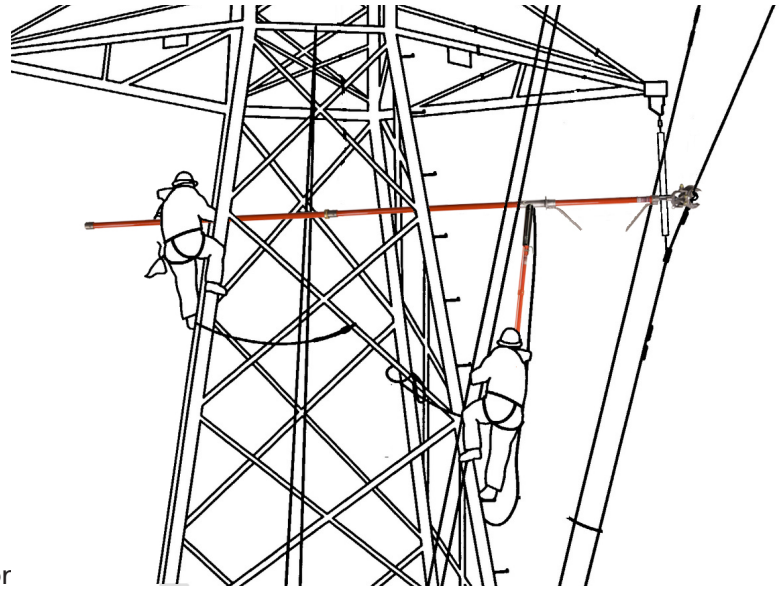
PSCPPAG	XXX	AAA	YY
	**Fixed Horn Gap Distance (inches)**	**Overall Length of Gap Tool (inches)**	**Optional Extension Pole (can also be ordered as a separate catalog number)** **00 - None** **06 - 6′ Pole** **08 - 8′ Pole** **10 - 10′ Pole** **12 - 12′ Pole**

For example:
PSCPPAG04714406 for PPAG with 47" Gap, 144" Overall Length, with Male Splice and 6′ Extension Pole.

ACCESSORIES

Extension Poles:
PSC4033760 Extension Pole 1-1/2" x 6′
PSC4033761 Extension Pole 1-1/2" x 8′
PSC4033762 Extension Pole 1-1/2" x 10′
PSC4033763 Extension Pole 1-1/2" x 12′

Ground Set:
G1Y220BCA1F10:
Single Phase Ground Set Lead:
20′ S6118 2/0 Yellow Jacket Cable
1 G422810SJ All-Angle Ground Clamp
1 C6002231 Flat-Face Ground Clamp
Shrouded Copper Ferrules with Shrink Tube
Factory Assembled
Other lengths and configurations available or request.



Typical application on adjacent structure, using an Extension Pole, a Grip-All, and Ground Lead down to lattice tower.

CHANCE®

Suspension Insulator Lifter Tool

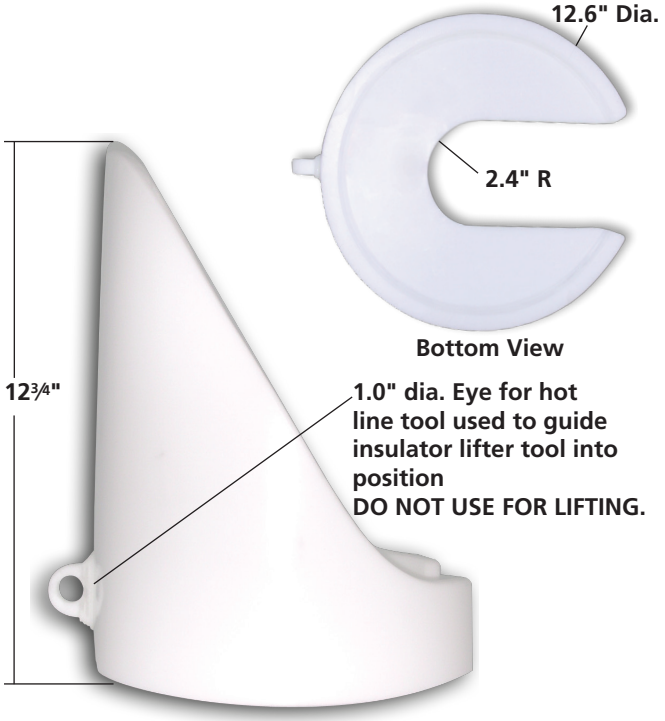
•For up to 12.5"-diameter insulators

Features & Applications

- For picking up suspension-insulator strings on electric transmission lines during live-line maintenance
- High-density polyethylene tool

TO THOSE WHO CLIMB™

*NOTE: When tying appropriate knot in load line passed through hole above, leave enough tail to encircle insulator twice and tie back onto load line. Use only a capstan hoist or winch/ hoisting equipment specifically designed for the task to raise/lower insulator strings



Ordering Information

Catalog No.	Rated Working Load	Approx. Wt.
PSC4002927	400 lb. / 181.4 kg.	13.5 lb./6.1 kg.

IMPORTANT:

1. Designed for live line work, this tool must be visually inspected and cleaned with an appropriate agent before each use

2. Do not use for construction procedures such as installing a string of insulators complete with traveler and ropes

NOTES

NOTES

NOTES

HUBBELL®
Power Systems, Inc.
• 210 N. Allen St. • Centralia, MO 65240 • (573) 682-5521

NOTICE: For the latest revision of our Catalog and Literature, click here or visit our web site: *www.hubbellpowersystems.com*

NEVER COMPROMISE™