

Hi-Line Cover-up Equipment

DESCRIPTION

Cooper Power Systems Kearney™ Hi-Line Cover-up Equipment provides maximum safety when working energized lines.

All designs when properly applied will maintain the critical insulation necessary to assure maximum protection of operating personnel against accidental contact with conductors or other energized parts. Specific features combine to provide maximum protection plus ease of handling and installation.

- Tailored to modern distribution system configurations.
- Bright Hi-line yellow has highest visibility.
- ABS Plastics provide maximum resistance to deflection.
- High resistance to tracking.
- Safety performance proved in service.
- Crew training services by qualified demonstrators available.

Design configurations of Hi-Line Cover-up Equipment are tailored to modern overhead distribution practices, including: the upward trend in circuit voltages; conversions to armless construction; bucket truck work; stand-off insulator work. Each piece of Hi-Line Cover-up equipment makes a contribution to the protective barrier required for safe line work at voltages thru 69 kV.

COVER-UP YELLOW FOR SAFETY

Bright Hi-line yellow provides visibility that alerts operating personnel to safe working distances. Safety research has proven the effectiveness of yellow as a caution signal. Yellow contrasts vividly with everything else in the working area. Yellow stands out sharply against the sky. Yellow is easily seen in the beam of a spotlight.



Figure 1. Hi-Line Cover-up Equipment.



Figure 2. Maximum-design configurations are complimented by tough rigid high-strength plastics to dramatically minimize hazards of electrical shock.

RATINGS AND TESTING

Dielectric rating of the ABS plastics used in line guards and cover-up equipment is 400 volts per mil. Inspections and tests systematically confirm the integrity of this rating.

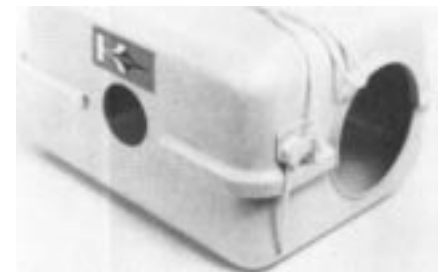


Figure 3. Cover-up technology paces modern power circuit construction practices and higher voltages.

The ABS plastics used for the production of protective equipment are highly durable. ABS plastics offer high resistance to tracking.

Surfaces of ABS plastics are cleanable. These clean surfaces are essential to the assurance of maximum insulating qualities.

DESIGNS

Each design produces maximum resistance to deflection, a characteristic that is extremely important in cases of accidental hard contact with line guards or other cover-up equipment. Greater resistance to deflection means optimum maintenance of air gap integrity.

INCREASED SAFETY

Required protection is assured by proper combinations of cover-up equipment to assure an adequate air gap for protection from the line voltage. Examples of these combinations for different voltages are shown in the application guide illustrations. Product demonstrators are available for crew training in live line techniques.

LINE GUARDS AND COUPLERS

Easy installation and removal is an outstanding feature of Cooper's Kearney guards.

In the working position, the conductor is in the center of the guard where it cannot be accidentally forced off the line.

All line guards, except No. 131100, are of spiral configuration shown at right. They are available with either fiberglass handles or clampstick eye.

For fast application of scroll type guards, lay the guard on the conductor, closed side facing you. (See A on Figure 5.) With a slight rotary motion, move the guard toward you until the conductor is at B (see Figure 5). Then push the guard up and away until the conductor is at C (see Figure 6). To remove, reverse the motion.



Figure 4. Field and design experts have engineered, tested and qualified each cover-up component as an individual item and as a functional part of an overall life-protection system.

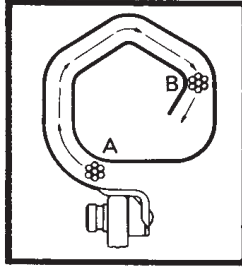


Figure 5. Path of conductor between outer and inner coils.

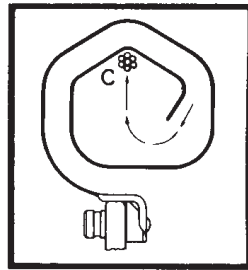


Figure 6. Working position of conductor in center of guard.

25 KV LINE GUARD

The 25 kV Line Guard is tailored for primary distribution protection in the voltage range of 25 kV and below. It is of small size, light weight, has two movable installing clips, and is easy to install with a clampstick.

Guards are designed to couple together end-to-end. The guard will couple with Insulator Cover No. 131200 to provide continuous protection. Guard will slide over armor rods where necessary.

Thickness of the ABS plastic is 1/8 inch, providing a puncture strength of approximately 50,000 volts. Install by placing slotted side on the conductor and pulling down with clampstick.

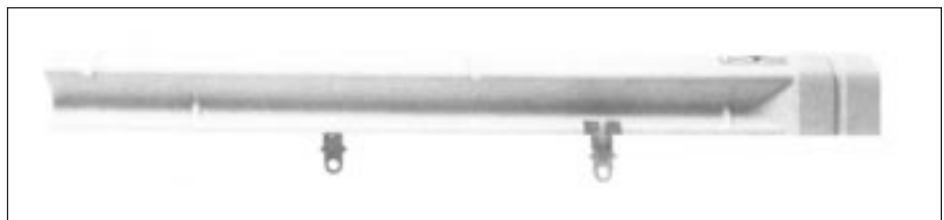


Figure 9. 25 kV Line Guard.

COUPLER TYPE LINE GUARDS FOR 15 KV AND 34.5 KV SYSTEMS

Versatile, easy-to-install Coupler Guards provide protection over both the conductor and the 15 kV insulator. Slotted ends permit coupling over 15 kV insulators on single- or



Figure 7. Crew assures safety by installing line guards and pole covers while working on 12 kV line with armless construction. Insulator covers, yet to be installed, will complete protection.



Figure 8. Line guards and pole covers increase safety as linemen install armor rods.



Figure 10.
Line guards, stand-off insulator covers and pole covers installed on angle pole with strain insulator construction assure safety while conductors are transferred to new pole at right.

double-arm construction. Couple end-to-end on the conductor.

Apply on straight line or on angles up to 15 degrees. Apply on strain dead-ends with disc insulators up to 7-inches diameter. End slots, 11 inches long, allow guards to straddle insulators, pins, and crossarms.

They are formed from ABS plastic 1/8"-inch thick. Approximate puncture strength 50,000 volts.

Coupler guards are available with interchangeable fiberglass handles or with clampstick eye. Both have slip clutches with stops every 30 degrees for quick adjustment to most convenient angle.

See illustrations on Pages 11 thru 17 for combinations of line guards, insulator covers, and couplers for use on lines of different operating voltages.

TABLE 1
Ordering Information for 25 kV Line Guard

Catalog Number	Description	Max. Cond. Size *	Guard Length	Handle	Coupler
131100	Line Guard	636 MCM with Rods	5'	Clampstick Eye	None

*Slide endwise over rods.



Figure 11.
Coupler Type Line Guards for 15kV and 34.5 kV systems.

TABLE 2
Ordering Information for Coupler Type Line Guards

Catalog Number	Description	Max. Cond. Size	Guard Length	Handle
13648-32	Coupler Guard	795 MCM with Rods	4'6"	4' Fiberglass
13648-38	Coupler Guard	795 MCM with Rods	4'6"	6' Fiberglass
13648-50	Coupler Guard	795 MCM with Rods	4'6"	Clampstick Eye

*Slide endwise over rods.

LINE GUARD FOR 46 KV SYSTEMS

The scroll type guard places two 1/8-inch thickness' of ABS plastic, plus air space between the conductor and the line operator. The full length scroll does not have end slots. Two guards are joined by snapping a shepherd hook Coupler No. 20608 or 20608-1 over the locking shoulders. At crossarms with pin insulators, an insulator cover is used to join two guards and fit over the insulator.

Adjustable and interchangeable fiberglass handles and clampstick eyes are attached to the lip of the reinforcing strip by a slip clutch with a positive click stop every 30 degrees. A light pull on the handle or eye will change the angle.

Shepherd hook Couplers are made of the same plastic as the guards.

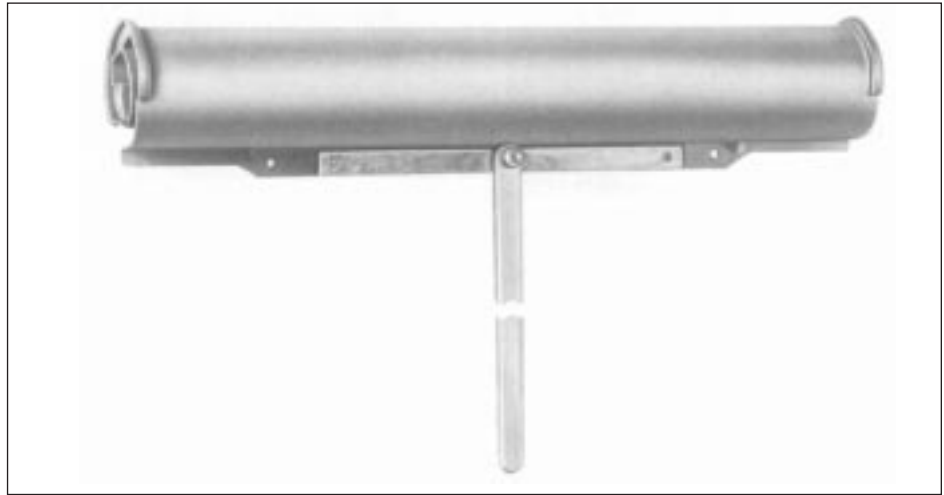


Figure 13.
25 kV Line Guard.

TABLE 3
Ordering Information for Coupler Type Line Guards

Catalog Number	Description	Nominal kV Rating Ph. to Ph.	Max. Cond. Size	Guard Length	Handle	Coupler
13648-5	Line Guard	46	636 MCM with Rods	4'	4'Fiberglass	20608 or 20608-1
13648-8	Line Guard	46	636 MCM with Rods	4'	Clampstick Eye	

*Slide endwise over rods.



Figure 12.
Shepherd hook couplers.

LINE GUARDS FOR 69 KV SYSTEMS

Guards rated for protection at 69 kV are of the scroll type. They place two thicknesses of 1/8-inch plastic plus air space between the conductor and the line operator. Air space in the scroll is increased over that provided with the 46 kV guard. The full-length scrolls do not have end slots.

To cover conductor only, fasten two or more units with Coupler No. 131024 or 131024-1.

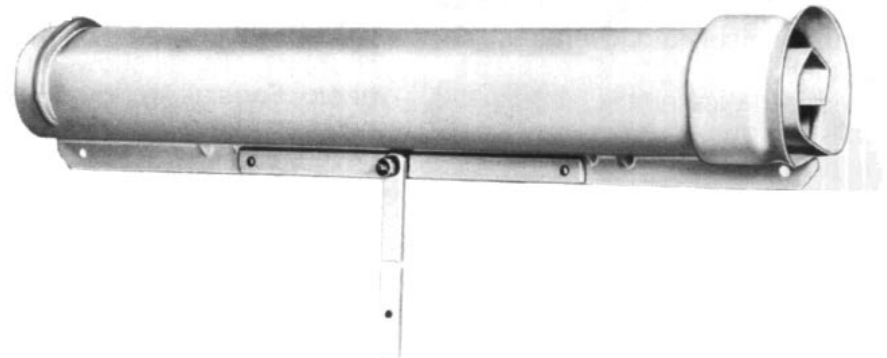


Figure 14.
Line Guards for 69 kV systems.

At crossarms, use a guard on each side, cover insulator or insulators with Double Insulator Cover No. 30568 or 30568-1 and couple cover to ends of guards.

With Tandem Cover No. 48125 use two guards and one or two covers. Couple cover to ends of guards.

Guards and couplers are made of yellow ABS plastic.

Optional fittings are a 6-foot fiber-glass handle (on the guard) or a No. 134068-1 Clampstick Adapter (on the Coupler). Both have slip clutches with stops every 30 degrees for quick adjustment for easy handling.

See illustrations on Pages 11 thru 17 for combinations of line guards, insulator covers, and couplers for use on lines of different operating voltages.



Figure 15. Coupler with clampstick adapter.

COUPLERS

TABLE 5
Ordering Information for Couplers

Catalog Number	Description	Handle
131024 131024-1	Coupler Coupler	6' Fiberglass Clampstick Adapter

TABLE 4
Ordering Information for Line Guards for 69 kV Systems

Catalog Number	Description	Max. Cond. Size	Length	Guard Handle	Coupler
131025	Line Guard	795 MCM with Rods	4'6"	6' Fiberglass	131024 or 131024-1
131025-1	Line Guard	795 MCM with Rods	4'6"	Clampstick Adapter	

*Slide endwise over rods.



Figure 16. Line guards and insulator covers are installed to assure safety during work on pole with stand-off insulators at point where there is a small angle in the line.

INSULATOR COVERS

Insulator covers provide protection from conductors and energized parts at the crossarm. They bridge the gap between line guards for continuous protection. Made of tough, hard, easy-to clean ABS plastic.

Tie stick installation of Insulator Covers is the faster, safer way. Using a tie stick, the line operator positions a cover on line guards. Then, using the eye, each rope is pulled tight and cinched in the snubbing clip, as shown in the photo. For stability, the ropes run between diagonal corners of covers and cross under the arm.



Figure 17. Line guards shield against contact with conductor while armor rods are installed.

Insulator cover handle clips are cemented on, eliminating holes in the plastic.

All insulator covers can be used to isolate equipment such as disconnects cutouts, arresters, and leads.

25 KV SINGLE INSULATOR COVERS

This cover is designed for use on lines up to 25 kV phase-to-phase. It couples with 25 kV Line Guard No. 131100.

Cover is small, light weight, and easy to install with tie sticks. Fit it over the small insulators used on lines up to 25 kV phase-to-phase.



Figure 18.
25 kV single insulator covers.

SINGLE INSULATOR COVERS FOR 46 KV SYSTEMS



Figure 19.
46 kV single insulator covers.

Covers are designed for use with 46 kV guards on single-arm construction. Slots are cut to fit closely over Line Guards No. 13648-5 or 13648-8. Shoulders of line guard lock inside

TABLE 6
Single Insulator Covers for 25 kV and 46 kV Systems

Catalog Number	Description	System Voltage	Dimensions	Slots
131200	Single-Insulator Cover	25 kV	15 1/2" long 12 1/2" wide 9" high	Ends Only
13623-1	Single-Insulator Cover	46 kV	14 1/8" long 16 1/8" wide 11 1/8" high	Ends Only

cover, preventing separation. Bottom lip provides extra rigidity and minimizes chipping at edges.

DOUBLE INSULATOR COVERS

Two styles meet a wide range of protective requirements. They are rated up to 69 kV when used with appropriate line guards and large enough to cover two high voltage insulators.



Figure 20.
Double insulator covers.

Covers with end slots only fit over both insulators on double crossarm construction. They interlock with Coupler Line Guard No. 13648-32, 13648-38, or 13648-50, 46 kV Line Guard No. 13648-5, or 13648-8, or 69 kV Line Guard No. 131025, or 131025-1. The line may be straight or angled up to 15 degrees. This style cover is also used over strain insulator deadends without jumpers.

Covers with both end slots and side slots are effective for covering strain insulator deadends with a side jumper. The line conductor may be covered by coupling a Coupler Guard No. 13648-32, 13643-38, or 13643-50, a 46-kV Guard No. 13648-5, or 13648-8, or a 69-kV Guard No. 131025, or 131025-1, with the insulator cover.

See illustrations on Pages 11 thru 17 for combinations of line guards, insulator covers, and couplers for use on lines of different operating voltages through 69 kV.



Figure 21.
Double insulator covers.



Figure 22.
With wires held off with hot sticks and line guards in place, pole cover is installed to prevent energized wire from making contact with pole.

STAND-OFF INSULATOR COVER

Stand-off insulator covers protect line operator from contact with energized fittings on standoff insulators on lines up to 69 kV.

Plastic hinged construction provides for easy installation with clampsticks. Two halves overlap on sides and front. Eight-inch wide safety barrier inside hinged section increases leakage distance for complete protection.

TABLE 7
Double Insulator Covers for 69 kV Systems

Catalog Number	Description	Dimensions	Slots
30568	Double-Insulator Cover	22 3/4" long 14 1/4" wide 11 3/8" high	Ends Only
30568-1	Double-Insulator Cover	22 3/4" long 14 1/4" wide 11 3/8" high	Ends and Sides



Figure 23.
Coupler type line guards assure safety against contact with energized wires as crew installs stand-off insulator covers to complete protection on armless construction.



Figure 24.
Stand-off insulator cover.

TABLE 8
Stand-off Insulator Cover

Catalog Number	Description	Application	Slots
131037	Stand-Off Insulator Cover	Insulators Thru 34.5 kV	Both Ends. 3-1/2" Dia. One Side For Insulators
131037-1	Stand-Off Insulator Cover	Insulators Thru 69 kV	Both Ends. 4-7/8" Dia. One Side For Insulators

TANDEM COVERS

Tandem covers are engineered for application on lines through 69 kV. On single arm construction utilize one-half of the tandem unit designed for separate applications. For double arm construction use both covers locked in tandem. Covers fit over insulators on 20 1/2-inch centers.

Polypropylene ropes are handled and secured in snubbing clips with a tie stick. When two covers are coupled, the ropes are crossed from one unit to the other to tie them together. Handle clips are cemented on, eliminating holes in the insulating material.

CROSSARM GUARD

These guards prevent contact of tie wires with crossarms when tying and untying conductors.

Arm guards are made of 1/8 inch thick bright yellow ABS plastic which has high dielectric strength. A slotted hump fits closely under insulator. Uprturned lip on opposite end keeps tie wire from sliding off the guard. For use on voltages through 13.8 kV phase-to-ground.

Crown guards are available with 4-foot fiberglass handle for easy installation. Available with eye for handling with clampstick.



Figure 25.
Tandem cover.

TABLE 9
Tandem Cover

Catalog Number	Description	Overall Dimensions	Slots
48125	Tandem Insulator Cover	50" long 22" wide 15" high	Ends only
48123	One-half of Tandem Cover for separate application	(Made up of 1 each 48123 Cover 25" long and 48125-1 Cover 29 1/2" long)	

TABLE 10
Crossarm Guard

Catalog Number	Description	Max. Size. Crossarm	Guard Length	Handle	Side Slots
13648-16	Crossarm Guard	31/4" by 41/4"	24"	4' Fiberglass	No
13648-18	Crossarm Guard	31/4" by 41/4"	24"	Clampstick Eye	No
13648-40	Crossarm Guard	5" by 6"	24"	4' Fiberglass	No
13648-43	Crossarm Guard	5" by 6"	24"	Clampstick Eye	No
13648-48	Crossarm Guard	31/4" by 41/4"	24"	4' Fiberglass	Yes

CROSSARM-END GUARDS

Crossarm-end guards prevent tie wires from touching the crossarm when tying and untying on the end insulators. Cover over end of guard protects linemen working from aerial buckets.

Additional protection is obtained by pulling a crossarm guard over the open end of the end guard and adjusting the overlap as required.

Guards are furnished with a boss on each side (see Figure 26) which may be cut out by user, or with factory cut slots to accept double arming bolts. Slot in top accepts insulator pin.

Both styles available with 4-foot long yellow fiberglass handle, or with a permanently attached, fixed eye for handling with clampstick.

Crossarm end guards are used on voltages up through 13.8 kV phase-to-ground.



Figure 26.
Crossarm-end guard.

POLE COVERS

These covers protect the new pole from energized conductors when replacing poles. They also prevent line operator from making contact with ground leads, protruding hardware, or with the pole when working from a platform or an aerial bucket. Over-lapping the sides gives all-around protection.

Pole covers are hot formed to assure a tight grip on the pole. Dielectric strength is approximately 50,000 volts.



Figure 27.
Crossarm guard.

TABLE 11
Crossarm-End Guard

Catalog Number	Description	Type	Max. Size. Crossarm	Guard Length	Handle
131020	Crossarm End Guard	Solid Sides	31/4" by 41/4"	12"	4' Fiberglass
131020-2	Crossarm End Guard	Slotted Sides	31/4" by 41/4"	12"	4' Fiberglass
131020-1	Crossarm End Guard	Solid Sides	31/4" by 41/4"	12"	Clampstick Eye
131020-3	Crossarm End Guard	Slotted Sides	31/4" by 41/4"	12"	Clampstick Eye

DIMPLED POLE COVERS

Dimples on the inside of these covers establish an air gap between the plastic of the cover and the pole. This provides an added safety factor and reduces the contamination surface.

These covers are available in two sizes for pole diameters up to 9 inches and up to 12 inches.

They are furnished in 3-foot, 4-foot, and 6-foot lengths.

Covers are installed by grasping polypropylene rope handles and spreading cover until it passes over pole, and then letting it snap closed. They stay in place without being tied or supported.

TABLE 12
Dimpled Pole Covers

Catalog Number	Description	Max. Pole Diameter Inches	Length Feet
131043-3	Pole Cover	9	3
131043-4	Pole Cover	9	4
131043-6	Pole Cover	9	6
131044-3	Pole Cover	12	3
131044-4	Pole Cover	12	4
131044-6	Pole Cover	12	6



Figure 28.
Dimpled pole covers.

TABLE 14
Smooth Pole Covers

Catalog Number	Description	Max. Pole Diameter Inches	Length Feet
131018	Pole Cover	9	1
131018-1	Pole Cover	9	2
131018-6	Pole Cover	11	1
131018-7	Pole Cover	11	2



Figure 29.
Pole-top covers.

SMOOTH POLE COVERS

Covers are applied by grasping the polypropylene rope handles, opening the cover until it passes over the pole, and then letting it snap closed. Design fits snugly to pole and stays in place without being tied or supported. Rope clips are cemented on.

Covers are available in two sizes to fit poles up to 9 inches in diameter and up to 11 inches in diameter.

Pole-top covers provide greater safety for line operator working on the pole or out of aerial buckets by preventing tie wires from contacting the pole when tying or untying on ridge pin construction.

POLE-TOP COVERS

Pole-top covers feature a cap which has been added for protection of the pole top. This cover is installed by spreading the cover using the rope handles and letting the cover snap closed around the pole. Offset section provides clearance for bolts which secure the ridge pin. They fit pole tops up to 9 inches in diameter and cover the top 11 inches of pole. They can be used on voltages up to 13.8 kV.

TABLE 13
Pole-Top Covers

Catalog Number	Description	Max. Pole Diameter	Cover Length
131363	Pole-top Cover	9"	11"



Figure 31.
Pole top cover adds safety when insulator ties are removed or new wire is being installed. Line guards were installed on each side of work area.



Figure 30.
Pole cover prevents accidental contact of energized wire with pole while men install line guards to protect them from conductors.



Figure 32.
Crossarm guard prevents arm contact when insulator tie is removed from outside conductor. Line guards protect operator from contact with wire.

STORING AND CLEANING COVER-UP EQUIPMENT

Protective Bags

Cover-up Equipment, such as line guards, insulator covers, and pole and crossarm covers, stay clean and dry in waterproof canvas bags. The bags also protect the equipment from mechanical damage. They are expertly tailored of strong, durable, heavy duty, No. 10 field tan canvas, treated to be mildew resistant. They are made to order for Cooper's Kearney tools and are closed with draw cordage, threaded through plated steel eyelets.

Bag No. 134021-3 is designed to hold four 4-ft pole covers or two line guards.

Bag No. 134021-4 is designed to hold three single or double insulator covers in a nested position.

Bag No. 134919 is designed to hold one tandem insulator cover.

Clean Guards Maintain Full Safety Dimensions

Hi-line cover-up equipment will maintain highest performance and last longer if well cared for. Keeping guards and covers clean is an important part of caring for them.

To clean cover-up equipment use regular Cooper Kearney Cleaner 131600 or any detergent that does not contain ammonia or abrasives. Avoid the use of solvents such as those containing ketones and esters.

LIFE PROTECTION COVER-UP SYSTEMS

The following illustrations provide safety and line personnel with an authoritative guide to proper assembly of safe cover-up systems.

All combinations shown have been developed for maximum protection at identified voltages. Each has been thoroughly tested and certified for rated duty.

Ratings shown for each system combination represents the maximum duty voltage. Each system can be used for protection on any voltage up to-and including-identified rating.

Note: All protective values begin 6 inches in from ends. Dimensions define length of actual protective barriers. Catalog numbers clarify equipment required.

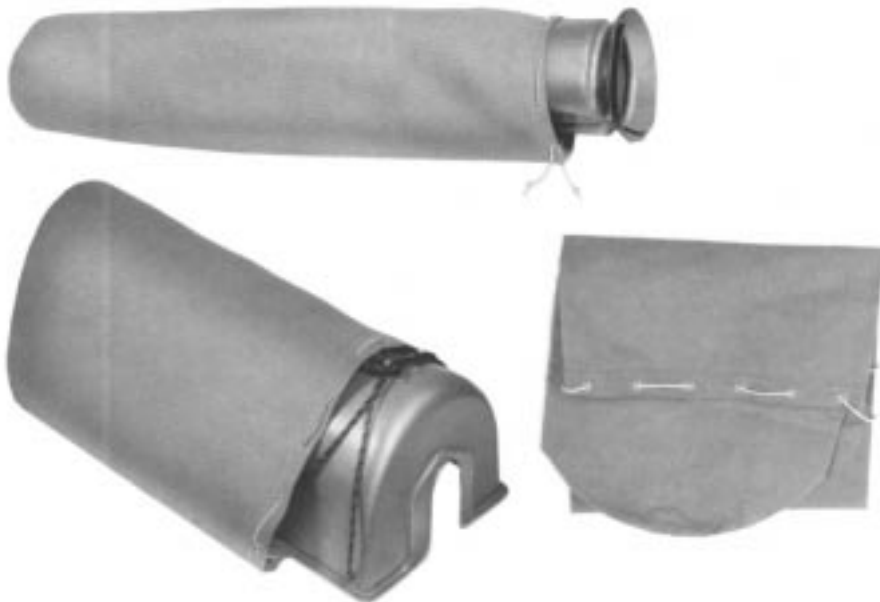


Figure 33.
Protective bags.

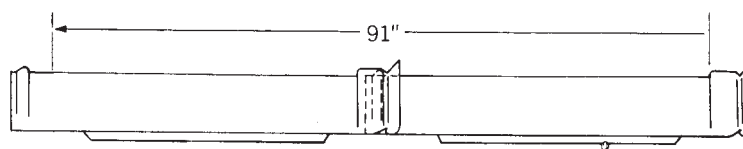


Figure 34.
15 kV—Two 13648-32 Coupler Type Line Guards.

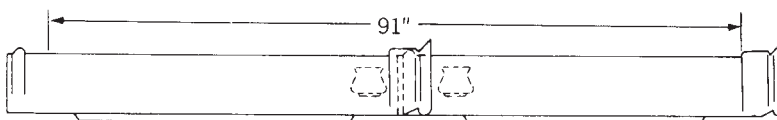


Figure 35.
15 kV—Two 13648-32 Coupler Type Line Guards.

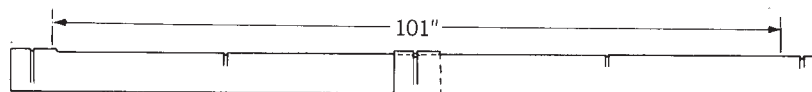


Figure 36.
25 kV—Two 131100 Line Guards coupled together.

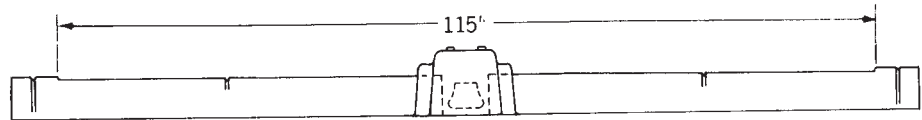


Figure 37.
25 kV—Two 131100 Line Guards. One 131200 Single Insulator Cover.

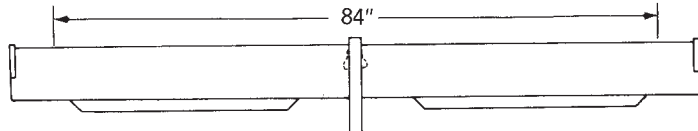


Figure 38.
34.5 kV—Two 13648-5 Line Guards. One 20608 Shepherd Hook Coupler.

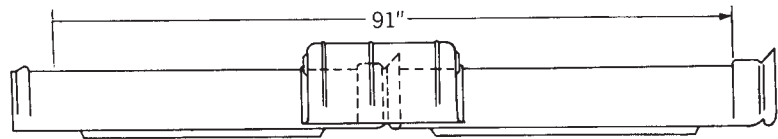


Figure 39.
34.5 kV—Two 13648-32 Coupler Type Line Guards. One 30568 Double Insulator Cover.

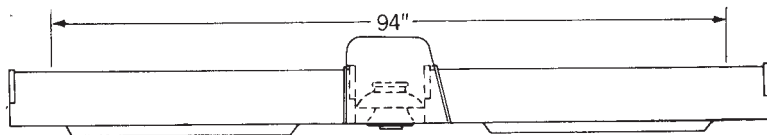


Figure 40.
34.5 kV—Two 13648-5 Line Guards. One 13623-1 Single Insulator Cover.

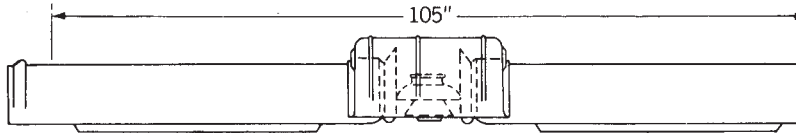


Figure 41.
34.5 kV—Two 13648-32 Coupler Type Line Guards. One 30568 Double Insulator Cover.

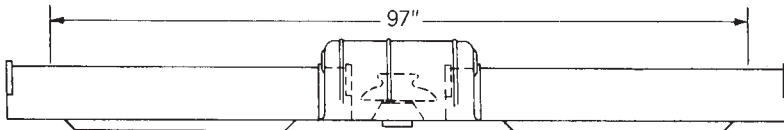


Figure 42.
34.5 kV—Two 13648-5 Line Guards. One 30568 Double Insulator Cover.

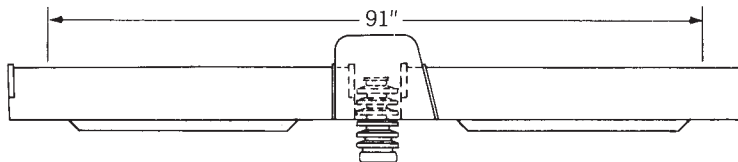


Figure 43.
34.5 kV—Two 13648-5 Line Guards. One 13623-1 Single Insulator Cover.

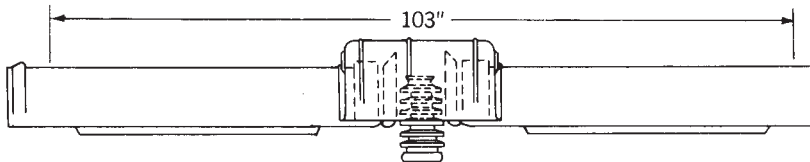


Figure 44.
34.5 kV—Two 13648-32 Coupler Type Line Guards. One 30568 Double Insulator Cover.

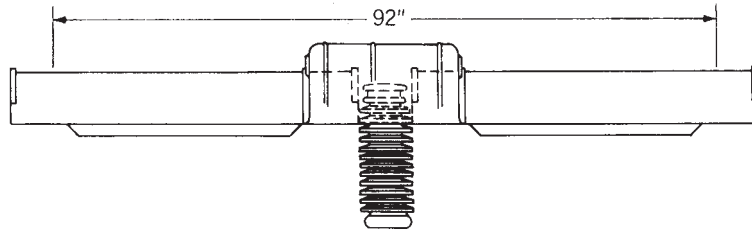


Figure 45.
34.5 kV—Two 13648-5 Line Guards. One 30568 Double Insulator Cover.

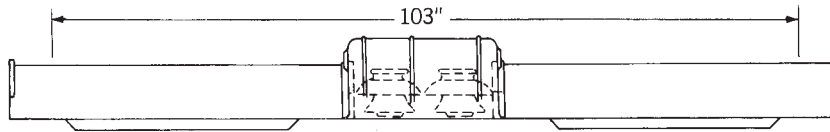


Figure 46.
34.5 kV—Two 13648-5 Line Guards. One 30568 Double Insulator Cover.

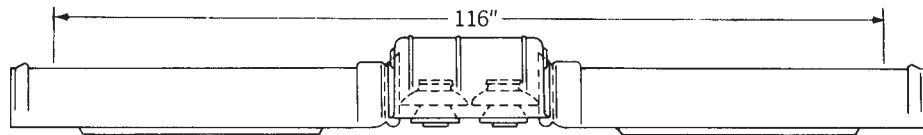


Figure 47.
34.5 kV—Two 13648-32 Coupler Type Guards. One 30568 Double Insulator Cover.

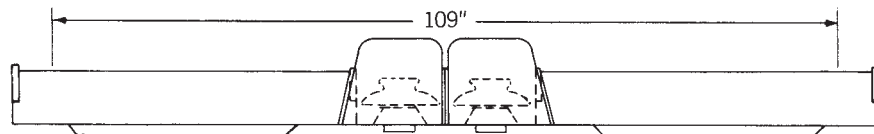


Figure 48.
34.5 kV—Two 13648-5 Line Guards. Two 13623-1 Single Insulator Covers.

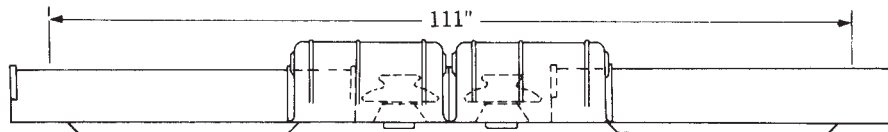


Figure 49.
34.5 kV—Two 13648-5 Line Guards. Two 30568 Double Insulator Covers.

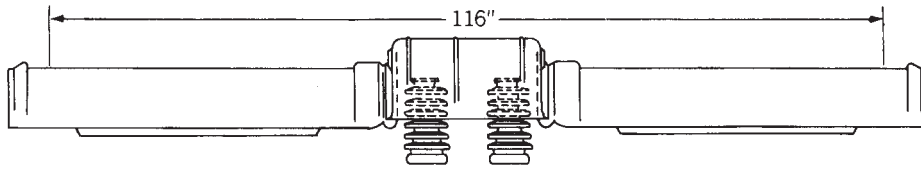


Figure 50.
 34.5 kV—Two 13648-32 Coupler Type Line Guards. One 30568 Double Insulator Cover.

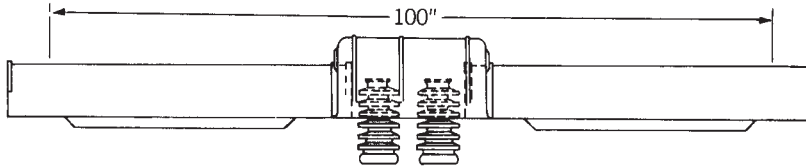


Figure 51.
 34.5 kV—Two 13648-5 Line Guards. One 30568 Double Insulator Cover.

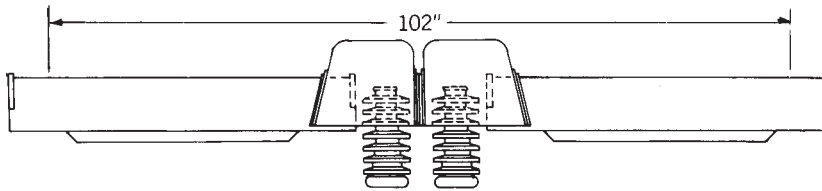


Figure 52.
 34.5 kV—Two 13648-5 Line Guards. Two 13623-1 Single Insulator Covers.

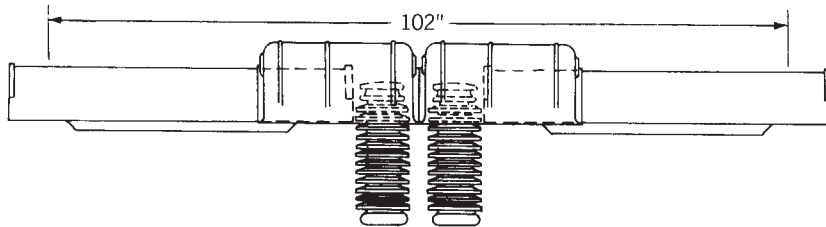


Figure 53.
 34.5 kV—Two 13648-5 Line Guards. Two 30568 Double Insulator Covers.

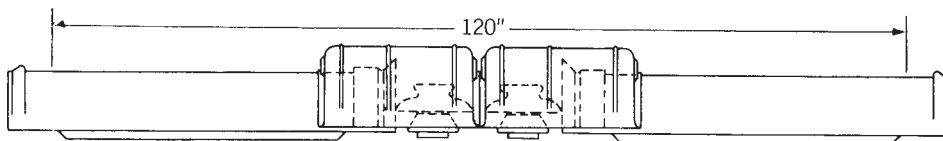


Figure 54.
 34.5 kV—Two 131025 Line Guards. Two 30568 Double Insulator Covers.

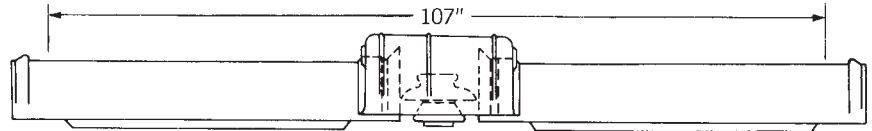


Figure 55.
46 kV—Two 131025 Line Guards. One 30568 Double Insulator Cover.

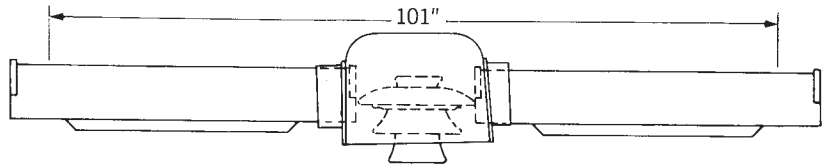


Figure 56.
46 kV—Two 13648-5 Line Guards. One 48123 Tandem Cover Unit.

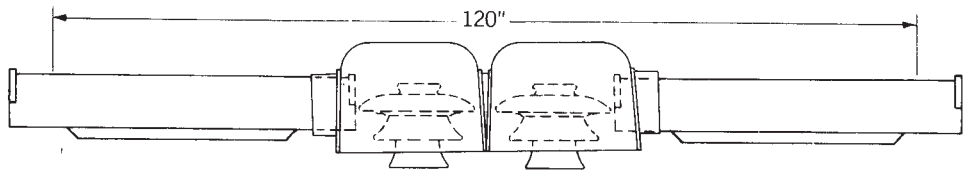


Figure 57.
46 kV—Two 13648-5 Line Guards. One 48125 Tandem Cover.

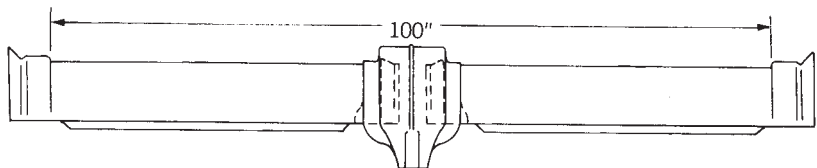


Figure 58.
69 kV—Two 131025-1 Line Guards. One 131024 Coupler.

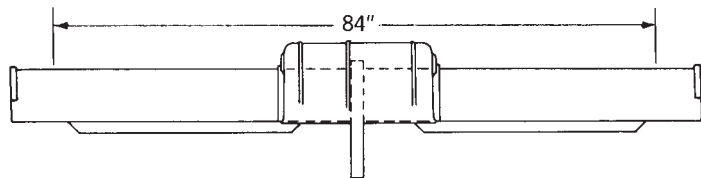


Figure 59.
69 kV with Cover and Hook. Two 13648-8 Line Guards.
One 20608-1 Shepherd Hook Coupler. One 30568 Double Insulator Cover.

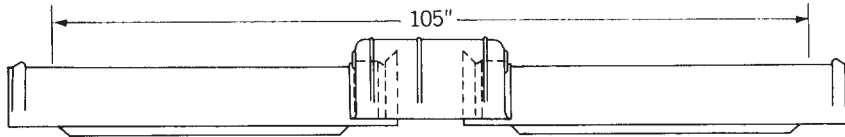


Figure 60.
69 kV—Two 131025-1 Line Guards. One 30568 Double Insulator Cover.

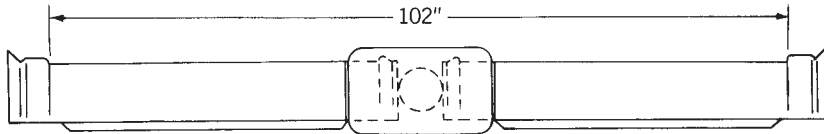


Figure 61.
69 kV—Two 131025 Line Guards. One 131037-1 Stand-Off Insulator Cover.

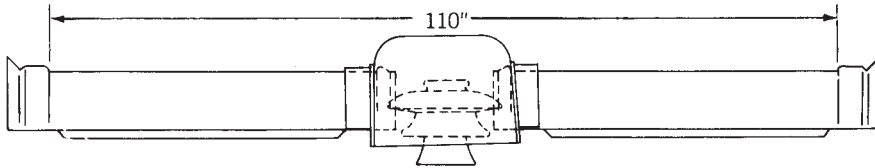


Figure 62.
69 kV—Two 131025 Line Guards. One 48123 Tandem Cover Unit.

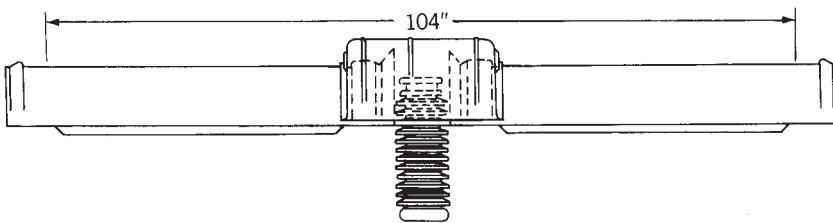


Figure 63.
69 kV—Two 131025-1 Line Guards. One 30568 Double Insulator Cover.

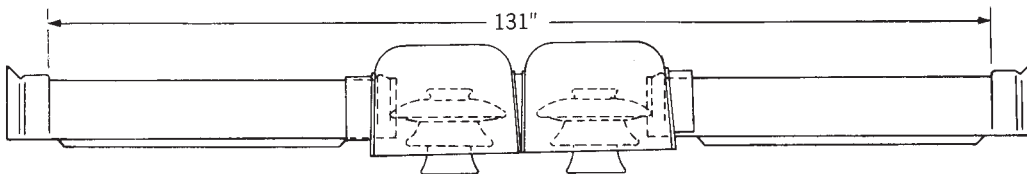


Figure 64.
69 kV—Two 131025 Line Guards. One 48125 Tandem Cover.



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