PREFORMED LINE PRODUCTS
The connection you can count on.

ARMOR-GRIP® Support

ARMOR-GRIP® Support Keeper: Aluminium alloy casting, comprises the top half of the ARMOR-GRIP® Support housing unit. The conductor range is cast on the outside of the Keeper.

ARMOR-GRIP® Support Body: Aluminium alloy casting for conductor range 9,9 mm to 46 mm, Comprises the bottom half of the ARMOR-GRIP® Support housing unit. The conductor range is cast into the inside of the body.

ARMOR-GRIP® Cap Screws and Lock Washers: Galvanized steel

ARMOR-GRIP® Support Inserts: An elastomer specifically formulated for resistance to ozone attack, weathering, extreme high and low temperature variations, and Compression set. An aluminium alloy reinforcement is molded into the elastomer. The conductor range is molded into the inside of each insert.

ARMOR-GRIP® Support Rod: Aluminium covered steel for aluminium based conductor diameter range 9,9 mm to 12,2 mm. Aluminium alloy for aluminum based conductor diameter range 12,3 mm to 46mm. Standard rod ends are supplied for sub-EHV applications and Parrot Bill® rod ends are supplied for EHV applications.

Colour Code: Identifies conductor diameter range.

Centre Mark: Identifies starting location and centre of rods during installation.

Identification Tag: Identifies rod material, conductor type and diameter range.

Special Note and Conductor Range: Each ARMOR-GRIP® Support housing unit has a wide conductor range and is an overlapping design that incorporates several different pairs of inserts and sets of rods. Each pair of inserts has a narrow conductor range and will accommodate a few different sets of rods. Each set of rods has a very narrow conductor range and is designed for use only on the size conductor listed on the ID tag.

General Recommendations

ARMOR-GRIP® Support, intended for use on aluminium based conductors with a diameter range of 9,9 mm to 46 mm is designed to be used with clamp-top horizontal and vertical line post insulators.

The ARMOR-GRIP® Support is designed to reduce static and dynamic stress at the support point, so that the conductor is better able to withstand the effects of vibration than with armor-clamp attachments. It also helps protect the conductor in the support area against flashover.

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While ARMOR-GRIP® Support provides improved protection against vibration fatigue of the conductor, on some lines vibration may be so severe that the use of vibration dampers may be necessary. Utilities that have experienced vibration or expect to should consider adding dampers. Consult PLP for general guidelines and recommendations concerning vibration and dampers.

Unbalanced Loading: The ARMOR-GRIP® Support will withstand an unbalanced load of approximately 10 to 20% of the conductor RBS before initial slip occurs. Slightly higher unbalanced loads will be obtained after the unit has been in service for a period of time.

Mechanical Strength: The ARMOR-GRIP® Support will withstand a pulloff load from the trunnion pins of the insulator cap of 2 260 kg applied in any direction. This includes the vertical up direction so that the unit will withstand an uplift load. Since the bore of the unit is symmetrical throughout the entire 360° range, a radial conductor load may be applied safely in any direction.

Line Angles: A maximum line angle of 30° may be turned using a single ARMOR-GRIP® Support, and a maximum of 60° using the Double-Support unit.

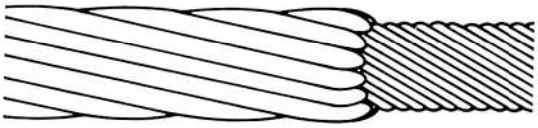
ARMOR-GRIP® Support: Double. A special ARMOR-GRIP® Support is available for applications utilizing a double support.

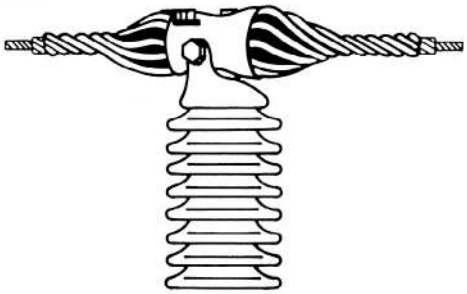
Loading Consideration: In the work of line design, it should be considered that the cantilever strength of the insulator may be the governing factor, rather than the strength rating of the ARMOR-GRIP® Support for unbalanced loading, mechanical strength, and turning angles.

Unusual Line Conditions: The ARMOR-GRIP® Support may be rotated vertically on the trunnion pins a maximum of 15° before the bottom of the unit interferes with the insulator cap. This should be considered for those terrain conditions, such as a steep side hill, which might result in the unit being installed at an angle from the horizontal.

Design Modification

1. ARMOR-GRIP® Support for line repair. For repair of fatigue damaged conductors, a special designed ARMOR-GRIP® Support can be applied over PREFORMED™ type armor rods to extend the life of the conductor. Wrench formed rods must be removed when conductor fatigue occurs under them. A splice is then applied to the fatigue area and the ARMOR-GRIP® Support is applied over the splice. This type of application requires special consideration and PLP should be consulted for a technical evaluation.





2. EHV Applications. To meet the corona onset and RIV requirements for most extra high voltage applications, Parrot Bill® ends are to be used instead of standard rods. Consult PLP for EHV engineering recommendations.

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Installation Guidelines

1. Conductor compatibility. ARMOR-GRIP® Support should be used only on the size and type of conductor for which they are designed. ARMOR-GRIP® Support is designed for right-hand lay conductor. Consult PLP when using types and/or sizes of conductor not mentioned on the catalogue pages.

2. During installation of the ARMOR-GRIP® Support keeper to the body, the cap screw should be tightened only until the lockwasher is flat. A relatively low torque value of approximately 10 to 15 foot pounds is sufficient to flatten the washer. The inherent gripping of the rods provides the majority of the unbalanced holding strength of the unit. Further tightening may damage the keeper of the body.

3. Consult the ARMOR-GRIP® Support Application Procedure for additional information regarding the correct installation of ARMOR-GRIP® Support.

4. ARMOR-GRIP® Support rods are not interchangeable with either standard armor rods or ARMOR-GRIP® Suspension rods.

Safety Considerations

1. This product is intended for a single (one-time) use and for the specified application. However, all components, except for the rods, may be reused if in good condition. CAUTION: DO NOT MODIFY OR REUSE THE RODS UNDER ANY CIRCUMSTANCES.

2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.

3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.

4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size ARMOR-GRIP® Support before application.

5. ARMOR-GRIP® Supports are precision devices. To ensure proper performance, they should be stored in cartons under cover and handled carefully.

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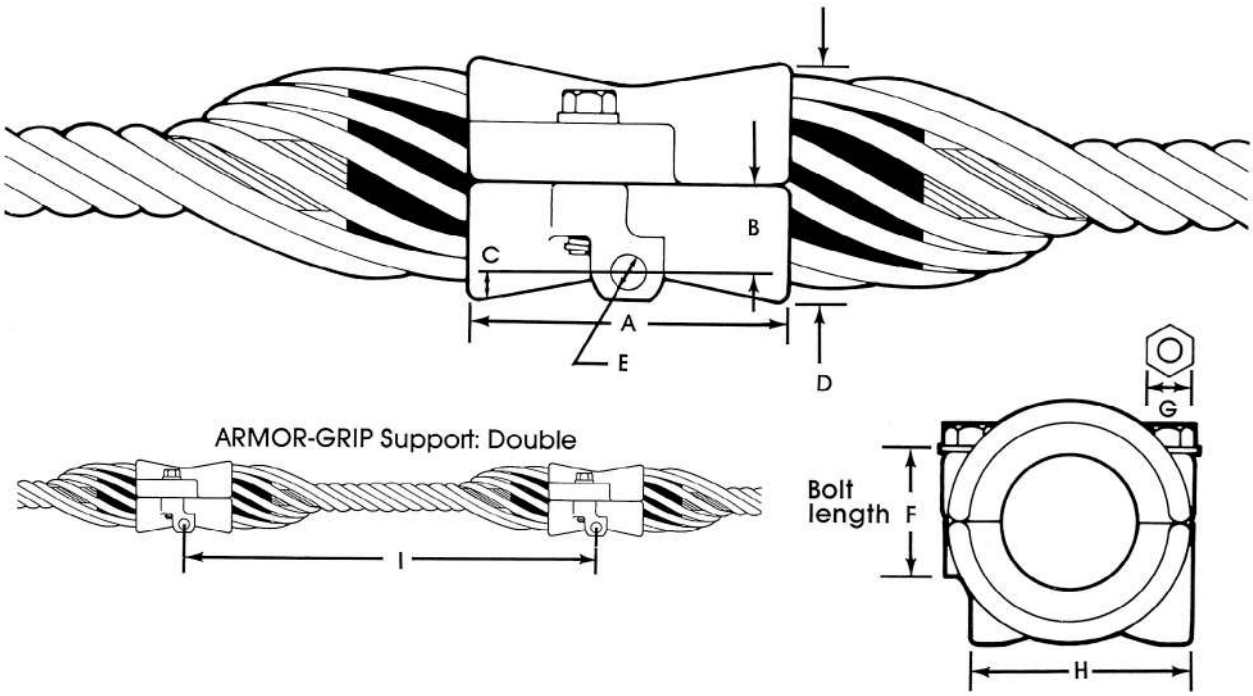

CONDUCTOR RANGES (mm)	DIMENSIONS IN mm								
	A	B	C	D	E	F	G	H	I
9.91 – 12.22	64.3	16	19.4	49.6	15.1	50.8	19.1	98.4	304.8
12.24 – 13.77	76.2	16	25.4	60.3	15.1	50.8	19.1	98.4	304.8
13.79 – 15.72	79.4	10.3	22.2	64.3	15.1	50.8	19.1	98.4	304.8
15.75 – 16.38	79.4	10.3	22.2	64.3	15.1	50.8	19.1	97.4	457.2
16.41 – 19.05	95.25	16	21.0	69.9	15.1	50.8	19.1	98.4	457.2
19.08 – 23.04	114.3	19.1	21.4	81.4	15.1	57.2	19.1	98.4	457.2
23.06 – 25.52	127	28.6	16.7	91.3	15.1	57.2	19.1	98.4	558.8
25.56 – 30.68	139.7	33.3	20.6	106.4	15.1	57.2	19.1	98.4	660.4
30.71 – 34.42	152.4	37.1	20.6	117.5	15.1	57.2	19.1	98.4	736.6
34.44 – 39.55	165.1	41.3	23.0	129.8	15.1	57.2	19.1	98.4	812.8
39.57 – 46.43	177.8	49.2	19.4	137.3	15.1	57.2	19.1	98.4	939.8