



MacLeanTM
NETWORK SOLUTIONS

MacLean Network Solutions

Company Overview

COMPANY OVERVIEW

Maclean-Fogg Company

MacLean-Fogg Company is a group of global enterprises which partner with key customers to engineer, manufacture, and distribute products for the automotive and power utility marketplaces worldwide.



1925 Our Beginning

Founded in 1925, MacLean-Fogg offered one lock nut to North America's railroads.



3,200 Our Employees

MacLean-Fogg's worldwide workforce consists of more than 3,200 dedicated employees.



2 Our Divisions

MacLean-Fogg is comprised of two primary businesses: MacLean-Fogg Component Solutions & MacLean Power Systems



26 Our Facilities

MacLean-Fogg has 26 manufacturing facilities throughout North America, Europe and Asia.

MacLean-Fogg Company cont.



MacLean-Fogg Component Solutions is a leading supplier of fasteners, engineered components and engineered plastics serving many diverse industries, including automotive.



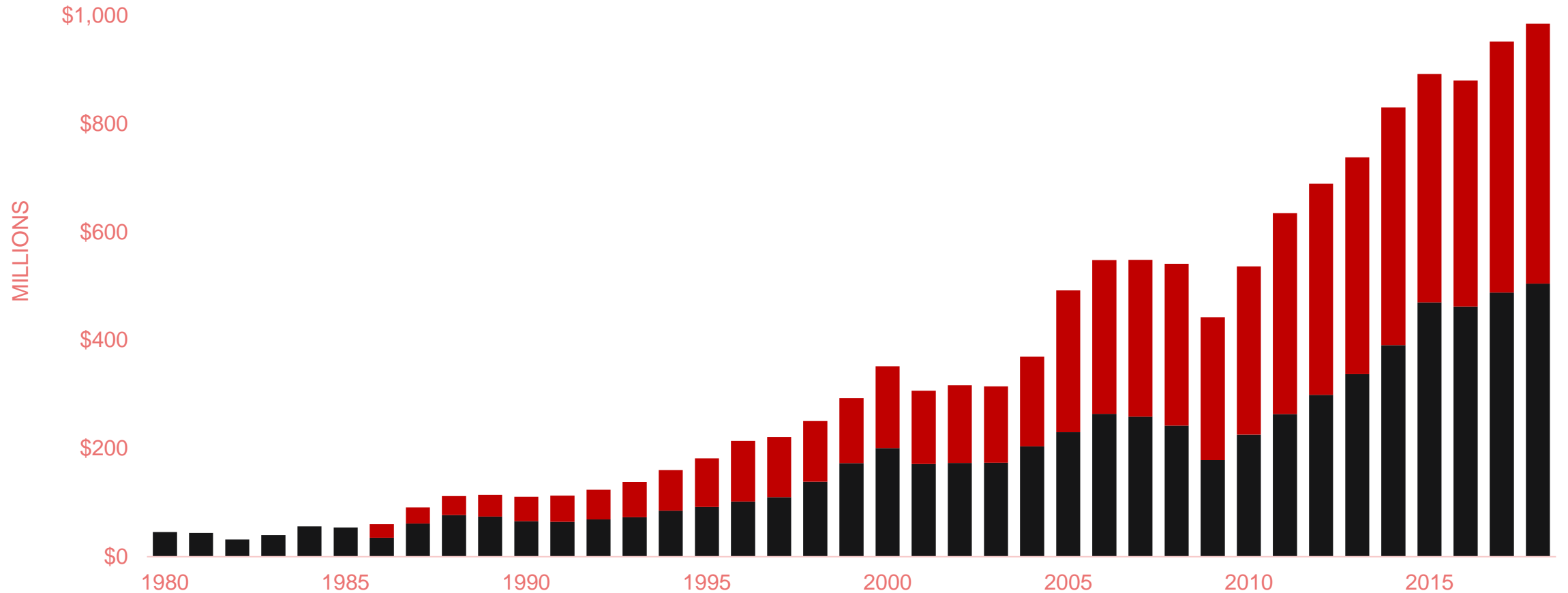
MacLean Power Systems is dedicated to keeping our power infrastructure performing optimally by supplying world-class products and programs to fulfill the needs of customers who maintain electrical services to consumers worldwide.



Maclean-Fogg Company cont.

MacLean Fogg Component Solutions
MacLean Power Systems

BALANCED, GROWING ENTERPRISE



MF Core Values



INTEGRITY IS THE
VALUE UPON WHICH
EVERYTHING ELSE
RESTS



IT'S ABOUT
PEOPLE

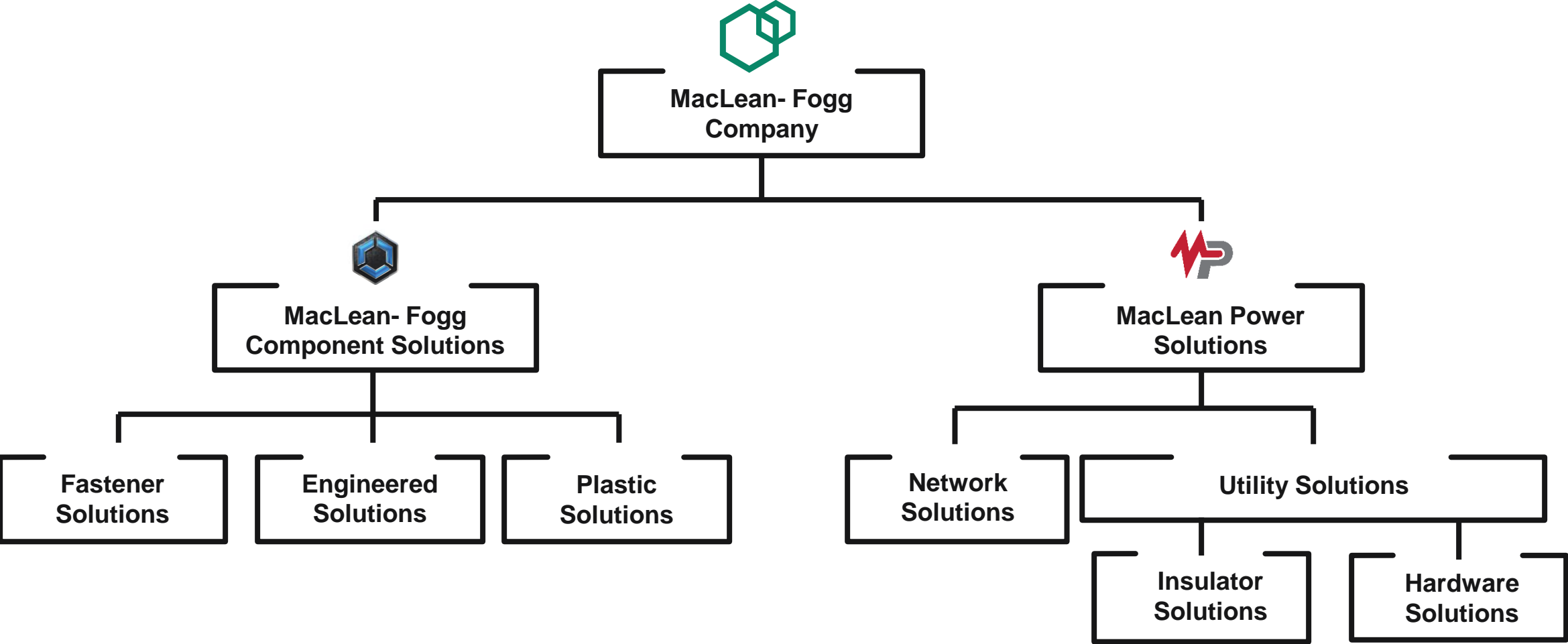


OUR **CUSTOMERS**
ARE THE FOCUS OF
EVERYTHING WE DO



WE VALUE
STEWARDSHIP

MF Business Units



MacLean Network Solutions



MacLean Network Solutions, or MNS, offers a comprehensive line of outside plant hardware for all your pole to pole, pole to house, and grounding & bonding needs.

Our domestic manufacturing footprint allows us to provide the highest level of service, and we proudly back up our products with application training and support, which MNS uniquely provides to the market.



MacLean Network Solutions cont.

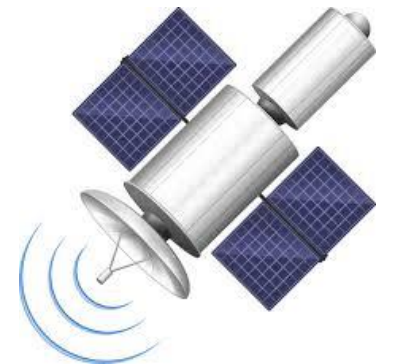
Network Solutions services the Communications market exclusively which allows for a single, cohesive approach to the market

How does MNS define the Communications Market?

- We define the Communications Market as “any product, end user, or application that involves the transmission of voice, video, data, or signal”

MNS manages the Communications market based on the following sub-markets:

- Telephone (Telco)
- Cable Television (Broadband/CATV)
- Satellite Television (SATV)
- Wireless / Small Cell
- Enterprise/C&I/Data Centers



THE MNS ADVANTAGE

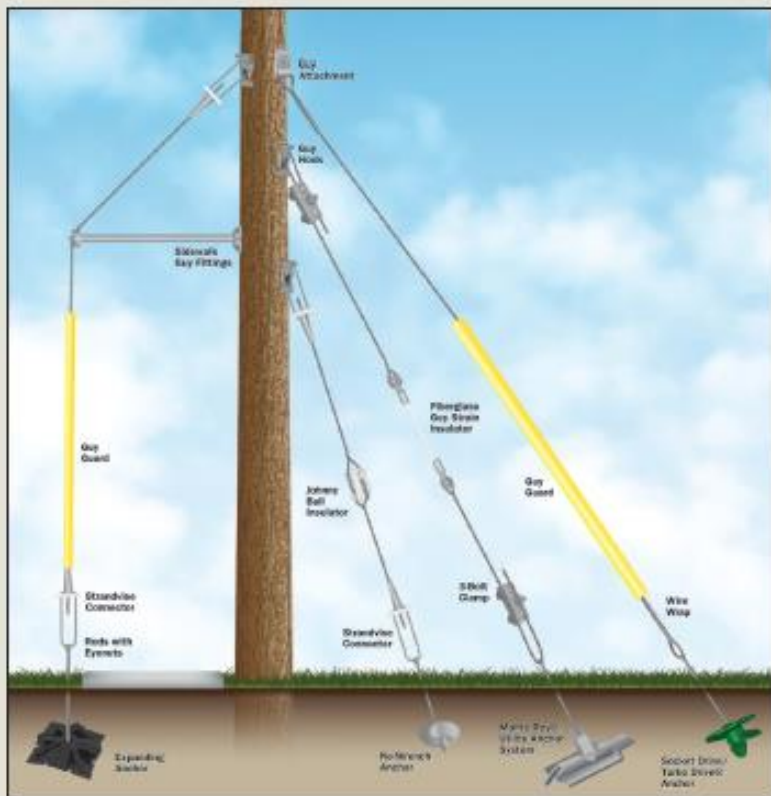
The MNS Advantage

- Comprehensive product line
- Best in industry service and support
- Technical support and product training
- Competitive prices and best quality
- Innovative and adaptable

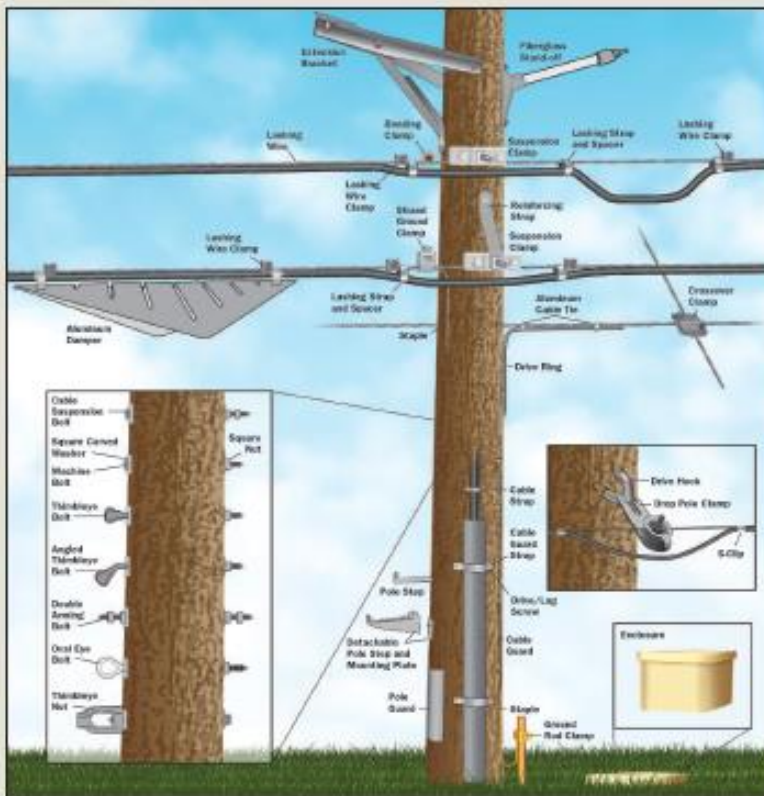
Comprehensive Product Offering

We are your one stop shop

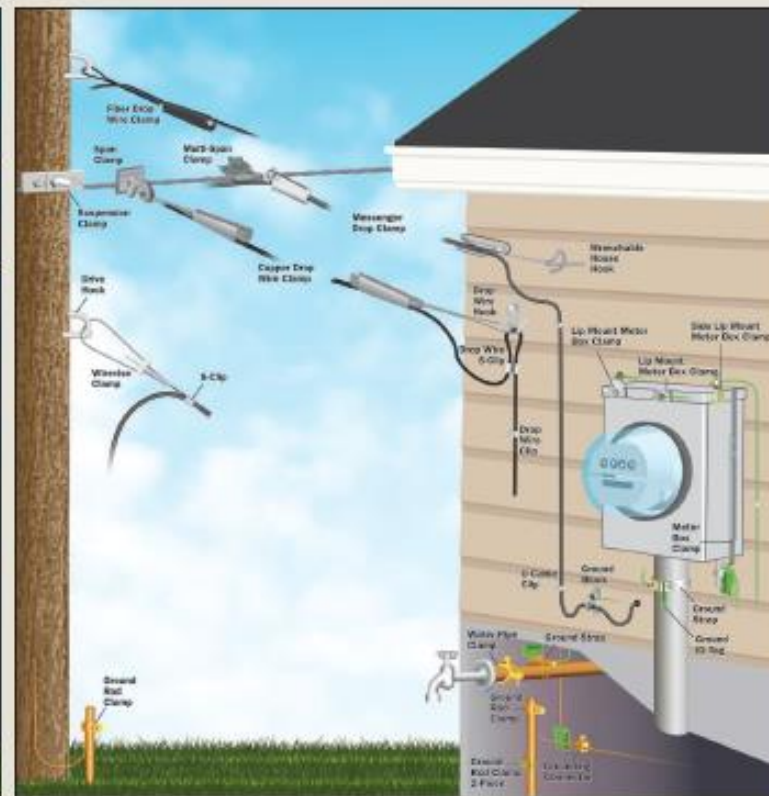
Hardware Installation Overview



Guying & Anchoring



Pole Line



Drop & Bonding/Grounding

The MSI Experience...When Support Counts!

Service and Support

- **Dedicated Storm Inventory**

- Hurricanes
- Ice storms
- Tornadoes
- Wild fires

- **Distribution Centers**

- Memphis, TN and Wood Dale, IL
- Short, Stable Lead Times


- **Global Manufacturing Footprint**

- 1.2 million square feet of USA based manufacturing
- Factories in Canada, China, Brazil, SE Asia and Europe
- Allows for best prices and quick delivery



Technical Support and Training

- Product line support
- Product training options
 - Drop Installation product demonstrations
 - Bonding & Grounding seminars
- IOB handouts & Product Ordering Guides
- Product datasheets (can be found on our website resource library)
- Dedicated Sales Directors & Trainers



HANDI-REEL

MACLEAN # SI-1000, SI-1001


MacLean Networks Solutions Handi-Reel design is lightweight and compact for easy handling, transportation, and storage. This provides a contractor or technician an easier way to dispense wire reels for indoor and outdoor job sites.

Features

- ANTI-SKID STABILITY PADS**
 - Stability during installation
 - Leave unattended while dispensing cable
 - Pads protect floor from scratching
- EASY-REEL INSTALLATION**
 - Locks in open position
 - Safety latch prevents reel from detaching
 - Patented reel mechanism for durability
 - Holds heavy reels securely
- ALUMINUM FRAME**
 - Light weight and corrosion-free
 - Handles for single person carry
 - Collapses for minimum storage



Ordering Information

Catalog Number	Max Reel Diameter	Max Reel Width	Single Diameter
SI-1000	19in	13in	5/8in
SI-1001	25in	16in	5/8in



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MacLean is now known as
MacLean
NETWORK SOLUTIONS



"SCREWLESS" BASEBOARD CLIPS

SI-0991-SERIES

MNS "Screwless" baseboard clips have been specifically designed to facilitate and enhance the installation of indoor coaxial cable, telephone wire, or Category 5 communication wire at a subscriber's home. These SI-0991 Series Clips slip easily behind baseboards to firmly secure cables along walls and carpeting. They avoid crushing or nicking of the cables commonly caused by conventional cable clips using screws, nails or staples.

Features

- Made of high quality steel with high impact, baked enamel finish
- Clips incorporate two barbs for a permanent installation
 - Can be easily flattened with pliers to remove and reuse clips
- Clips are available for RG 6 indoor coaxial cable, telephone wire or Category 5 communication wire
 - Available in black, white or ivory
- Ensures proper installation every time

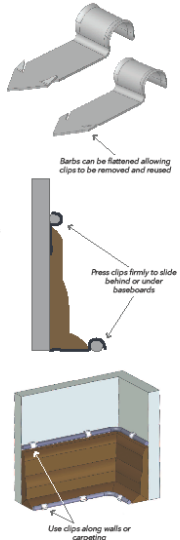
Installation

1. Mount clip on indoor cable
2. Position clip and cable flush to wall or carpeted surface
3. Press firmly with thumb to pierce any paint and slide clip behind baseboard
4. Space clips properly to secure cable uniformly along walls and carpet

Ordering Information

- SI-0991-X "Screwless" RG 6 Cable Clip
- SI-0992-X "Screwless" RG 6 Quad Cable Clip
- SI-0993-X "Screwless" Telephone Wire Cable Clip
- SI-0994-X "Screwless" Category 5 Cable Clip


Part Number Note - "X" represents enamel color:
B - Black W - White N - Ivory




Barbs can be flattened allowing clips to be removed and reused

Press clips firmly to slide behind or under baseboards

Use clips along walls or carpeting



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PRODUCT LINES

Core Product Lines

- **Hardware**
 - Often referred to as Aerial Hardware, Pole Line Hardware or Construction Hardware
- **Anchors**
 - Often referred to as Earth Anchors – screw type, bust type, drive type
- **Drop Hardware**
 - Often referred to as Installation Hardware
- **Bonding & Grounding**
- **Wireless Products**
 - Small Cell attachment hardware
 - Antenna brackets
- **Enterprise Solutions**
 - Often referred to as Data Center Products, or Central Office Products
- **Tools**

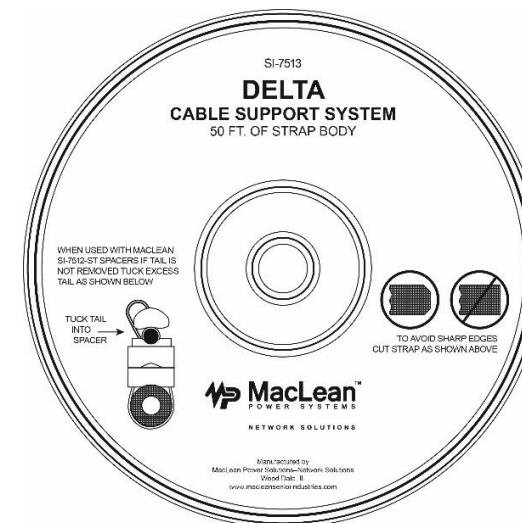
Aerial / Pole Line Hardware

- Banding Products
- Bolts
- Brackets
- Cable Suspension Clamps
- Delta Banding
- Drive Hooks
- Formed Wire products
- Guy Clamps
- Guy Hooks
- Lashing Products
- Screws
- Strandwise® Automatic Connectors
- Straps
- Suspension Clamps
- Washers
- U-Guards



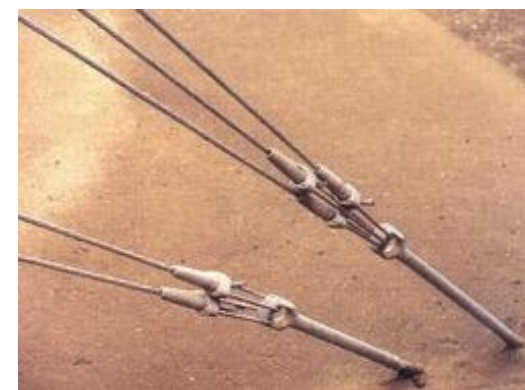
Product Focus - Delta Cable Support System

- Application
 - Non-metallic cable support system for attaching communications cable or fiber to a messenger strand
- Features
 - No sharp edges
 - Quick installations
 - Versatile stackable spacers allows for one part number to accommodate multiple height requirements
 - Made from UV stable acetal material
- Strap/Banding
 - 50' spools (in carrier) or pre-cut assemblies
- Locking Head/Buckle
 - Stainless steel jaws
- Stackable Spacers
 - 1/2" height
- Pre-Cut Assemblies
 - Lengths of 10", 13.5", 16", 22", 27", 40"



Product Focus - Strandvise® Connectors

- The Original Automatic Connector
- “Reliable” trade name
- “Strandvise®” trademark
- Most Extensive Offering
 - All Grades
 - Universal
 - Links
 - Reducers
- Color Coded
- USA Made – Quality!
- Accept No Substitute!



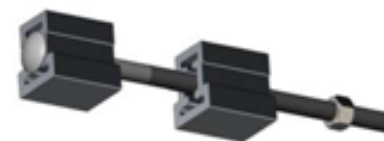
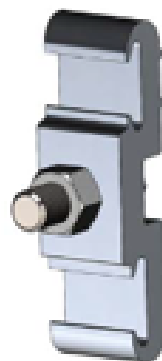
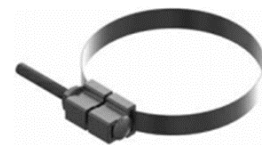
Product Focus - Insulators, U-Guards, Extension Brackets

- Line Insulators
 - Porcelain “Johnny Ball” insulators
 - Guy wire guards
- Extension Brackets
 - Fiberglass
 - Steel
- Guy Guards
 - PVC
 - USA Made
 - Schedule 30 thru 80 available
 - 1” thru 6” available
 - Metal



Product Focus - Stainless Steel Banding

- Benefits
 - Quick Installation
 - No drilling on composite, steel or concrete poles
 - Can be formed over any shaped pole
 - Stainless steel
 - Smooth edges
 - Optional carrier for convenience
- Banding
 - 1/2", 3/4", and 1 1/4" width
- Buckles
 - Ear-Lokt and bolted styles
- Brackets
 - Five options for maximum versatility
- Tensioning Tools
 - Four options and strengths



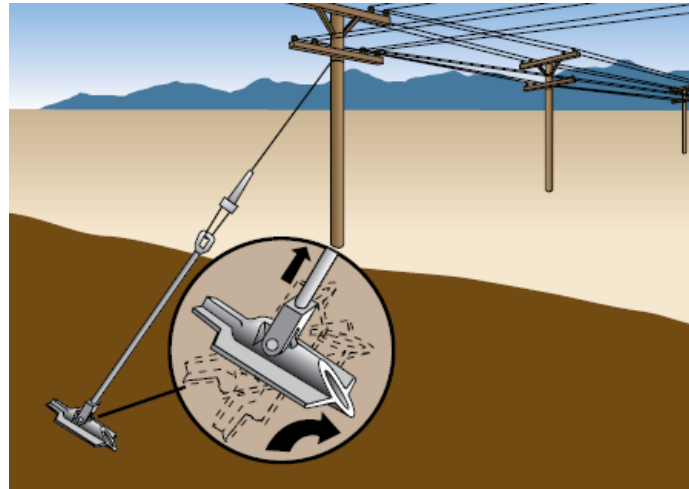
Anchors

- Screw Type
 - Heavy Duty
 - Square Hub
 - Multi Helix Square Hub
 - Turbo Drive/Socket Drive
 - Light Duty
 - One-Piece, No Wrench
- Pre-Drilled/Hand Dug
 - Expandable/Bust
 - Rock
 - Cross Plate
- Drive Type
- Foundation Pile
- Manufactured in Trenton, TN



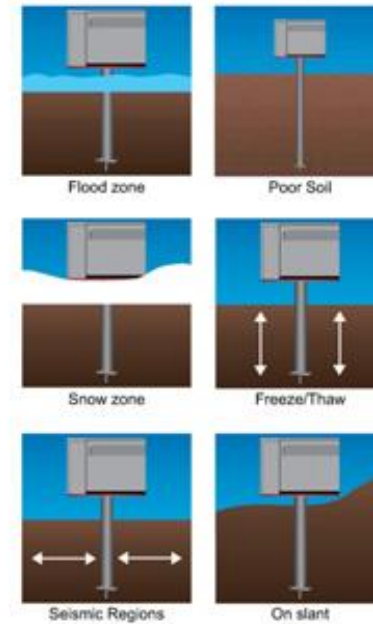
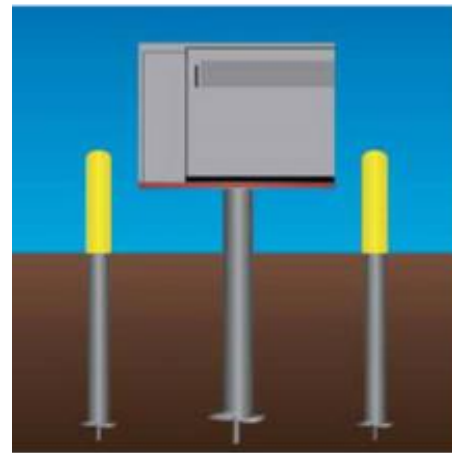
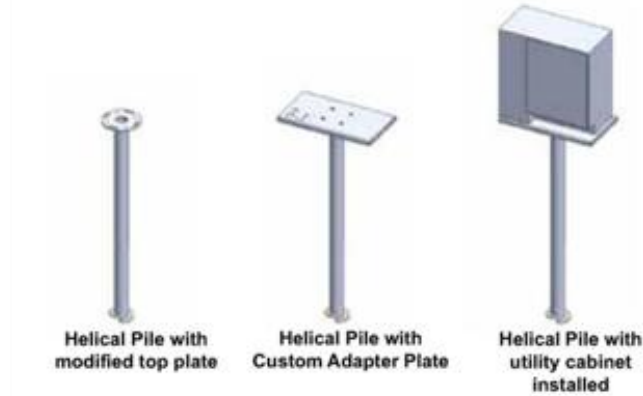
Product Focus - Manta Ray® Driven Anchors

- Drive Type/Toggle Lock
- No need for traditional install truck
- Jackhammer or Bobcat install
- 100% proof load with Load Locker
- Installation Kits available



Product Focus - Cabinet Pile

- Patented Design
- Alternative to precast or poured concrete slabs
- Alternative to pole mounted options
- Quick installation
- Allows for elevation in flood zones
- Quick installation on sloped surfaces



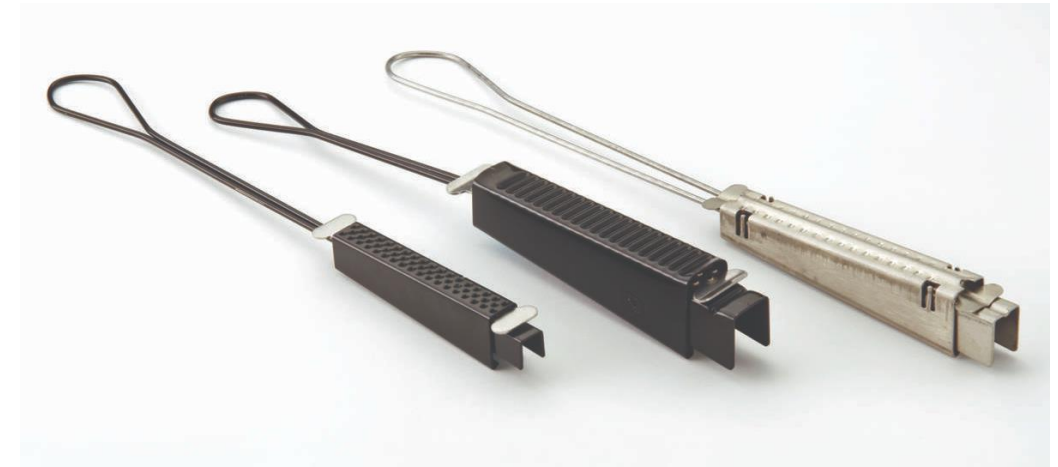
Drop Hardware

- Baseboard Clips
- Cable Straps
- Drive Rings
- Drop Clamps (Copper / Fiber / Messenger)
- Drop Clips
- Fasteners
- House Hooks
- Mobile Home Posts
- Pedestal Stakes
- Plastic Anchors
- Span Clamps



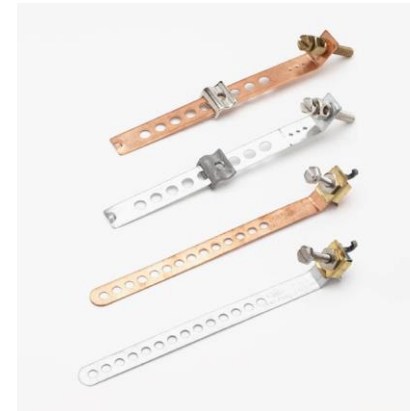
Product Focus - Drop Clamps

- Fiber
 - Black color to easily differentiate from copper drop clamps
 - Multiple options for various fiber geometries
 - Captive or Loose Shim
- Messengered Coaxial Cable
 - Best design in market
- Copper
 - Stainless Steel or Aluminum
 - 2 Pair or 6 Pair Wire
 - Metal or Plastic Shim
 - Captive or Loose Shim
 - Serrated or Dimpled Shim



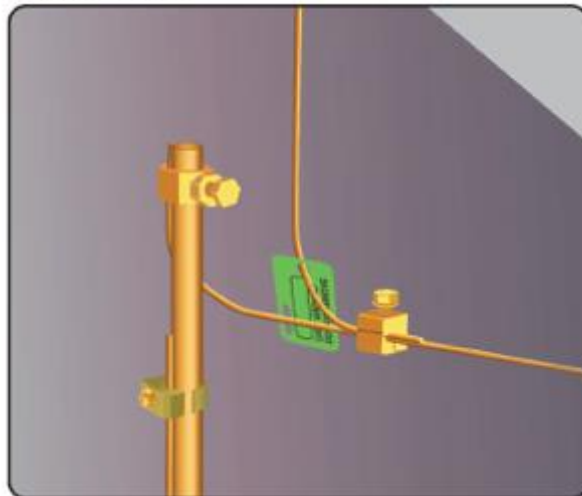
Bonding & Grounding Hardware

- Beam Clamps
- Bonding Harness
- Bronze Vice Clamps
- Ground Blocks
- Ground Lugs
- Ground Rod Clamps
- Ground Straps
- KUL Clamps
- Meter Box Clamps
- Split Bolts
- Water Pipe Clamps

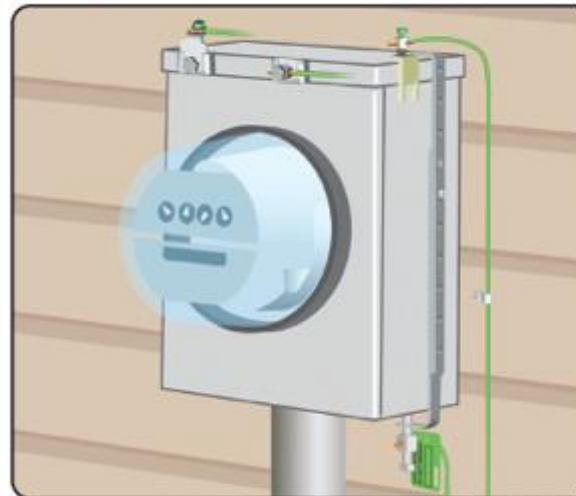


Bonding & Grounding Practices

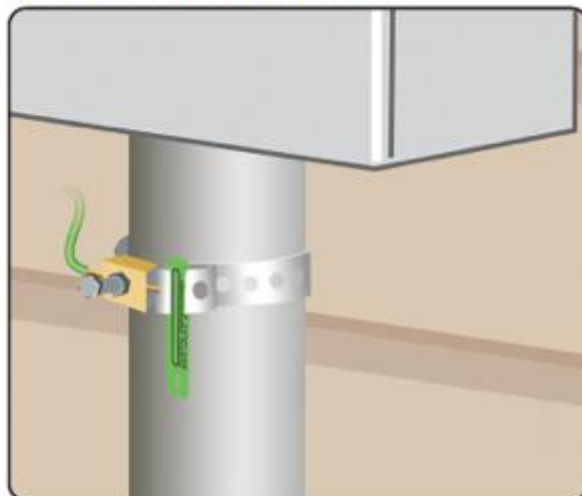
Power Ground



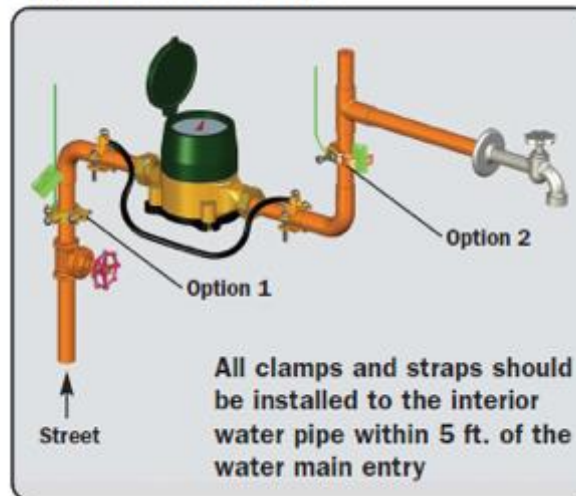
Power Meter Box



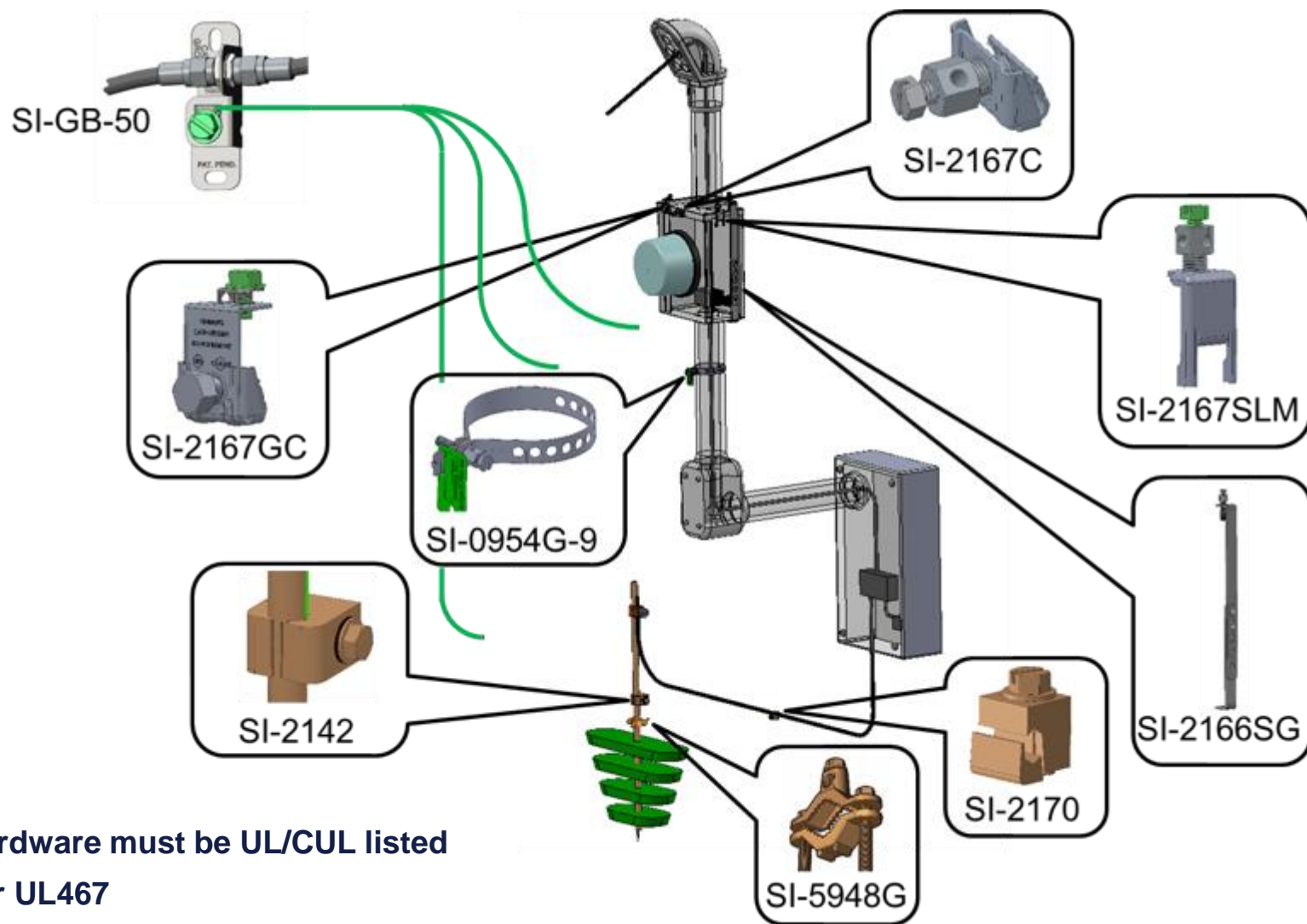
Metallic Service Mast Conduit



Copper Cold Water Pipe



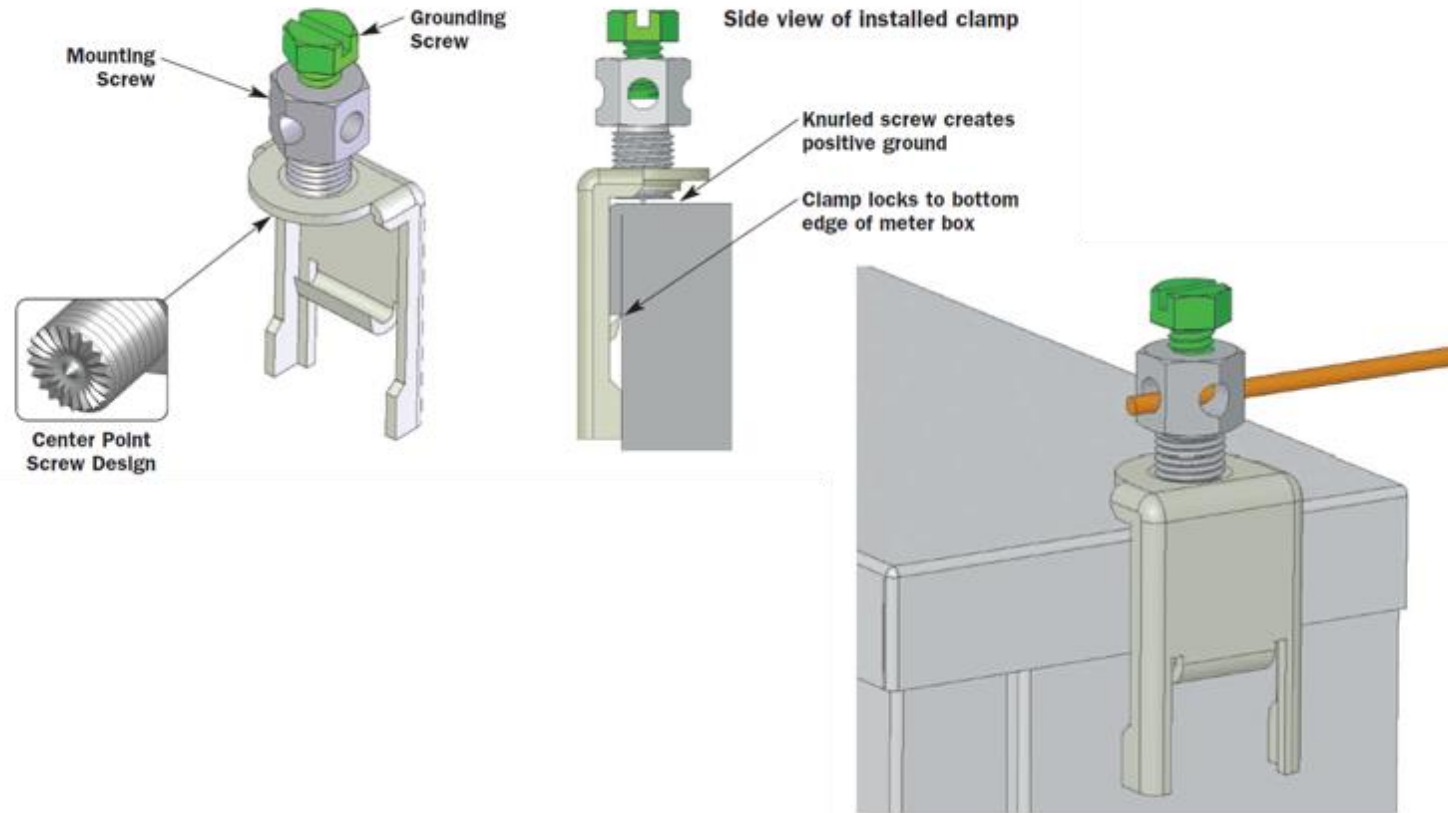
Bonding & Grounding Options



**Hardware must be UL/CUL listed
per UL467**

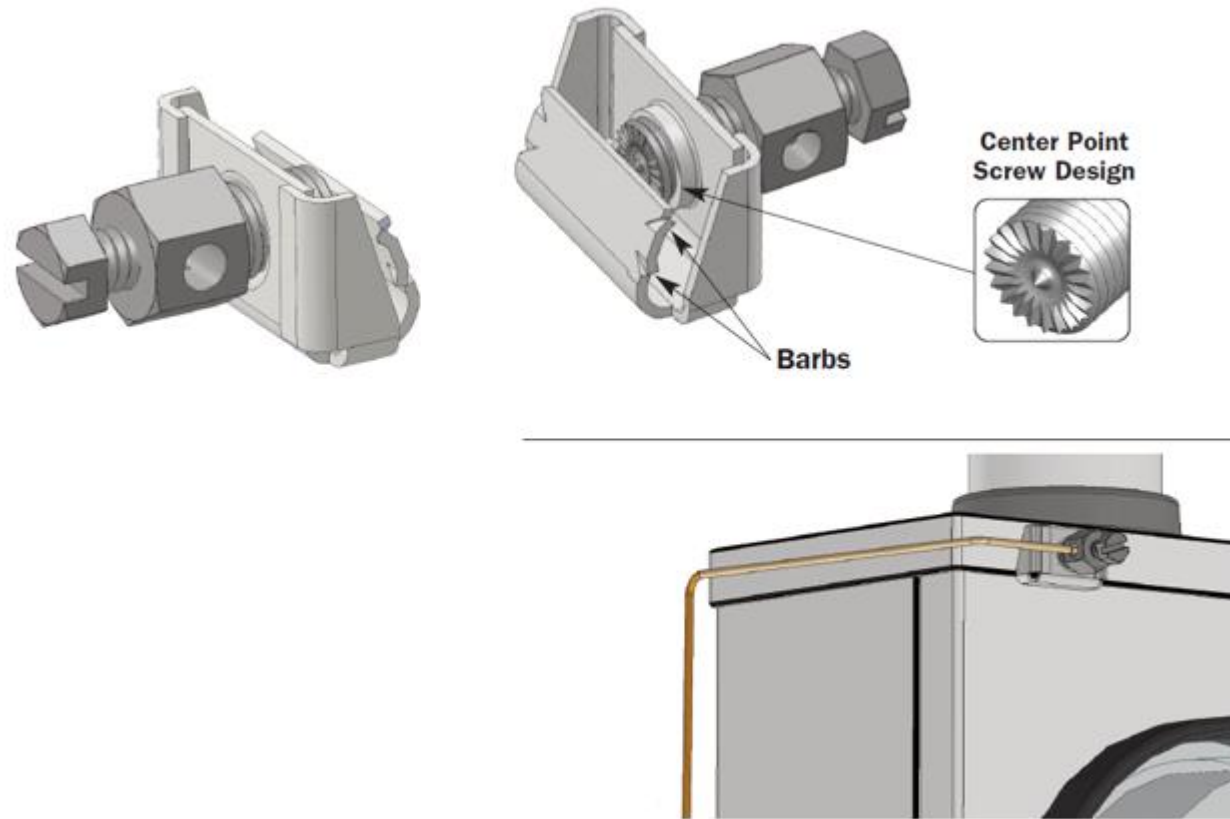
Product Focus - SI-2167SLM Side Mount Meter Box Clamp

Preferred Meter Box Clamp Option



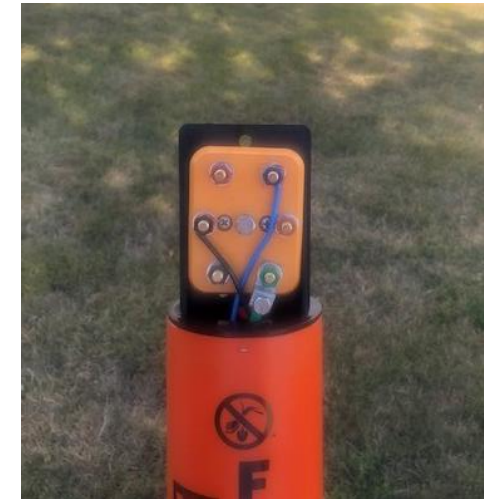
Product Focus - SI-2167C Front Lip Mount Meter Box Clamp

For use when the meter box is mounted flush to a wall



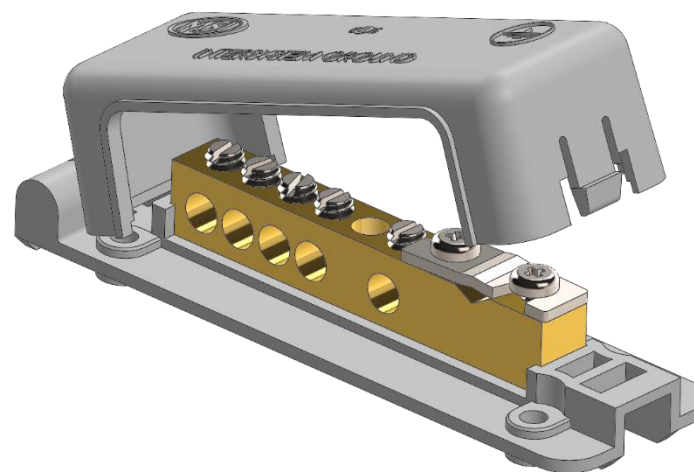
Product Focus - Isolation Switch

- Application
 - Switch that provides grounding of tracer wire when not in use, and ability to isolate tracer wires during locate activities
- Construction
 - Patent Pending rotary design with positive stop positioning to maintain consistent contact while in grounding or isolation mode
 - Housing made from UV stable nylon
 - Internal components and threaded studs made from brass alloy
- Features
 - Small compact design
 - Fits marker posts and buried test stations
 - Single tool operations (can wrench)
 - 7/16 hex - tightens all 6 threaded studs and opens/closes the switch
 - 3/8" hex – tightens the ground lug
 - Colored hex nuts allow for easy tracer wire identification



Product Focus - Intersystem Bonding Terminal

- Complies with NEC Article 250.94
- Bonds ground wires from multiple Communications Systems to a single main ground



Wireless – Antenna Mounting Bracket Universal Pole Top Configuration

- Used for installation of Commscope, Kathrein and Amphenol omni-directional antennas
- Construction
 - Made from 12 gage steel, black powder coat
 - Welded construction for high strength
 - Weight – 17 lbs
- Installation options
 - (2) 5/8” thru bolts, or
 - (3) Banding slots for up to 1.25” size
- Fully adjustable design
 - Rotational capability of 360°
 - Pivot capability of +/- 17.5°
- Leg length 36”



Wireless – Antenna Mounting Bracket Pole Top Extension Configuration

- Used for installation of Commscope, Kathrein and Amphenol omni-directional antennas
- Construction
 - Made from 12 gage steel, black powder coat
 - Welded construction for high strength
 - Weight – 15 lbs
- Includes installation hardware
 - (2) 3/4" x 12" bolts
 - (2) 5/8" nuts
- Fully adjustable design
 - Rotational capability of 360°
 - Pivot capability of +/- 17.5°
- Designed specifically for use with Highline pole top extensions



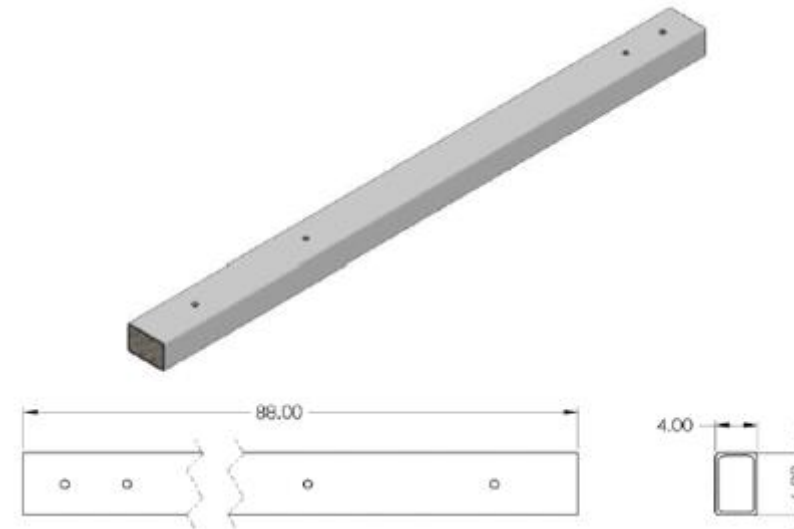
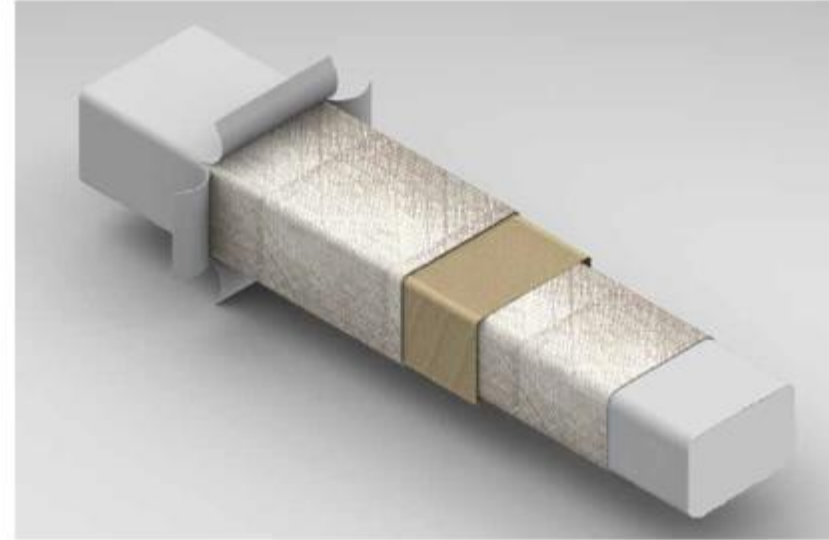
Wireless – Antenna Mounting Bracket Offset Configuration

- Used for installation of Commscope, Kathrein and Amphenol omni-directional antennas
- Construction
 - Made from 12 gage steel, black powder coat
 - Welded construction for high strength
 - Weight – 15 lbs
 - 11.25” offset
- Includes installation hardware
 - (2) 5/8” x 10” bolts
 - (2) 5/8” nuts
 - (2) 5/8” round washers
- Banding slots accommodate up to 1” width
- Fully adjustable design
 - Rotational capability of 360°
 - Pivot capability of +/- 17.5°



Wireless – Fiberglass Antenna Mount

- Used in place of wood timbers for pole top antenna applications
- UV stabilized, pultruded fiberglass beam
- Size:
 - 4" x 6" cross section
 - 7' length
- Environmentally friendly – no chemicals
- Lighter weight than wood timbers – 35 lbs.
- Option to order with pre-drilled holes or drill in the field
- Made in the USA



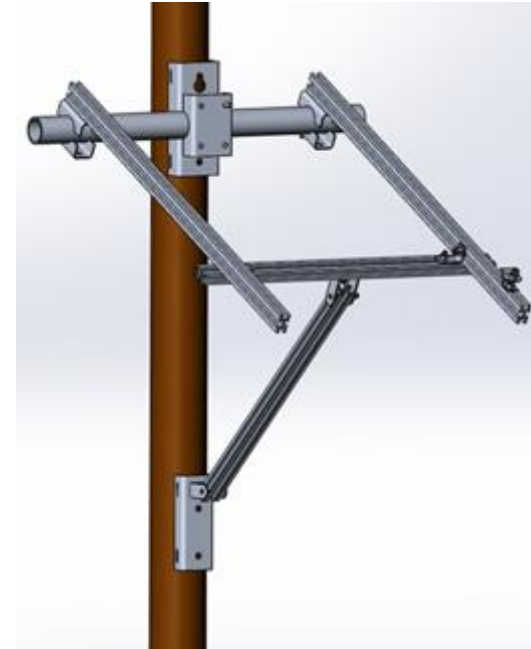
Wireless – Pole Top Extensions

- Ideal solution when pole replacement is costly and time sensitive
- Proven performance since 1973
 - 50,000 + in the field
- Exceeds strength requirements of a Class 2-10 wood pole, testing per ANSI 05.1-2015
- Available in 36"-120" lengths
- Option to order with pre-drilled holes or drill in the field
- Filament wound epoxy tube, brown color
- UV resistant, excellent weatherability
- Galvanized steel base accommodates pole diameters of 6"-12"
- Variety of mounting brackets available



Solar Panel Brackets

- Application
 - Fully adjustable bracket to be used in the installation of solar panels (used as battery power supply in traffic and fixed wireless applications)
- Features
 - Light-weight aluminum construction
 - Weight = under 40 lbs.
 - Fully adjustable assembly
 - Utilizes 4-way T slot extrusion for unlimited configurations
 - Solar panel angle can range from 0 to 90 degrees depending on brace length and allowable pole space
 - Versatile clip system allows panels to be positioned and installed without drilling the solar panel
 - Can accommodate wide variety of solar panels sizes
 - Accommodate panel thickness of 1.25" to 1.8"
 - Bracket lengths can be customized to handle a variety of panel sizes and orientations
 - Multiple panel configurations are available
 - Wind load testing availability



Enterprise Solutions

- Baseboard Clips
- Bridle Rings
- Distribution Rings
- Drive Rings
- J Hooks





MacLeanTM

NETWORK SOLUTIONS

Thank you