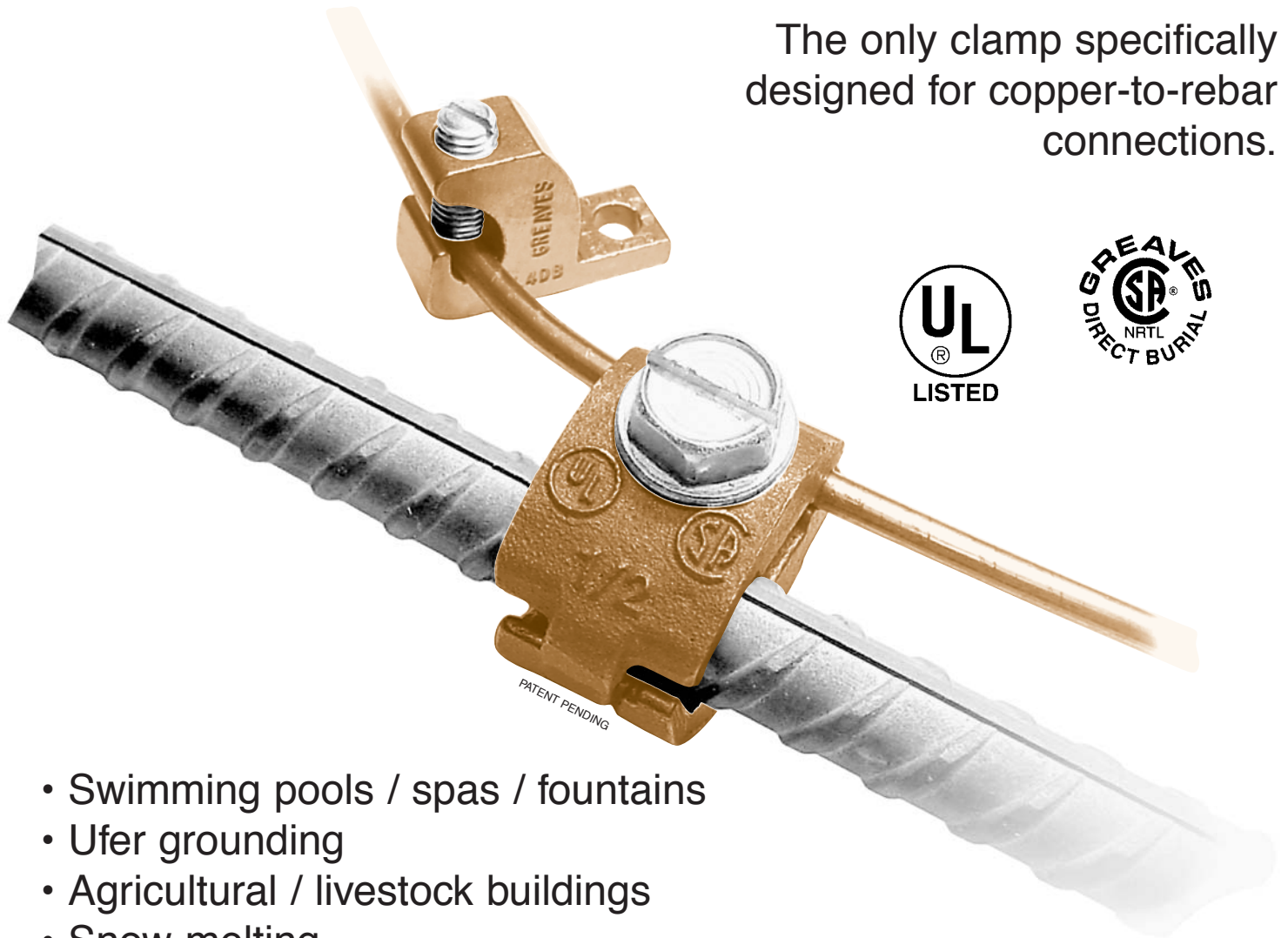


“Jones Bond”TM System

DIRECT BURIAL BONDING & GROUNDING

The only clamp specifically designed for copper-to-rebar connections.



- Swimming pools / spas / fountains
- Ufer grounding
- Agricultural / livestock buildings
- Snow melting
- Cathodic protection
- Other harsh environments
- Replaces exothermic welding



GREAVES

The unique and complete

"Jones Bond"™ System

DIRECT BURIAL BONDING & GROUNDING

The unique Greaves "Jones Bond" System creates a new, integrated approach to bonding and grounding in pool, livestock, and concrete-encased electrode applications. There are connectors to handle all these requirements, and all are made for the harsh direct burial environment.

The key is the innovative Jones Rebar Clamp. It is the only clamp specifically designed for rebar and it sets a new standard for easy and quick installation.

The Jones Rebar Clamp is designed to be easier and faster. Only one tool is needed – a hex wrench or screwdriver. No welding gear. No compression tool.

Both conductor and rebar are laid in from the side, allowing either continuous loop or individual bonding to the rebar grid. Once installed, they are locked in permanently. Patented "pig-teeth" grip firmly between the lands and grooves of the rebar to prevent slipping or turning on the rebar.

The Jones Clamp is the only connector specifically designed and approved for bonding to rebar (concrete reinforcing rod). Sizes are available for #3 (3/8"), #4 (1/2"), and #5 (5/8") rebar.

All Jones Bond system connectors are suitable for direct burial in earth and concrete because of their materials – copper, copper-alloy bronze, or stainless steel.

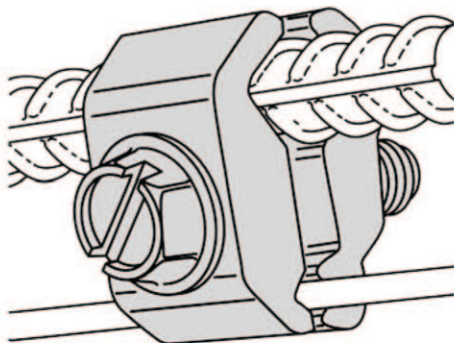
Special features of the Jones Rebar Clamp

- Compact. Easily covered in gunnite pool shell, concrete footing, or deck.
- Side-entry for lay-in installation. Install it where you want it. No need to feed it over the end and walk it down the line.
- Simple. Only tool you need is a hex wrench or screwdriver.
- No time-consuming welding operation. No heavy, awkward compression tool.
- Permanent. No slipping on the rebar, as can so easily happen with traditional pipe clamps.
- Approved for direct burial in earth or concrete.



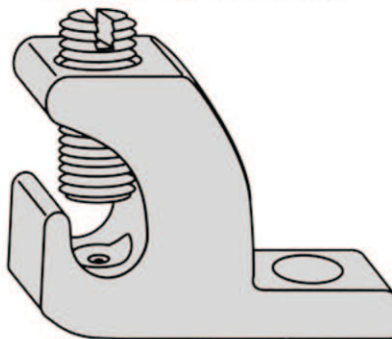
Here are the key units that make the innovative "Jones Bond" System superior and unique:

A EXCLUSIVE FROM GREAVES!



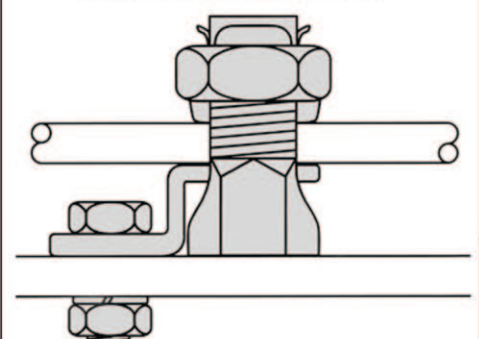
Jones Rebar Clamps: Bonds or grounds CU conductor to rebar. Creates permanent, no-slip connection to rebar. Open-side for quick lay-in of conductor and rebar. Cast bronze with stainless steel screw. Sizes for #3 (3/8"), #4 (1/2"), and #5 (5/8") rebar. UL listed and CSA certified for direct burial.

B EXCLUSIVE FROM GREAVES!



BTL-DB: Connects CU conductor to equipment. Open-side design for quick lay-in of conductor. Copper body with stainless steel screw. Also available tin-plated for use on aluminum. For #4-14 AWG copper conductor only. Sizes for #10 and 1/4 mounting screws. Stainless steel mounting hardware kits available. UL listed and CSA certified for direct burial.

C EXCLUSIVE FROM GREAVES!



BugLugs: Heavy duty lay-in lugs for connection of CU conductor to equipment. Bolt onto surface with mounting hardware. Bronze and copper body. Tin-plated for use on aluminum. Sizes for #6, #4, #2, #1/0 wire. Stainless steel mounting hardware kits available. CSA certified for direct burial.



GREAVES

CONTACT YOUR LOCAL DISTRIBUTOR
FOR PRICE AND AVAILABILITY

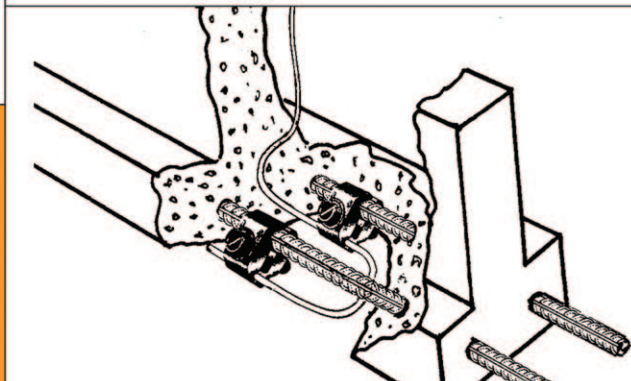
THE "JONES BOND" SYSTEM SOLVES BONDING & GROUNDING PROBLEMS

CONCRETE-ENCASED ELECTRODE: 'UFER' GROUND IN FOOTINGS AND PIERS

Code requires all "available" grounding electrodes to be bonded together to form a grounding electrode system (NEC 250); underground metal water pipe, metal frames of buildings, concrete-encased electrodes, ground rings, and "made" electrodes. The electrodes are to be connected together with a continuous bonding jumper or via the electrodes themselves. Concrete-encased reinforcing rods in footings or piers must always be used when available.

Many local codes require the concrete-encased electrode, or "Ufer ground", which is a 1/2 inch rebar or #4 bare copper wire at least 20 feet long located in the bottom of a concrete footing and encased by at least 2 inches of concrete. The rebar must be bare, galvanized, or otherwise conductively coated steel (must not be epoxy coated). Lengths of rebar may be connected together to complete the required length. A Ufer ground forms an excellent low-resistance grounding electrode because concrete absorbs moisture to create a conductive surrounding even in dry soil. Properly designed and installed systems virtually eliminate lightning problems in applications such as broadcast towers. It is best to bond all rebars together to optimize the total path to ground.

Connections to concrete-encased electrodes need not be "accessible". The grounding conductor must be copper (not aluminum) where in earth.

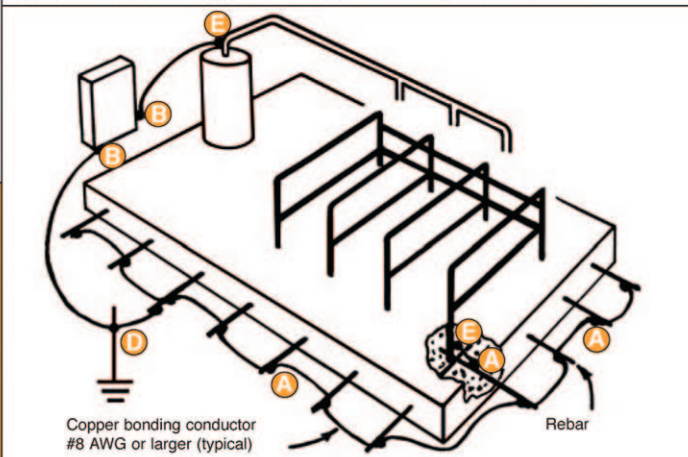


EQUIPOTENTIAL PLANE: BONDING IN LIVESTOCK BUILDINGS

In livestock buildings, stray (tingle) voltage can occur between electrical equipment, piping, or adjacent concrete slabs. Sources include voltage drop in a neutral conductor, and ground faults in pumps, fountains, feeders, or buried wires. Livestock behavioral problems such as decreased milk production can result, and electronic equipment can be adversely affected.

To prevent tingle voltage, create an 'equipotential plane' (NEC 547 and ASAE EP473). It consists of rebar, steel wire mesh, or copper wire in or under the concrete floors of indoor milking parlors and outdoor feedlots, bonded to metal equipment and piping, then connected to the grounding electrode system with #8 or larger copper wire. While most readily installed during construction, retrofit is possible with concrete overlay or grooving the concrete slab and embedding copper wires with mortar. A 'voltage gradient ramp' is also recommended at livestock entrances and exits, with ground rods installed at 45° with the high end at the building, bonded to the equipotential plane.

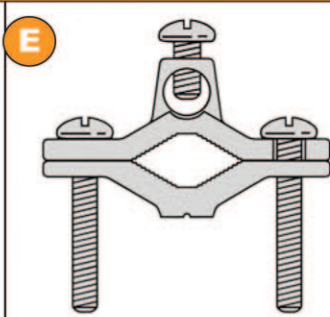
Corrosion resistant conductors and connectors (copper, bronze, or stainless steel) must be used due to the corrosive nature of agricultural cleaning chemicals, fertilizers, and manure.



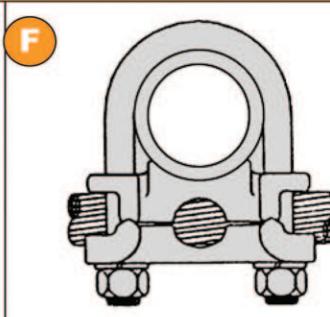
These direct burial connectors and stainless steel hardware kits complete the "Jones Bond" System



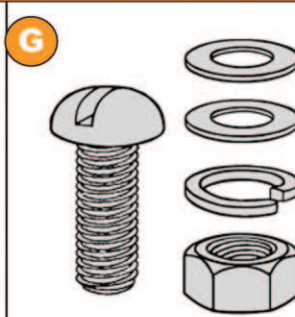
Ground Rod Clamps:
Connects CU conductor to ground rod.
Clamp fits over end of rod and wire feeds through the clamp. Bronze body and screw.
Sizes for 3/8 - 1" ground rod.
UL listed and CSA certified for direct burial.



Pipe clamps: Connects CU conductor to pipe.
Bronze body and screws.
Clamp fits over side of pipe. Conductor up to #2AWG feeds through clamp.
Sizes for 1/2 - 1" IPS and 1 1/4 - 2" IPS.
UL listed and CSA certified for direct burial



U-bolt clamps: Heavy-duty connection of CU conductor to pipe, ground rod, or fence.
Parallel or 90° configuration. Bronze with bronze hardware.
Sizes for 1/4-5" IPS and up to 500MCM.
CSA certified for direct burial.



Stainless Steel Hardware Kits: Machine screws, flat washers, lock washers, and nuts.
Mounts BTL-DB and BL lay-in lugs to equipment.
Sizes 10-24 and 1/4-20 in a selection of lengths.
Suitable for direct burial.

THE "JONES BOND" SYSTEM SOLVES BONDING & GROUNDING PROBLEMS

COMMON BONDING GRID: POOL/SPA/FOUNTAIN BONDING & GROUNDING

Bonding and grounding are two distinct functions; each has its own purpose. The two functions are accomplished with similar hardware and can be planned together.

Grounding provides a low resistance path to carry fault current to ground, thus preventing an electrical fault from threatening personnel.

Grounding requirements (NEC 680)

Code requires direct connection to a grounding electrode with green insulated grounding conductor run in conduit with supply conductors and terminating at an equipment grounding terminal. Items to be grounded include:

- Luminaires, underwater audio equipment
- Junction boxes and transformer enclosures
- GFCIs, panelboards, and transformers
- All electrical equipment in recirculating systems including pump motors
- All electrical equipment within 5 feet of the body of water

Bonding eliminates voltage gradients (which could be dangerous to personnel) by establishing a "common bonding grid" among metal parts.

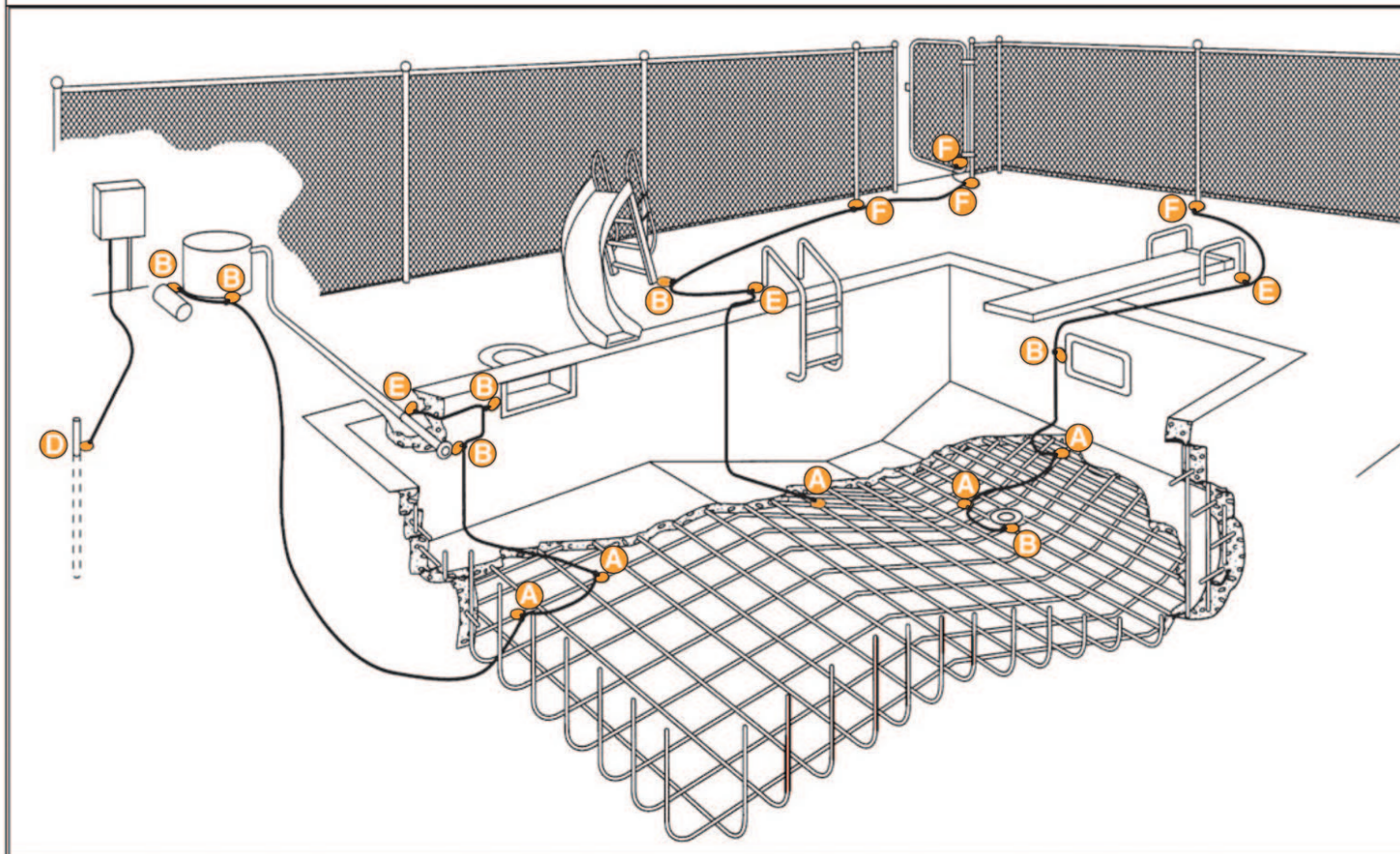
Common Bonding Grid requirements (NEC 680)

To form the common bonding grid, connect together with corrosion-resistant connectors:

- A grid of (a) rebar and/or steel mesh in concrete pool shell or deck, (b) metal pool walls (above-ground pools) and/or (c) #8 solid copper conductor loop
- Conductive surfaces within 5 feet horizontally of the pool
- Metal parts in the pool/spa environment
 - Luminaires, drains, skimmers, gratings
 - Ladders, slides, diving boards, railings
 - Circulation system: pump, filter, piping

The grid can be formed using these direct-burial rated connector types:

- Rebar-to-conductor and rebar-to-mesh – J-DB Jones Clamps
- Conductor-to-mesh and mesh-to-mesh – A-DB Mesh-Bugs
- Conductor-to-equipment/structure – BTL-DB Lay-in Lugs
- On aluminum equipment or pool structure, use tin-plated (-P) connectors
- Rebar-to-rebar – steel tiewire made-up tight



NOTE:  Refer to Pages 2 and 3 for product description.

Local authority governs all installation requirements

CONTACT YOUR LOCAL DISTRIBUTOR FOR PRICE AND AVAILABILITY



GREAVES

Clinton, CT 06413
Phone: 860-664-4505 Fax: 860-664-4546
www.greaves-usa.com