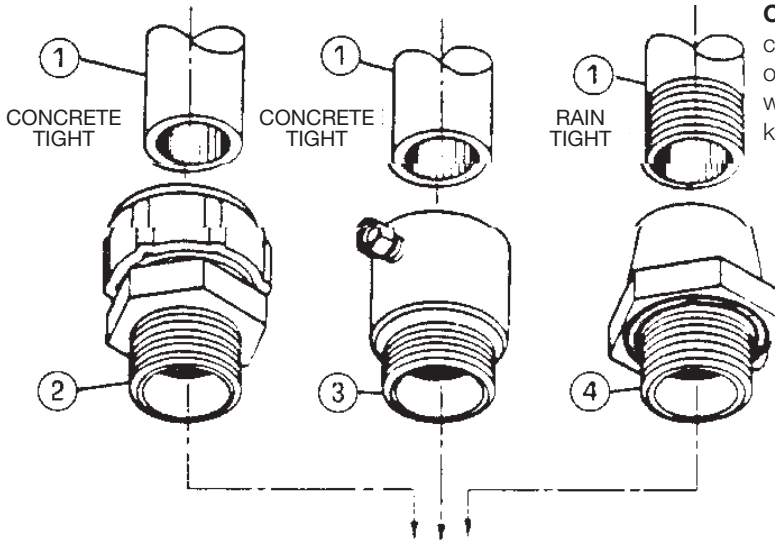


T&B Conduit Fittings

Rigid and Intermediate Metal Conduit Fittings

Methods of Bonding and Grounding



Case 1: Where threaded or threadless conduit terminates into a threadless opening in a sheet metal box or enclosure with or without concentric or eccentric knockouts.

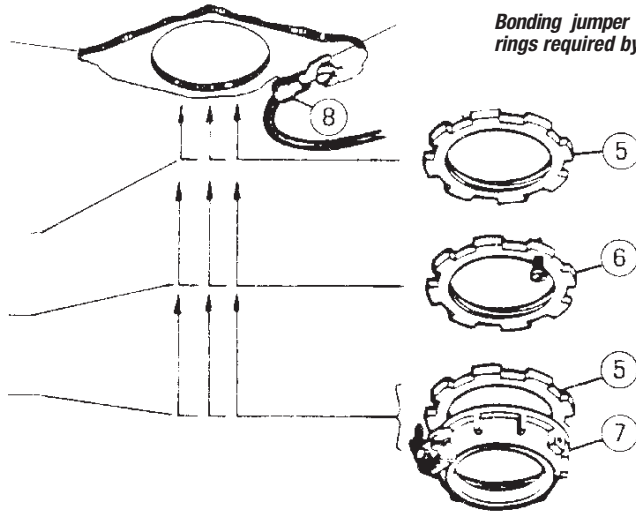
Threadless opening in a sheet metal box or enclosure.

Method of Bonding

For 120/208 volts or 120/240 volts circuits provided no unpunched rings remain around the knockout.

For under or over 250 volts circuits, service equipment and hazardous locations (where applicable) provided no unpunched rings remain around the knockout.

For under or over 250 volts circuits, service equipment and hazardous locations (where applicable) with or without unpunched rings around the knockout.



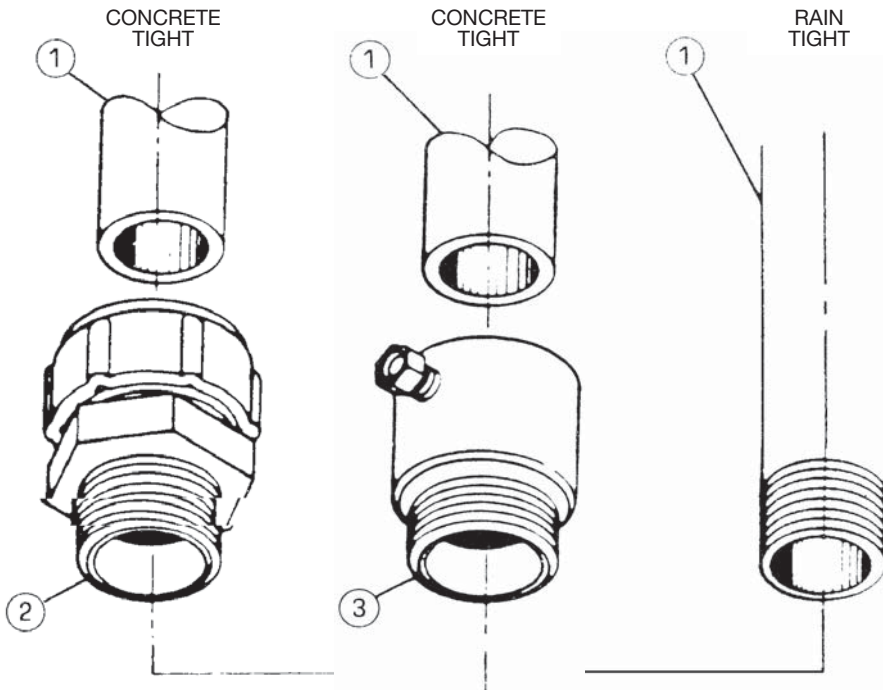
Bonding jumper around concentric or eccentric rings required by CEC Rule 10-614

- (1) Threaded or threadless rigid metal conduit or intermediate metal conduit
- (2) T&B Series 8123 or 8124 Threadless Fittings
- (3) T&B Series 8125 Set Screw Fitting
- (4) T&B Series 370 or H050-TB Sealing Hub (Bullet® Hubs)
- (5) T&B Series 140 Locknuts
- (6) T&B Series 106 Bonding Locknut
- (7) T&B Series 3870 Bonding & Grounding Bushing
- (8) T&B Sta-Kon® or Color-Keyed® lug

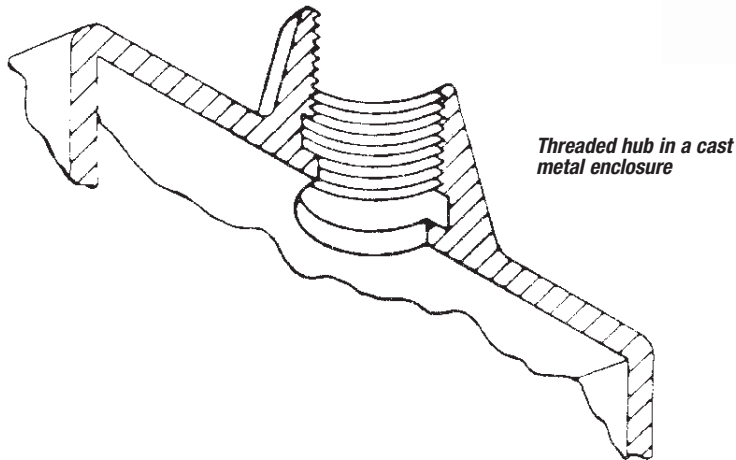
T&B Conduit Fittings

Rigid and Intermediate Metal Conduit Fittings

Methods of Bonding and Grounding (continued)



Case 2: Where threaded or threadless conduit terminates into a threaded hub in a cast metal enclosure.



Methods of Bonding

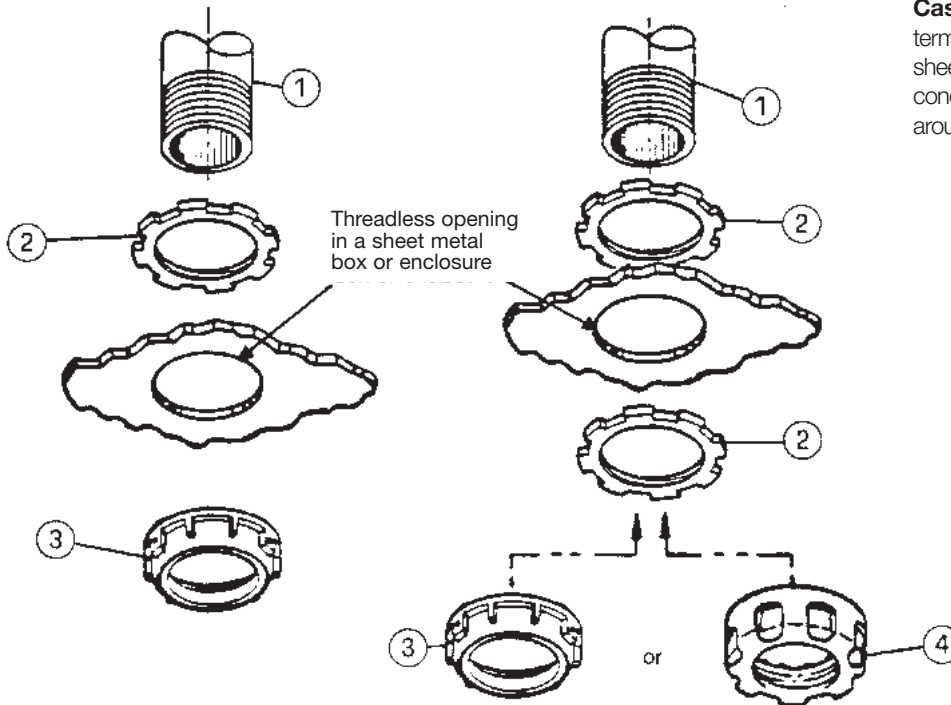
- For (1) 120/208 or 120/240 volts circuits (CEC 10-610)
- (2) Over 250 volts circuits (CEC 10-610)
 - (3) Service equipment (CEC 10-604)
 - (4) Hazardous Locations 18-074 (where applicable)
 - 18-124 (Class I, Zone 1)
 - 18-160 (Class I, Zone 2)
 - 18-218 (Class II, Division 1)
 - 18-268 (Class II, Division 2)
 - 18-316 (Class III, Division 1)
 - 18-366 (Class III, Division 2)

- (1) Threaded or threadless rigid metal conduit or intermediate metal conduit.
- (2) T&B Series 8123 Threadless Fitting
- (3) T&B Series 8125 Set Screw Fitting

T&B Conduit Fittings

Rigid and Intermediate Metal Conduit Fittings

Methods of Bonding and Grounding (continued)



Case 3: Where threaded conduit terminates into a threadless opening in a sheet metal box or enclosure with no concentric or eccentric rings remaining around knockout.

Method of bonding for 120/208 volt or 120/240 volts circuits (other than service equipment).

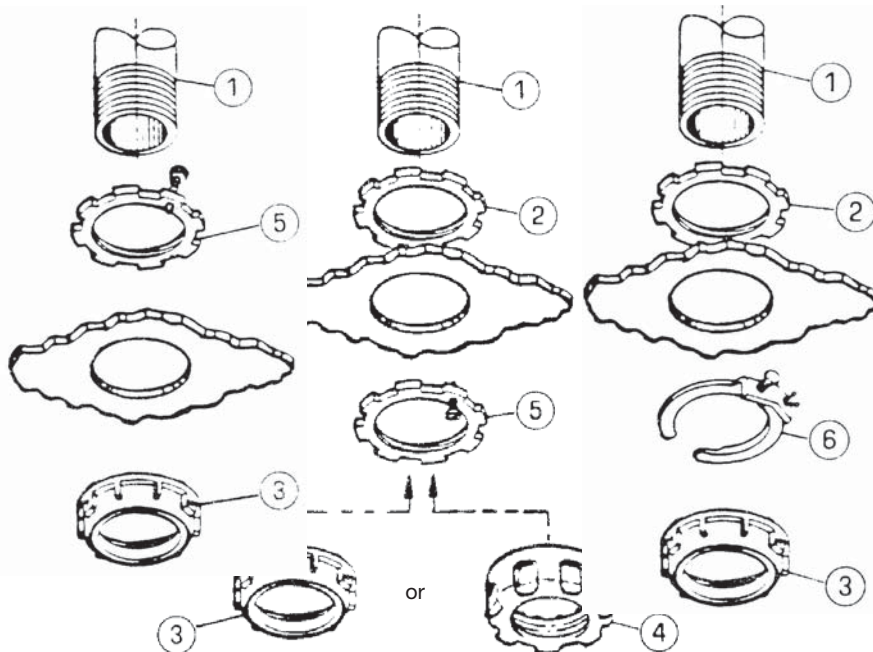
Method of bonding for over 250 volts circuits e.g. 600/347 volt systems and those operating over 600 volts (other than service equipment).

Note: Any of the bonding methods described for service equipment may also be used.

T&B Conduit Fittings

Rigid and Intermediate Metal Conduit Fittings

Methods of Bonding and Grounding (continued)



Case 3: (cont'd) Where threaded conduit terminates into a threadless opening in a sheet metal box or enclosure with no concentric or eccentric rings remaining around knockout.

- (1) Threaded rigid metal conduit or intermediate metal conduit
- (2) T&B Series 142 Locknuts
- (3) T&B Series 122 Bushing Metallic
- (4) T&B Series 222 Bushing Plastic
- (5) T&B Series 106 Bonding Locknut
- (6) T&B Series 3650 Bonding Wedge

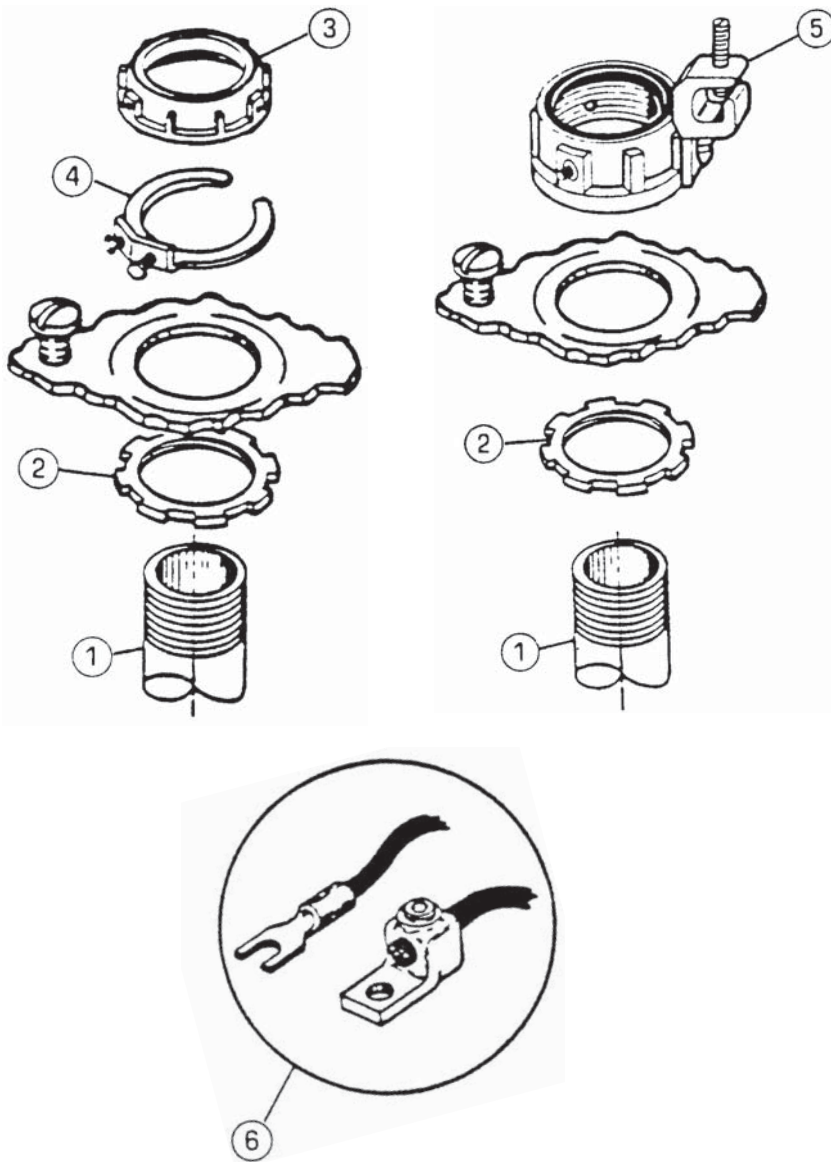
Method of Bonding

- For (i) Over 250-volts circuit e.g. 347/600-volts systems and those operating over 600 volts
 (ii) Service equipment
 (iii) Hazardous locations where applicable

T&B Conduit Fittings

Rigid and Intermediate Metal Conduit Fittings

Methods of Bonding and Grounding (continued)



Case 4: Where threaded conduit terminates into a threadless opening in a sheet metal box or enclosure with concentric or eccentric rings remaining around knockout.

Methods of bonding for under or over 250-volts, for service equipment and for hazardous locations where applicable.

Note: Bonding jumper required by CEC Rule 10-614

- (1) Threaded rigid metal conduit or intermediate metal conduit
- (2) T&B Series 142 Locknuts
- (3) T&B Series 122 Bushing, Metallic
- (4) T&B Series 3650 Bonding Wedge
- (5) T&B Series 3870 Bonding & Grounding Bushing
- (6) T&B Typical Mechanical or Pressure Type Fitting

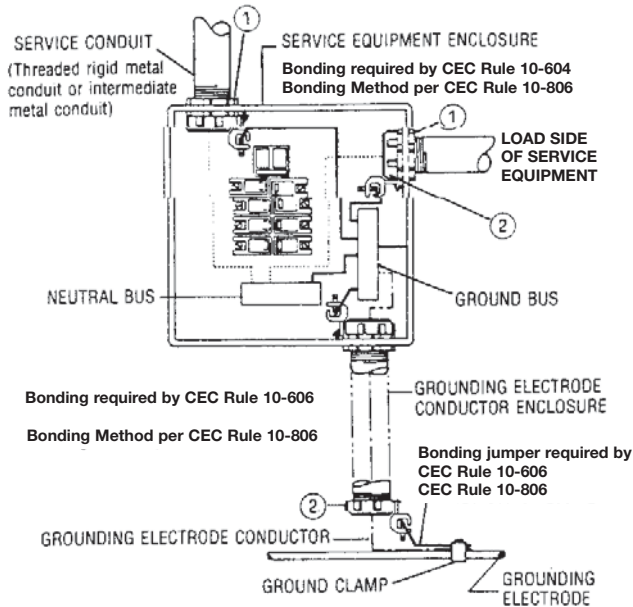
Note: For raintight applications, a sealing ring, T&B Series 5302, may be used between outside of box or enclosure and the outside locknut.

T&B Conduit Fittings

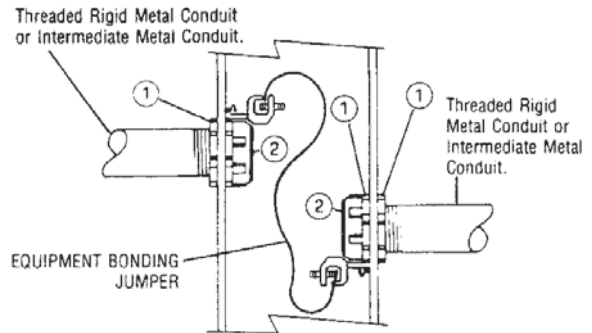
Rigid and Intermediate Metal Conduit Fittings

Methods of Bonding and Grounding (continued) — Typical Installation Using Bonding and Grounding Bushings

Bonding Service Equipment (CEC Rule 10-604)

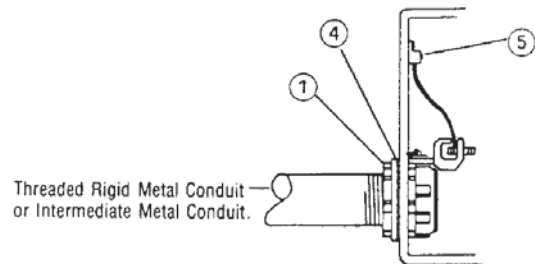
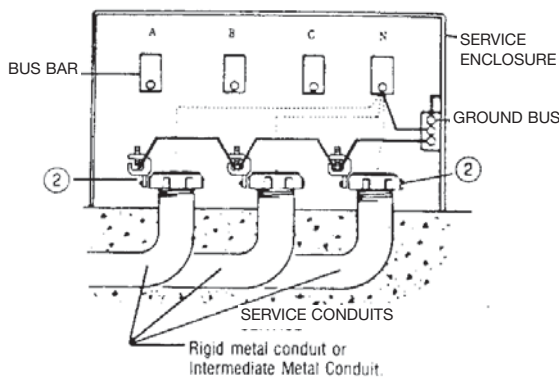


Install Bonding Jumper to Assure Electrical Continuity Between Isolated Sections of Raceways (CEC Rule 10-614)



- (i) Installing bonding jumper around unpunched concentric or eccentric knockouts in sheet metal box or enclosure [CEC Rule 10-806].
- (ii) Installing bonding jumper in hazardous locations where 'locknut bushing' or 'double locknut' type of contact is unacceptable method for bonding purposes [CEC Rule 18-074]

Multiple Bonding of Service Raceways Where Service Entrance Conductors are Paralleled in Two or More Raceways, CEC Rule 10-614



- 1 T&B Series 142 Locknut
- 2 T&B Series 3870 Bonding & Grounding Bushing (Threaded)
- 3 T&B Series 5262 Sealing "O" Ring
- 4 T&B Typical Bolted or Pressure Lug

Suggested Specifications

Insulated grounding and bonding bushing (Series 3870)

Where code requires bonding and grounding of single or multiple metal conduits, or positive bonding and grounding of metal conduit to the box, enclosure or auxiliary gutter, the end of the conduit shall be equipped with an insulated metallic grounding and bonding bushing such as Series 3870 manufactured by Thomas & Betts.

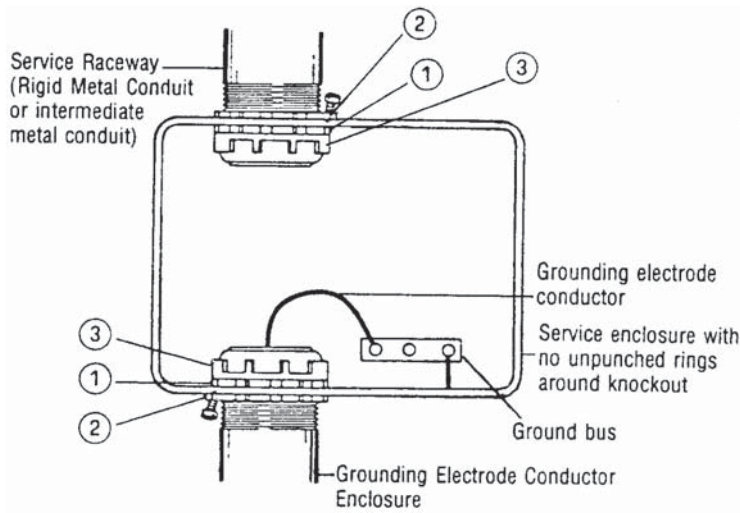
Grounding and bonding bushings used shall be approved for the purpose and

- (i) Shall be of malleable iron/steel/aluminum construction adequately protected against corrosion.
- (ii) Bushing insulator shall be listed or certified for 150°C/302°F application with a flammability rating of 94V-O. Insulator must be positively locked in place.

T&B Conduit Fittings

Rigid and Intermediate Metal Conduit Fittings

Methods of Bonding and Grounding (continued)— Typical Installation Using Thomas & Betts Bonding locknut



- (1) T&B Series 142 Locknut
- (2) T&B Series 106 Bonding Locknuts
- (3) T&B Series 122 Bushing

Suitable for Bonding Raceway, EMT or Terminating Fitting to a sheet metal box or enclosure where

- (a) No unpunched concentric or eccentric rings remain around the knockout.
- (b) Ordinary locknut is unacceptable for bonding purposes such as
 - (i) Service Equipment Enclosures CEC Rule 10-614
 - (ii) Bonding for circuits over 250 volts (where required) CEC Rule 10-614
 - (iii) Bonding in Hazardous Locations regardless of the voltage of the system CEC Rule 18-074

Suggested Specifications

Bonding Type Locknut (Series 106)

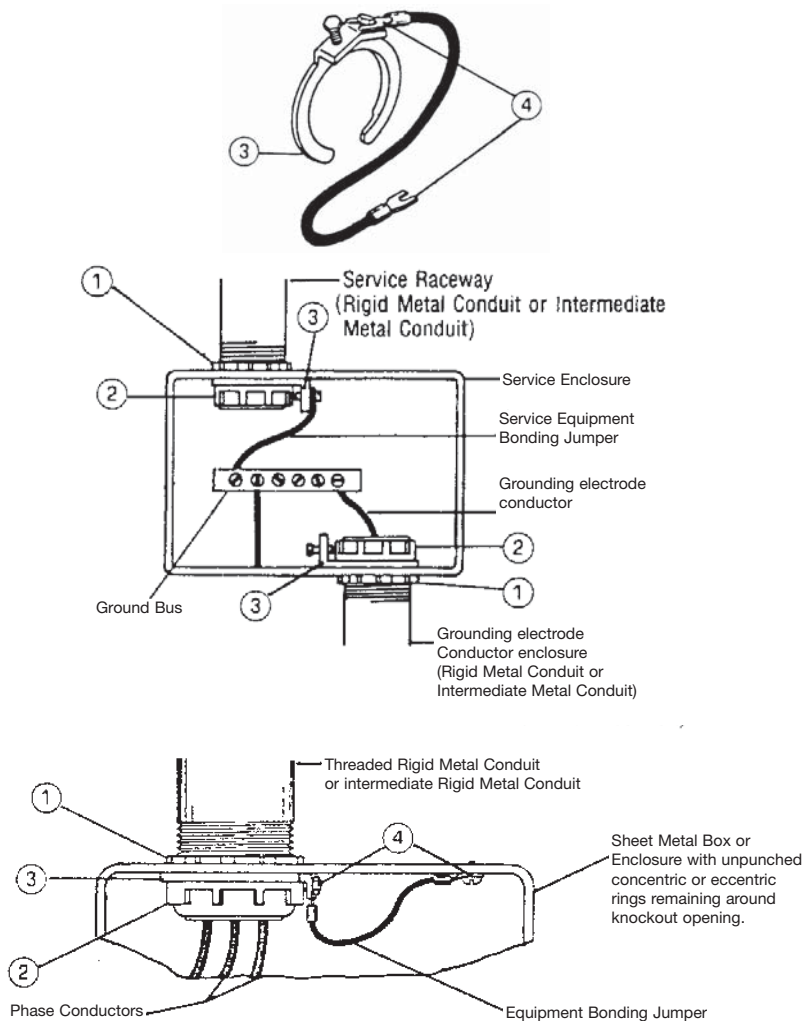
Where drawings indicate installation of a bonding type locknut to effectively bond a terminating fitting or metal conduit to a cabinet, box, enclosure or an auxiliary gutter, the locknuts installed shall be of hardened steel/malleable iron construction, electro-zinc plated, such as Series 106 manufactured by Thomas & Betts.

T&B Conduit Fittings

Rigid and Intermediate Metal Conduit Fittings

Methods of Bonding and Grounding (continued)— Typical Installations Using Thomas & Betts Bonding and Grounding Wedge

**T&B Series 3651
Bonding & Grounding Wedge**



- (1) T&B Series 142 Locknut
- (2) T&B Series 122 Metallic Bushing
- (3) T&B Series 3651 Bonding & Grounding Wedge
- (4) T&B Pressure (crimp type) Terminal Lug.

Acceptable Method for Bonding Following

- (i) Service Equipment
CEC Rule 10-614
- (ii) Bonding for Circuits over 250 volts
CEC Rule 10-614
- (iii) Bonding in Hazardous Locations
CEC Rule 18-074

When installed with a bonding jumper, acceptable method of bonding where unpunched rings remain around concentric or eccentric knockouts in sheet metal boxes or enclosures. [CEC Rule 10-614].

Suggested Specifications

Bonding and Grounding Wedge (Series 3650)

Bonding and Grounding Wedges installed to effectively bond terminating fitting or metal conduit to a cabinet, box, enclosure or an auxiliary gutter or to install bonding jumper around concentric or eccentric knockouts shall be of the type as manufactured by Thomas & Betts—Series 3650.

Bonding and Grounding Wedge shall be of rugged bronze/tin plated or steel/electro-zinc plated.