Bending of Straight Copper Terminals

Brazed joint

Position of tongue before bending

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Terminal Strips

- Barriers to prevent adjacent studs from contacting each other
- Current should be carried by terminal contact surface and not by stud
- Studs anchored against rotation
- Replace defective studs with studs of same size and material, mount securely, tighten terminal securing nut
Mount strips so loose metallic objects cannot fall across terminal

- Provide spare stud for breaks and future expansion
- Inspect terminal periodically for loose connections, metallic objects, dirt, and grease accumulation
  - Can cause arcing, resulting in fire or systems failure
Terminals on circuit breakers
Power feeder terminals
Terminal Lugs

▷ Connect wiring to terminal block studs
▷ No more than 4 lugs, or 3 lugs and a bus bar, per stud
▷ Lug hole size should match stud diameter
  ◦ Greatest diameter on bottom, smallest on top
  ◦ Tightening terminal connections should not deform lugs
Terminal Lugs, cont.

✈ Aluminum lugs

- Crimped to aluminum wire only
  - Special attention needed to guard against excessive voltage drop at terminal junction
    • Inadequate terminal contact area
    • Stacking errors
    • Improper torquing

- Use calibrated crimp tools
Terminal Stacking (like materials)
Terminal Stacking (unlike materials)

- Copper terminal
- Flat washers
- Terminal stud
- Nut
- Lock washer
- Flat washer
- Aluminum terminals
Terminal Stacking Methods

One-Sided Entry With Two Terminals

- Nut
- Lock washer
- Flat washer
- Crimp barrel (belly up)
- Crimp barrel (belly down)
Terminal Stacking Methods, cont.

One-Sided Entry With 3 Terminals

Crimp barrel (belly down) in “V” split

Crimp barrel (belly up) in center of “V”

Nut

Lock washer

Flat washer

Terminal Stacking Methods, cont.
Terminal Stacking Methods, cont.

One-Sided Entry With 4 Terminals

- Nut
- Lock washer
- Flat washer
- Crimp barrel (belly up) in “V” split
- Crimp barrel (belly down) in “V” split
Terminal Tightening Hardware

Incorrect

Space

Nut

Lock washer
Flat washer

Correct

Lock washer not compressed

Lock washer compressed

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Washer Size Selection

- Improperly-sized washer
- Raised portion of terminal
- Non-self locking nut
- Steel washers
- Correct
- Split lock washer
- Aluminum terminal

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Example: Terminal Stacking

To prevent corrosion from dissimilar metals, put a cadmium washer between aluminum and copper terminals.