CONTINUITY TESTING

Testing for a continuous circuit
Verifying the wiring makes a complete, uninterrupted circuit
What you should **NOT** do!

- Energize the panel with:
  - Extension cord
  - Temporary wiring with line voltage
  - Anything above 50V

- Violate NFPA 70E Rules
What you should do!

- Use a meter or other approved power source
  - Multimeters
  - Continuity testers
  - Anything below 50V (batteries, etc.)
Continuity Testing

Just follow these steps...
Before you begin...

System must be **DE-ENERGIZED**
from normal utility line voltage

Disconnect the power supply

**This is a MUST!!!**

**WHY?**

- When working with electricity of 50V or more...
  - Potential for injury is greatly increased
  - Compliance with safety standards of NFPA 70E and OSHA is required
  - Damage to equipment or tester/meter is possible
Step 1 | Test the continuity tester

• Touch clamps together to verify proper operation
  – Light will illuminate
  – Buzzer will sound
Step 2 | Connect the tester

- At the panel
  - Verify all breakers are in the OFF position
  - Place red clamp on either phase, A or B, lug or buss
  - Place black clamp on neutral bar (for hot to neutral test)
    or
  - Place black clamp on ground bar (for hot to equipment ground test)
Step 3 | Choose a circuit

• Identify a circuit on the selected phase to be tested
Step 4 | Verify taps are made

- Ensure all taps are made to complete the selected circuit on its return path by verifying
  - Pigtails are capped off or isolated
  - Wire nuts are tight
Step 5 | Close the circuit

- At the panel, move breaker handle for selected circuit to the ON position
Step 6 | Test the circuit

- At all dead ends of the circuit, touch grounded (neutral) and ungrounded (hot) conductors together
  - Repeat for hot to equipment ground test
  - Connect switch wires to verify operation of switch legs

- Tester will light up and make a tone to indicate continuity
If no continuity...

- Check individual runs of wire between boxes in circuit for continuity until break is isolated
- Repair and retest for continuity
Step 7 | Open the circuit

- At the panel, move breaker handle for selected circuit back to the OFF position
Repeat for all circuits

- Repeat steps 3-7 for each circuit on the selected phase
- Switch to next phase and test
  - Move red clamp to opposite phase’s lug or buss
  - Repeat step 3-7 for each circuit on that phase
Continuity Tester Use and Care

• Do not connect to energized circuits
• Do not carry by the cord or wires
• Replace batteries often
• Protect from damage and theft
Questions???

For any questions regarding continuity testers or safe continuity testing procedures...

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