

# Multiwire Branch Circuits

NEC 210.4

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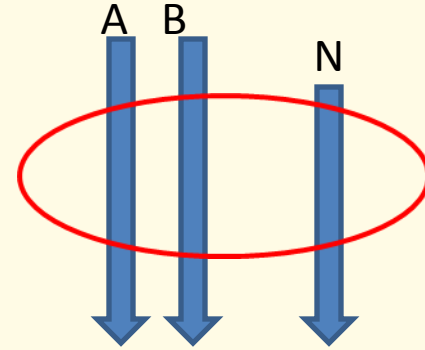
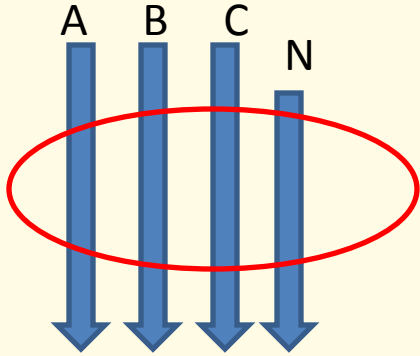
**Multiwire branch circuits can be dangerous when not all the ungrounded circuit conductors are de-energized and equipment supplied from a multiwire circuit is being serviced.** For this reason, all ungrounded conductors of a multiwire branch circuit must be simultaneously disconnected to reduce the risk of shock to personnel working on equipment supplied by a multiwire branch circuit

(A) General. Branch circuits recognized by this article shall be permitted as multiwire circuits. A multiwire circuit shall be permitted to be considered as multiple circuits. All conductors of a multiwire branch circuit shall originate from the same panelboard or similar distribution equipment.

(B) Disconnecting Means. Each multiwire branch circuit shall be provided with a means that will simultaneously disconnect all ungrounded conductors at the point where the branch circuit originates.

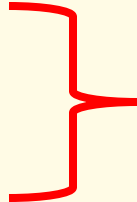
(D) Grouping. The ungrounded and grounded conductors of each multiwire branch circuit shall be grouped by wire ties or similar means in at least one location within the panelboard or other point of origination.

## Shared Neutrals



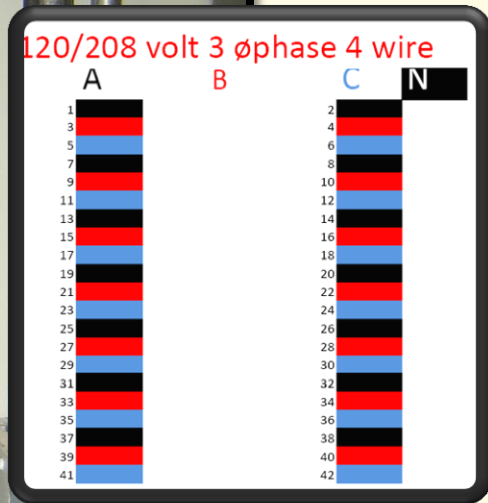
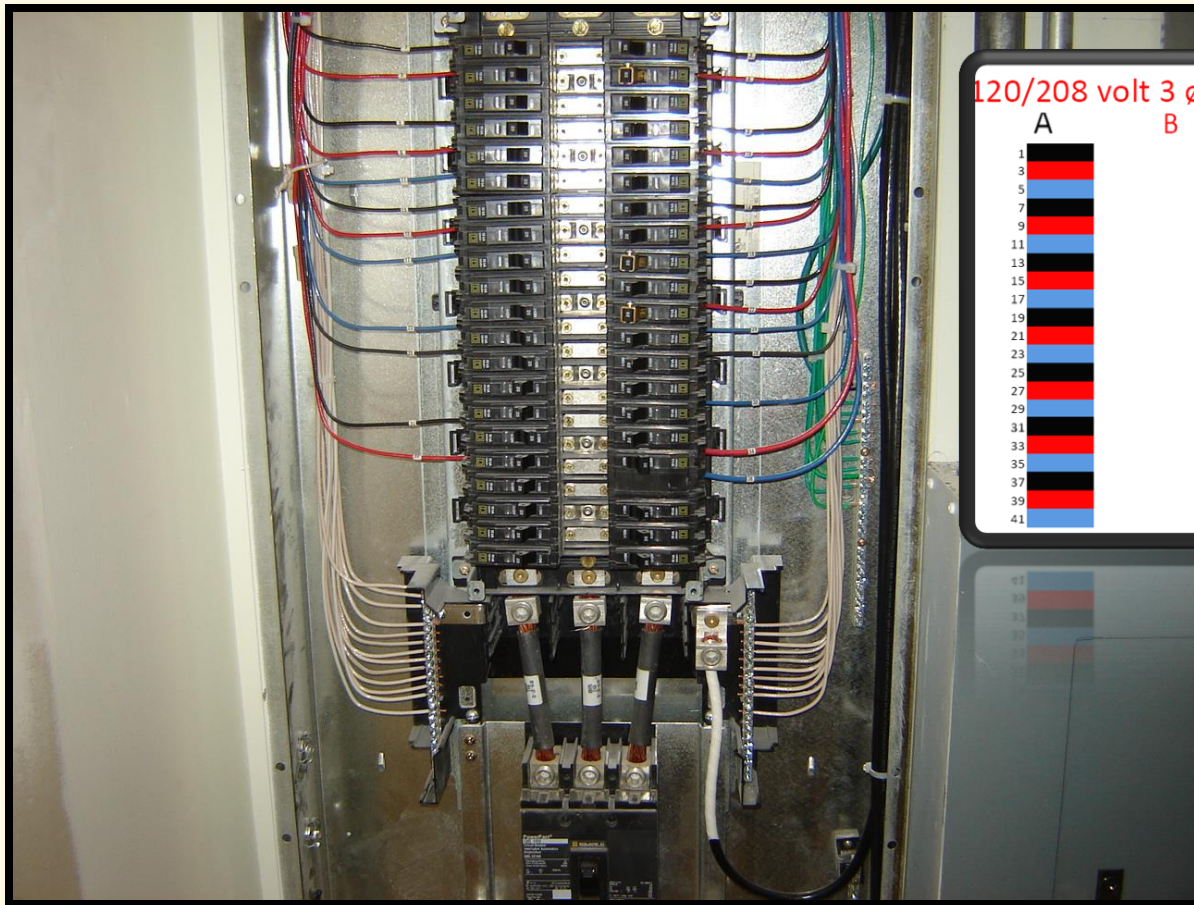
On a 3PH pnl you can share 1 net

On a 1 ph pnl you can share a net



(C) Line-to-Neutral Loads. Multiwire branch circuits shall supply only line-to-neutral loads.

ie: lighting, outlets



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210.4(B) requires the simultaneous disconnection of all ungrounded conductors to multiwire branch circuits supplying more than one device or equipment





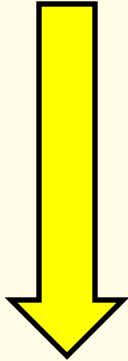
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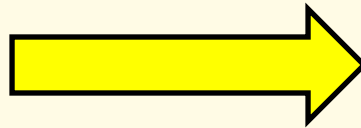
Thanks for watching!!

2008 Code Nec 210.4 (a) (c) (b) (d)

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