

## Dead-Leg Adapters and Copper Bar Links

### Distribution Company Awareness

In “half power” situations (one leg of a 120/240 volt service is dead), where an Electrical Distributor installs an approved dead-leg adapter or approved copper bar links, overheating can occur in the neutral wire supplying customers’ split receptacles.

### Introduction

Dead-leg adapters (example Figure 1 below) allow the resumption of temporary service in “half power” situations. Some Electrical Distributors achieve this by using approved copper bar links (Figure 2 and 3 below) however the same issue is created as there is no longer a 180 degree phase difference.

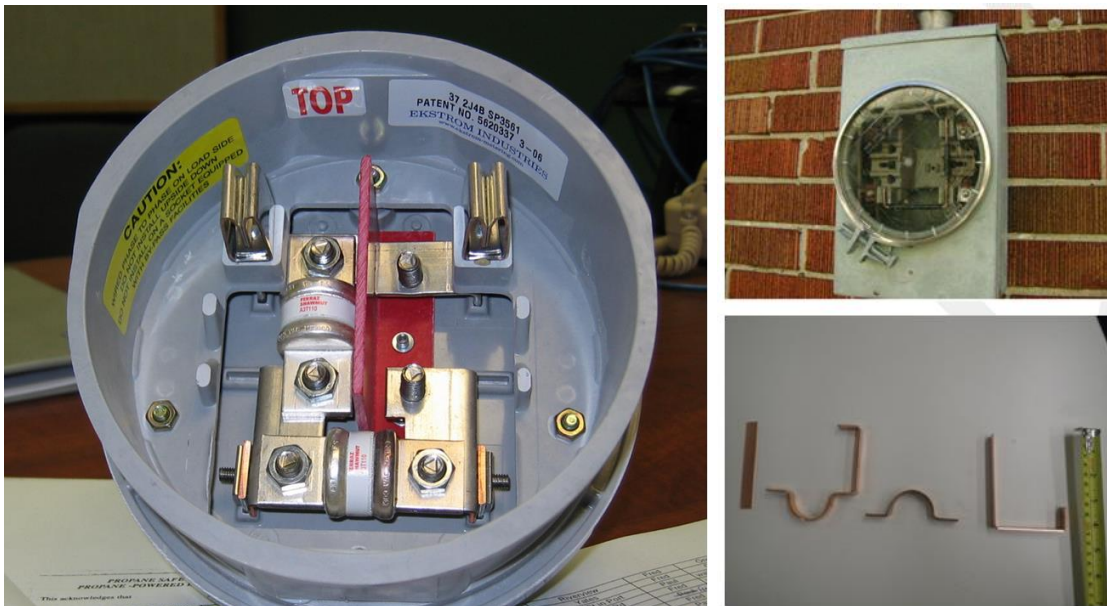


Figure 1 (Left), Figure 2 (Top Right), Figure 3 (Bottom Right)

Split receptacles (example Figure 4 below) are allowed by the Ontario Electrical Safety Code (OESC) to be installed in kitchens. Under normal operating conditions, the two outlets of a split receptacle are fed by opposite hot legs of the 120/240 volt service (180 degree phase difference). The total current in the neutral wire is the difference of the currents in the hot legs. However, when using either an approved dead-leg adapter or approved copper bar links, the total current in a split receptacle’s neutral wire becomes the sum of both hot leg currents. This current may potentially exceed the ampacity of the split receptacle’s neutral wire, creating a fire hazard.

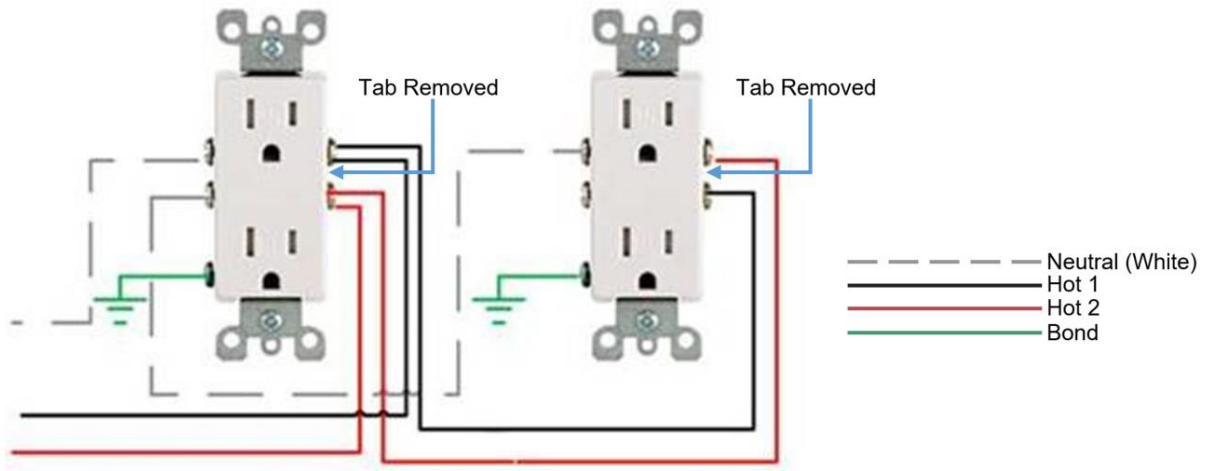


Figure 4

## ESA Recommends

When using Electrical Distributor's approved methods that eliminates the 180 degree phase difference, the Electrical Distributor should advise the customer to only plug in and use one appliance at a time in kitchen receptacles.