



Facilities Services

Modular Workstation Electrical Wiring Design Guidelines

Summary:

Changes in our office workstation equipment and usage necessitates changes in our workstation electrical wiring policy. The previous design guideline of three modular furniture workstations served by one 20-amp general purpose electrical circuit is still in place, provided this circuit only serves the computers, display monitors, light fixtures, and 110V/USB charging combo receptacles. The motorized height adjustable table (HAT) mechanism will be supplied by electrical circuits which are separate from the electrical circuits serving the other equipment in the cubicle. The maximum quantity of motorized HATs (two or three leg) will be limited to four per electrical circuit. For the purposes of this document a separate circuit will consist of one hot conductor and one neutral conductor. The workstations may share ground conductors with the motorized HAT mechanism, but they cannot share hot conductors or neutral conductors with the motorized HAT mechanism.

Details: (See diagrams below for identification of referenced items.)

Standard Modular Workstations:

- Each includes one computer / docking station, two monitors, light fixtures, 110V/USB charging combo receptacles
 - Three (maximum) workstations connected to one Hot Circuit Conductor (A, B, or C)
 - Receptacle Type a, b, or c
 - All connected to Neutral Conductor #1
 - All connected to the Common Ground Conductor G1

Motorized Height Adjustable Table (HAT):

- Each includes DC motors connected to an AC/DC power supply
 - Four (maximum) HATs connected to one Hot Circuit Conductor (C or D)
 - Receptacle Type c▲, d▲, or d
 - All connected to Neutral Conductor #2.
 - Type d receptacle connected to the Common Ground Conductor G1, c▲ and d▲ receptacles connected to the Isolated Ground Conductor G2

Printers:

- Desktop and floor-mount (MFP) type
 - Printers utilizing more than 5 amps @120 volts should not share electrical circuits (or power poles) with the modular workstation wiring harnesses.



- One printer utilizing 5 amps or less @120 volts may share the same isolated circuit as three motorized sit-to-stand worksurfaces on the modular workstation wiring harnesses.

Note: Our standard modular furniture (Herman Miller Action Office 2) has an 8-wire harness which includes four load line conductors, two neutral conductors, and two ground conductors. Herman Miller uses the term “isolated circuit” in its schematics and narratives so this arrangement can coordinate with an isolated circuit at a facility. We will typically not provide an isolated circuit at our facilities, but we will use these terms to coordinate our discussion with the product documentation. The receptacles are mechanically attached to the electrical distribution assembly. The receptacles are internally arranged so they plug into the circuitry of the wiring harness in a configuration designated by the label on its faceplate.

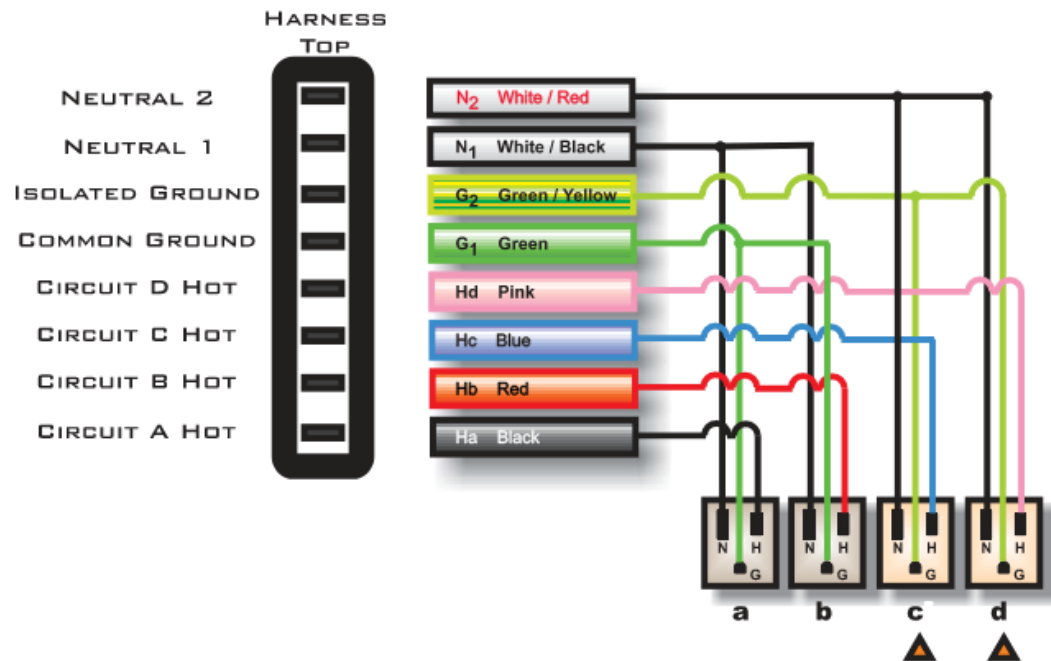
Configurations:

The optimal design approach for new shared workstation installations with HATs, will include two groups of three modular furniture workstations (pod of six) on a single electrical power whip (pole or wall outlet) connected to a pair of two pole breakers. The arrangement will resemble the 2+2 Harness & Receptacle Wiring Diagram. Each group of three workstations will be connected to one general purpose circuit utilizing either the “a” or “b” type receptacles. The three motorized HATs in each group will be plugged into one isolated circuit utilizing either the c▲ or d▲ type receptacles. Because only three motorized HATs are on each isolated circuit, a desktop printer utilizing 5 amps or less at 120V may also be added to each of the two isolated circuits.

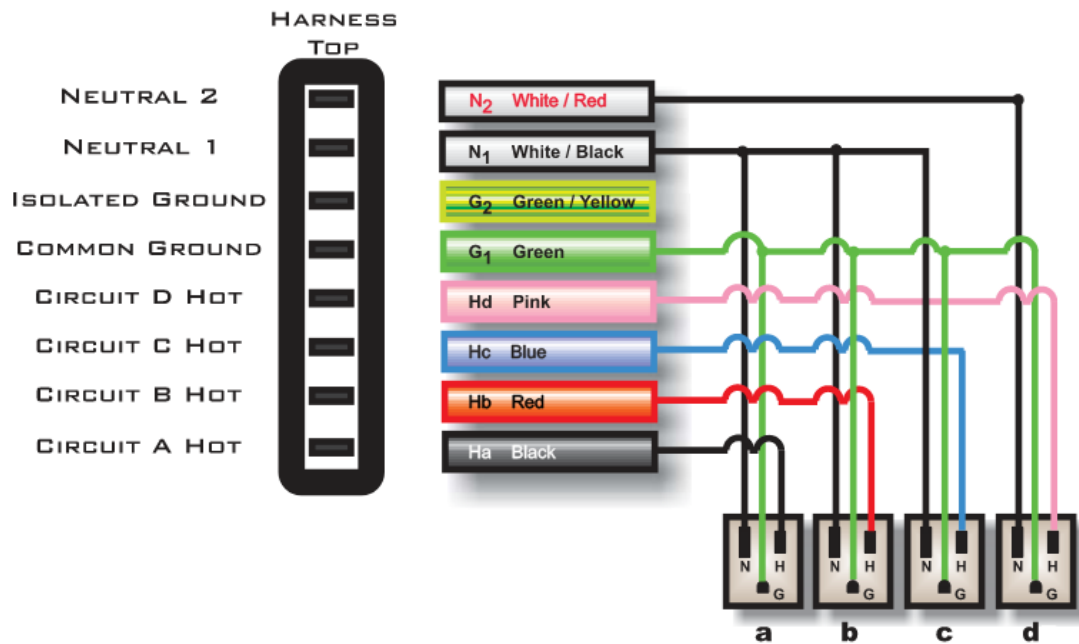
A group of less than six modular furniture workstations will typically be provided with an electrical power whip capable of serving six modular furniture workstations, unless circuit breaker space or panel capacity is limited.

The design approach for a group of existing workstations will need to be determined following an assessment of the electrical harness arrangements, receptacle types, and branch circuit configurations. After completion of the assessment, the electrical designer can recommend a preferred approach to the electrical wiring within and to the workstations to accommodate the addition of HAT mechanisms. The electrical designer may be an electrical contractor, a consultant, or inhouse designer.

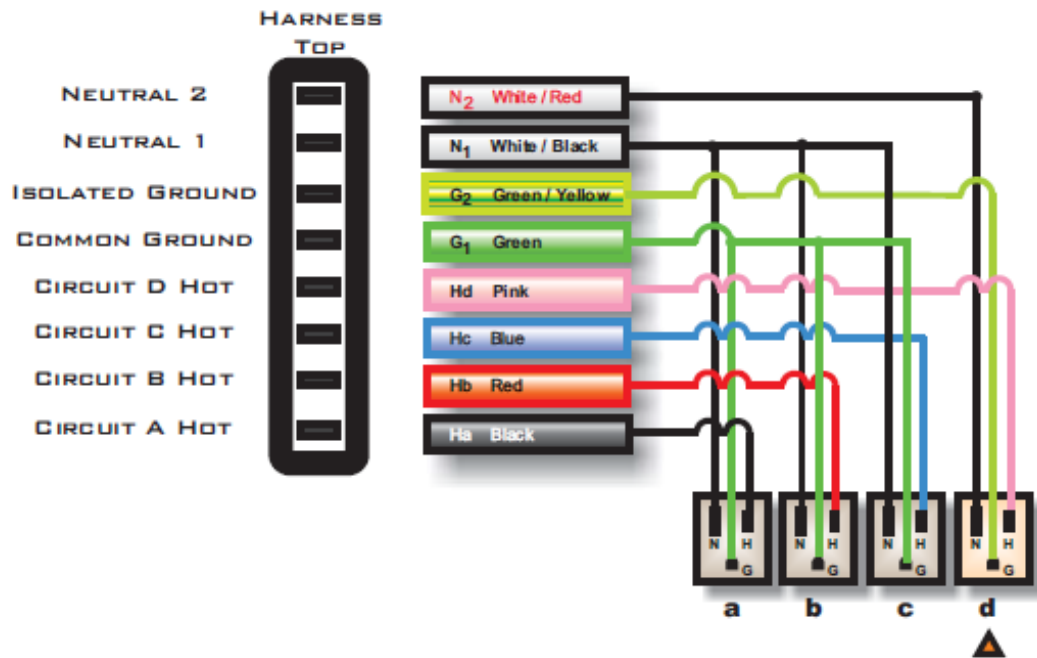
Harness & Receptacle Wiring Diagrams:



2 GENERAL PURPOSE + 2 ISOLATED CIRCUITS



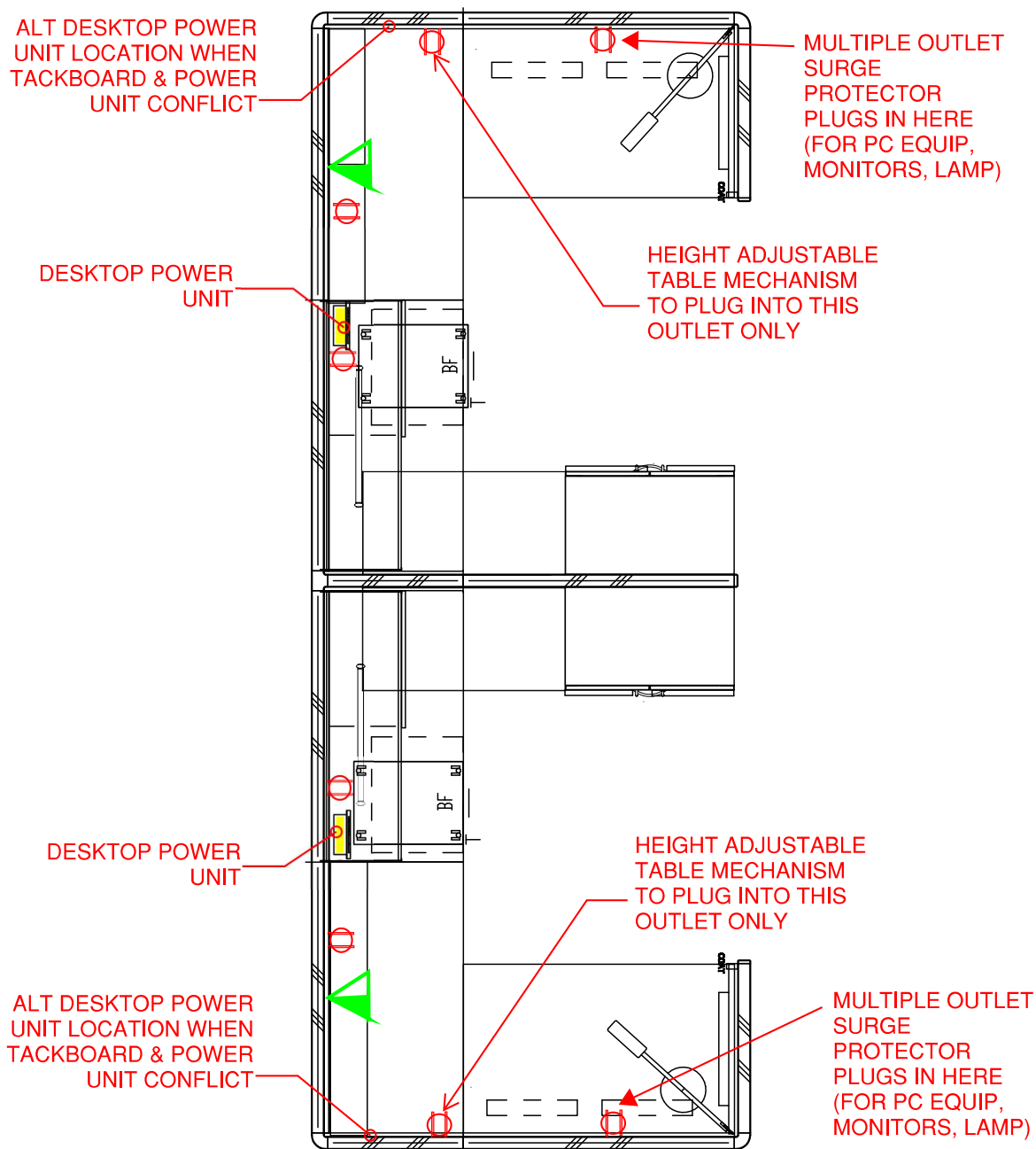
4 GENERAL PURPOSE CIRCUITS



Workstation Configuration Example:

PLAN #1: RECEPTACLE
PLACEMENT PLAN

DATA, TYP + 15'-0"
PATCH CORD



**WORKSTATIONS-
POWER & DATA PLAN**

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