

**WARNING: Failure to follow may cause unexpected behavior of the treadmill or other machine malfunctions.**

### Domestic United States 110-Volt Treadmill Applications

Freemotion treadmills require an individual branch circuit using an Isolated Ground Receptacle. The hot, neutral, and ground wires must each be independently isolated (not looped or tied to other circuits).



ISOLATED GROUND  
RECEPTACLE

### International 220-Volt Treadmill Applications

Freemotion treadmills require an individual branch circuit using an NEMA 6-20R Receptacle. The hot, neutral, and ground wires must each be independently isolated (not looped or tied to other circuits).



NEMA 6-20R

### US and Canadian Electrical Applications

- Do not modify the plug provided with this product. If it will not fit your electrical outlet, have a proper outlet installed by a qualified electrician.
- Electrical supply may fluctuate in your area. To ensure stable performance if the product we require the following wiring gauges based on the distance between the single treadmill and the panel: 100' = 10 Gauge, 150' = 8 Gauge, 200' = 6 Gauge.

When designing a facility or installing new Freemotion equipment into a facility, it is important to have the correct electrical power provisions in order for the equipment to operate safely and properly. Each treadmill must be furnished with an Individual Branch Circuit. Circuits for 100-Volt models must include a 20-amp circuit breaker and individual 20-amp isolated ground receptacles for each treadmill. Circuits for 220-Volt must include a 15-amp circuit breaker and individual 15-amp isolated ground receptacles for each treadmill. The NEC requires that each outlet have dedicated conductors of at least 12 AWG for line, neutral and ground for 20-amp service. Larger conductors (10 AWG) may be required for long branch circuits or high temperatures to prevent voltage drop. Dedicated outlets must not share line, neutral or ground conductors with other outlets. This means that a single breaker, one hot wire, one neutral wire, and one ground wire are connected from the panel to a single electrical load, in this case, 1 treadmill.

**ALL CIRCUITS FOR TREADMILLS SHOULD NOT SHARE A NEUTRAL GROUND.** Each neutral wire and each ground wire should be tied back to the panel directly. This should help to avoid 3 problems commonly experienced:

- **Overloading the Circuit Breaker** – With only one treadmill connected to a single circuit breaker in the electrical panel, the smaller circuit breaker in the treadmill will trip first if there is an over-current situation due to abnormal treadmill operation. If more than one treadmill is wired to the same panel breaker, the additional current requirements may frequently overload and trip the panel breaker, even though the treadmills are operating normally.
- **Overloading the Neutral Wire** – If there are multiple treadmills connected to the same neutral wire, even if each hot conductor is wired to separate breakers, there is a risk of overloading the neutral wire, possibly resulting in a dangerous situation (could overheat and cause a fire) and/or more commonly, low voltage at the outlet. As a result of the low voltage the amperage (AMPS) goes up to keep up with the current demand. With the high amounts of current comes high heat, which will damage the electrical components such as the power board, console, and other small components within the treadmill.
- **Low Voltage at the Outlet** – A few things can cause this; the most common is too many treadmills on one circuit (or neutral wire), which overloads the wire, heating it up, and causes the voltage at the outlet to drop. This can also happen if the wires are not a large enough size, or if the distance from the panel to the outlet is too far. Low voltage at the outlet can only be measured when the load is at its peak. The voltage may be fine when all the treads are off, but lower significantly when they are all on and drawing 20-amps. Low voltage causes problems for the drive motor, power board, and the motor controller, and can result in unexpected behaviors of the treadmill.
- **The benefits of an Isolated Ground (IG)** – The primary reason for the use of an IG is to provide a noise-free (electromagnetic interference) ground return, separate from the equipment grounding return. The IG provides an isolated separate ground path for the ground reference in the treadmill. The IG also helps eliminate the potential for a "ground loop", which can cause electromagnetic interference.