

## TECHNICAL TIP - AUTOTRANSFORMERS

R&M Inverters are designed for three-phase power at 460 volts.

(Refer to the Inverter Owner's Manual for inverter specific voltage tolerances)

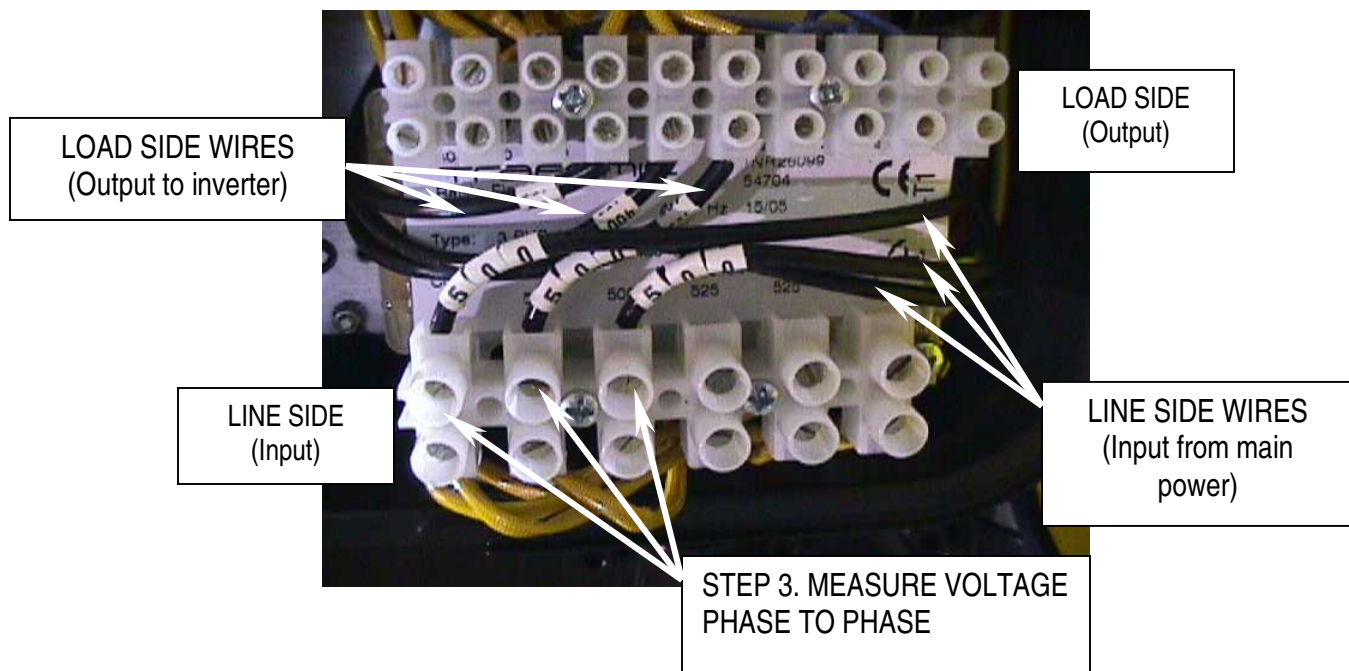
All R&M inverters with supply voltages other than 460 volts are supplied with an autotransformer to step-up or step-down the voltage to 460 volts. 460-supply voltage will help eliminate faults and prevent high voltage damage to the inverter.

All CMX007 inverters are supplied with an autotransformer regardless of voltage supply.

### **⚠ WARNING**

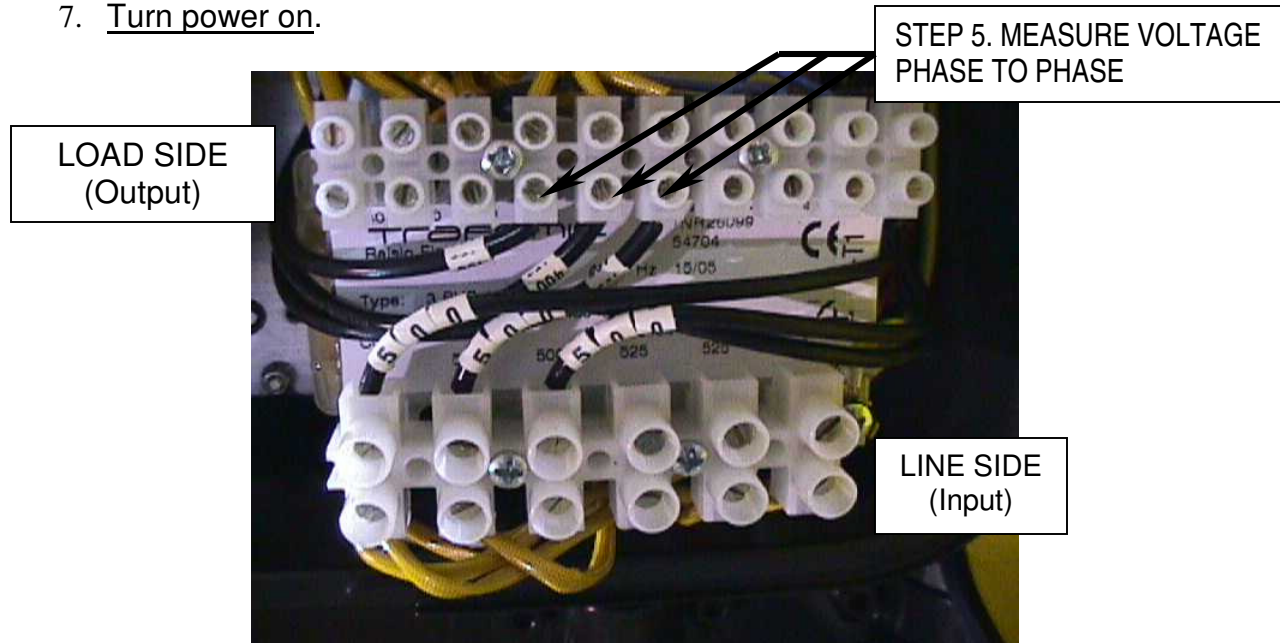
**THE FOLLOWING PROCEDURE MUST BE FOLLOWED FOR ALL R&M INVERTER CONTROLLED EQUIPMENT PRIOR TO SUPPLYING VOLTAGE.**

1. Turn off power.
2. Disconnect the three load side wires from the autotransformer taps and insulate (wire nut) to prevent shock.
3. Turn power on. Then measure the actual line voltage @ the input (line) side of the transformer. (Example: The line voltage measures 496 volts phase-to-phase)
4. Turn off power. Then move the three line side wires (from power supply) of the autotransformer to the taps marked closest to the actual line voltage. (Example: 500 volt taps – see picture)



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5. Turn power on. Then measure the load side taps of the autotransformer to locate the taps closest to 460 volts (not to exceed 480V). These are ratio transformers – actual voltage may not be exactly 460 volts.
6. Turn off power. Then reconnect the three load side wires to the taps identified in step number 5. (Example: 460 volt taps - see picture below)
7. Turn power on.



**NOTES:**

- It is recommended to measure voltage at off-peak time!
- Autotransformers can be used as a step up or step down transformer.
- Inverter acceleration and deceleration times should not be adjusted without contacting the factory.
- R&M Materials Handling, Inc. recommends that both the *NEC* and *CMAA* guidelines for grounding be followed.

*National Electric Code 2005* states in **610.61 Grounding** “The trolley frame and bridge frame shall not be considered as electrically grounded through the bridge and trolley wheels and its respective tracks. A separate bonding conductor shall be provided.”

**CMAA #70 Section 5.14.7** states: “A minimum of two collectors for each runway conductor shall be furnished with inverter use. Use of a grounding conductor is recommended.”