

November, 2007

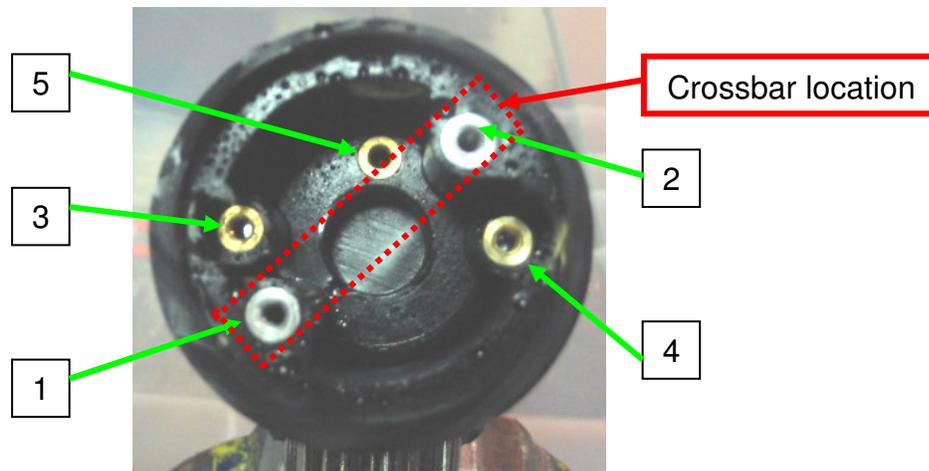
Trouble Shooting WE-Series Frames

Important: Read this guide before attempting repairs to any model of WE-Series Yokes (WE-3, WE-3HD, WE-3LT, and WE-7).

WE-Series Yoke Frames are manufactured in 4 styles; the Standard Frame and the LT Frame, and both frames are available in 115 Volt, and 230 Volt. The Standard frames are black in color, and the LT Frames are Orange. The only identification distinguishing 115 and 230 Volt frames, is from the Serial Number; 230 Volt frames have a "K" at the end. As an example, a 230 Volt frame might have a Serial Number 3490EK, while a 115 Volt unit would be 3490E. Serial Numbers are indicated on the name plates, but also are stamped onto the Legs, where they protrude from the casting.

Before going to the extent of testing the frame for continuity, we recommend that the Power Cord Assembly (Power Cord, Strain Relief, End Cap and AC Plug) be tested. When removing the End Cap, inspect the receptacle connectors within the junction tube, taking care not to damage them when removing the End Cap. While WE-3HD and LT's have superior Power Cord Assemblies, that last 10 times longer than competitive units, one can be fooled by the appearance of the cord. If the connection to the AC Plug is serviceable, check the power cord at the end of the Strain Relief (Cord Protector), as this is the most common place for failures.

Located inside the Junction Tube, at the rear of the Yoke are 5, #6-32 fastener receptacles. This is illustrated below, with all wires and hardware removed;



These connections are used for the following purposes;

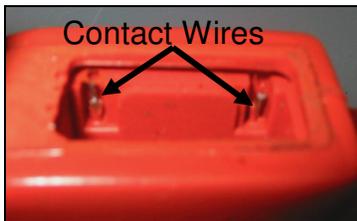
- 1 and 2 are used for connecting the Cross Bar.
Note: The **Ground Wire** (Green) is installed between #2 and the Cross Bar (or the WE-3's End Cap), as this receptacle is slightly lower than #1.
- 3 is used to connect the **Live Wire** (Black)

- 4 is used to connect the **Neutral** Wire (White)
- 5 is for sensing the collapse of the field, within the wire core, when the Standard WE-Frame is used as a WE-7 (AC/DC) Yoke. This connection is not used when the frame is a WE-3 or WE-3HD AC Yoke. Furthermore, this connector is typically not installed on the LT Frames.

To test the continuity, or perform a high voltage insulation test, on the Frame, terminals 1 and 2 are connected to the frame (ground), thus there should be no continuity between these connections and 3 through 5. Terminal #3 should be connected to the forward most wire within the switch cavity. Terminal 4 is connected to the rear most wire within the switch cavity. Terminal 5 has full continuity to Terminal 3, and is located at the end of the coil, as it takes about 250 μ s for the field to collapse after the switch has been deactivated.

When WE-Series Yokes are manufactured, a high voltage test is performed between the Ground, and all other connections (Terminals 3, 4, and 5). When these points are all done, it deletes the need to test with and without the switch installed. This test is performed again between all 3 wires on the AC Plug. High Voltage Testing can be performed with up to 1000 Volts AC or DC.

If there is a concern about the internal wire Coil of the Yoke, it is easily identified with a Digital Multimeter. The resistance for a 115 Volt frame (Across Terminals 3 and 4) should be approximately 1.5 Ω , while a 230 Volt Frame should be 5.5 Ω



The WE-Series Yokes use a Licon #11-304 snap action switch. These switches are subject to failure as the mechanical contacts must handle the full load of approximately 400 Watts. If a WE-Series Yoke frame electrically measures fine, as outlined above, the service technician needs to test the switch. Placing an Electrical Conductivity Meter across the switch will tell one immediately if the switch is faulty or not. However, the switch is soldered to the solid core contact wires (connected to terminals 3 and 4) within the switch cavity. The Electrical Conductivity Meter should be placed on these wires to ensure the solder joints are not "cold". The clearance between the switch, the contact wires and the cast portions of the switch cavity is very tight, so care must be taken when checking or soldering these connections.